

UNDER UPDATE

Research & Innovation Area

Chemical Research Handbook



2023

Federchimica

The National Federation of Chemical Industry represents more than 1,450 companies, with a total of more than 94,000 employees, grouped into 17 industry associations, divided into 38 Product Groups.

Federchimica is part of Confindustria and, in Europe, of CEFIC (European Chemical Industry Council and ECEG (European Chemical Employers Group).

The Research, Development and Innovation Committee (Co.R.S.I.)

The Co.R.S.I. is the institutional Body of Federchimica that deals with R&D-related issues in chemical companies. The Committee addresses all research and development issues in its work that are of interest to associated companies. Currently, the Research, Development and Innovation Committee also deals with specific issues through 3 Working Groups:

1- Open Innovation and Sustainability and Technology Transfer
2- Nanomaterials and Safety
3- European and National Funds

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The list of companies

Name	Place	Prov.	Dimension
A&A FRATELLI PARODI S.p.A.	Corso Europa 24 - 20001 Inveruno (MI)	MILAN	LARGE
AGC Biologics S.p.A.	Via Meucci 3 - 20091 Bresso (MI)	MILAN	LARGE
AGROSISTEMI S.r.l.	Via del Capitolo 54 - 29122 Piacenza (PC)	PIACENZA	LARGE
AIR LIQUIDE ITALIA S.p.A.	Via Bisceglie 68/70 - 20147 Milano (MI)	MILAN	LARGE
ALLEGRI S.p.A.	Vicolo Salvo D'Acquisto n. 2 - 24050 Grassobbio (BG)	BERGAMO	MEDIUM
ALLNEX ITALY S.r.l.	Via M. Bianchin 62 - 36060 Romano d'Ezzelino (VI)	VICENZA	LARGE
ALTAIR CHIMICA S.p.A.	Via Moie Vecchie 13 - 56048 Saline di Volterra (PI)	PISA	LARGE
ARCHIMEDE R&D S.r.l.	Via Bentivogli 74/5 - 40138 Bologna (BO)	BOLOGNA	MICRO
AXXAM S.p.A.	Via Meucci 3 - 20091 Bresso (MI)	MILAN	MEDIUM
BASELL POLIOLEFINE ITALIA S.r.l.	Via Pontaccio 10 - 20121 Milano (MI)	MILAN	LARGE
BASF ITALIA S.p.A.	Via Marconato 8 - 20811 Cesano Maderno (MB)	MONZA-BRIANZA	LARGE
BECKERS INDUSTRIAL COATINGS ITALIA S.p.A. (Beckers Group)	Via della Guastalla 15 - 20122 Milano	MILAN	MEDIUM
BIOSPHERE S.r.l.	Via Vittorio Borghesi 21 - 47522 Cesena (FC)	FORLÌ-CESENA	SMALL
BOLTON Home Care	Via G.B. Pirelli 19 - 20124 Milano (MI)	MILAN	LARGE
BOREALIS ITALIA S.p.A.	Via Ercolano 8/10 - 20900 Monza (MB)	MONZA-BRIANZA	LARGE
BRACCO IMAGING S.p.A.	Via Folli 50 - 20134 Milano (MI)	MILAN	LARGE
CAP ARREGHINI S.p.A.	Viale Pordenone 80 - 30026 Portogruaro (VE)	VENICE	MEDIUM
CFS Europe S.p.A.	Via Agostino Depretis, 6 - 48123 Ravenna (RA)	RAVENNA	LARGE
CLARIANT PRODOTTI ITALIA S.p.A.	Via Fauser 36/B - 28100 Novara (NO)	NOVARA	MEDIUM
COLOROBBIA ITALIA S.P.A.	Via Pietramarina 53 - 50059 Sovigliana Vinci (FI)	FLORENCE	LARGE
Cosmosol S.r.l.	Piazza San Fedele 4 - 20121 Milano (MI)	MILAN	MEDIUM
CRODA INT. PLC - CRODA ITALIANA S.p.A.	Via Pietro Grocco 915 - 27036 Mortara (PV)	PAVIA	LARGE
DIASEN S.r.l.	Zona Industriale Berbentina 5 - 60041 Sassoferrato (AN)	ANCONA	SMALL
DOVER INDUSTRIES ITALY S.r.l.	Via Bancora e Rimoldi - 22070 Guanzate (CO)	COMO	MEDIUM
DOW ITALIA S.r.l.	Via Francesco Albani 65 - 20148 Milano (MI)	MILAN	LARGE
DUMAX S.r.l.	Via Roma 71 - 26010 Ripalta Cremasca (CR)	CREMONA	SMALL
Durante Adesivi S.p.A. a socio unico	Via G. Garibaldi 23 - 33080 Prata di Pordenone (PN)	PORDENONE	MEDIUM
ÈCOSÌ S.r.l.	Via G. Giorgi 12 - 47122 Forlì (FC)	FORLÌ-CESENA	MEDIUM
ENDURA S.p.A.	Viale Pietramellara 5 - 40121 Bologna (BO)	BOLOGNA	LARGE
F.O.M.E.T. S.p.A.	Via Vialarga 25 - 37050 San Pietro di Morubio (VR)	VERONA	MEDIUM
FLINT GROUP ITALIA S.p.A.	Via Margherita De Vizzi 51 - 20092 Cinisello Balsamo (MI)	MILAN	LARGE
FRATELLI ZUCCHINI S.P.A.	Via C. Colombo 6 - 44124 Ferrara (FE)	FERRARA	MEDIUM

GALA S.r.l. SB	Via A. Cicognani, 11/N - 47121 Forlì (FC)	FORLÌ-CESENA	SMALL
GRAFTONICA S.r.l.	Via Martiri Triestini 7 - 20148 Milano (MI)	MILAN	MICRO
GREEN HAS ITALIA S.p.A. (Greenhas Group)	Corso Alba 85/89 - 12043 Canale (CN)	CUNEO	MEDIUM
HALLSTAR ITALIA S.r.l.	Corso Magenta 82 - 20123 Milano	MONZA-BRIANZA	LARGE
IMA S.r.l.	Via Segré 23 - 27036 Mortara (PV)	PAVIA	SMALL
INDENA S.p.A.	Viale Ortles 12 - 20139 Milano (MI)	MILAN	LARGE
INDUSTRIE CHIMICHE FORESTALI S.p.A.	Via Kennedy 75 - 20010 Marcallo con Casone (MI)	MILAN	LARGE
INNOVHUB - STAZIONI SPERIMENTALI PER L'INDUSTRIA S.r.l.	Via Meravigli 9/b - 20123 Milano (MI)	MILAN	MEDIUM
INTERCOS S.p.A.	P.zza Armando Diaz 1 - 20100 Milano	MONZA-BRIANZA	LARGE
ISTITUTO GANASSINI S.p.A. DI RICERCHE BIOCHIMICHE (Società Benefit)	Via P. Gaggia 16 - 20139 Milano (MI)	MILAN	LARGE
ITALMATCH CHEMICALS S.p.A.	via E. Vismara 114 - 20044 Arese (MI)	MILAN	LARGE
ITELYUM REGENERATION S.p.A.	Via Tavernelle 19 - 26854 Pieve Fissiraga (LO)	LODI	LARGE
KIALAB S.r.l.	Via Lepetit 34 - 21040 Gerezano (VA)	VARESE	MICRO
L'OREAL ITALIA S.p.A. (L'Oréal Group)	Via Primaticcio 155 - 20147 Milano (MI)	MILAN	LARGE
LAMBERTI S.p.A.	Via Marsala 38/D - 21013 Gallarate (VA)	VARESE	LARGE
LANXESS SOLUTIONS ITALY S.r.l.	Via Pico della Mirandola 8 - 04013 Latina (LT)	LATINA	LARGE
LOXEAL S.r.l.	Via Marconato 2 - 20031 Cesano Maderno (MB)	MONZA-BRIANZA	MEDIUM
Maflon S.p.A.	Via Soave 7 - 20135 Milano	MILAN	LARGE
MAPEI S.p.A.	Via Cafiero 22 - 20158 Milano (MI)	MILAN	LARGE
MATRICA S.p.A.	Zona Industriale La Marinella - 07046 Porto Torres (SS)	SASSARI	LARGE
MAYER BRAUN S.r.l.	Via Brigata Marche, 129 - 31030 Carbonera (TV)	TREVISO	SMALL
METLAC GROUP	S.S. 35 Bis dei Giovi 53 - 15062 Bosco Marengo (AL)	ALESSANDRIA	LARGE
NIPPON GASES ITALIA Group	Via B. Crespi 19 - 20159 Milano (MI)	MILAN	LARGE
NOVAMONT S.p.A.	Via Fauser 8 - 28100 Novara (NO)	NOVARA	LARGE
NUOVA SOLMINE S.p.A.	Località Casone - 58020 Scarlino (GR)	GROSSETO	LARGE
OMNISYST S.p.A.	C.so Vittorio Emanuele II 1 - 20122 Milano	MILAN	SMALL
POLITEX S.a.s. di FREUDENBERG POLITEX S.r.l.	Strada Provinciale Novedratese 17/A - 22060 Novedrate (CO)	COMO	LARGE
PROCTER & GAMBLE S.r.l.	Viale Giorgio Ribotta 11 - 00144 Roma (RM)	ROME	LARGE
RADICIGROUP	Via Ugo Foscolo 152 - 24024 Gandino (BG)	BERGAMO	LARGE
REYNALDI S.r.l.	Via Torino 21/1 - 10044 Pianezza (TO)	TURIN	SMALL
ROELMI HPC S.r.l.	Via Celeste Milani 24/26 - 21040 Origgio (VA)	VARESE	LARGE
ROQUETTE ITALIA S.p.A.	Via Serravalle 26 - 15063 Cassano Spinola (AL)	ALESSANDRIA	LARGE
SASOL ITALY S.p.A.	Viale Enrico Forlanini 23 - 20134 Milano (MI)	MILAN	LARGE
SCAM S.p.A.	Strada Bellaria 164 - 41126 Modena (MO)	MODENA	LARGE
SELERANT S.r.l. (Trace One Group)	Via Leonardo da Vinci 19 - 20060 Cassina de' Pecchi (MI)	MILAN	MEDIUM

SERICHIM S.r.l.	Piazzale Marinotti 1 - 33050 Torviscosa (UD)	UDINE	SMALL
SIPCAM OXON S.p.A.	Via Sempione 195 - 20016 Pero (MI)	MILAN	LARGE
SIVAM Coatings S.p.A.	Via Monvisio 10 - 20010 Bareggio (MI)	MILAN	MEDIUM
SOCIETA' ITALIANA ACETILENE E DERIVATI S.I.A.D. S.p.A.	Via San Bernardino 92 - 24126 Bergamo (BG)	BERGAMO	LARGE
Società Italo Britannica L. Manetti - H. Roberts & C. S.p.A.	Via Baldanzese 177 - 50041 Calenzano (FI)	FLORENCE	LARGE
SOL S.p.A.	Via Gerolamo Borgazzi 27 - 20900 Monza (MB)	MONZA-BRIANZA	LARGE
SOL.BAT S.r.l.	Località Casone - 58020 Scarlino (GR)	GROSSETO	LARGE
SOLVAY SPECIALTY POLYMERS ITALY S.p.A.	Viale Lombardia 20 - 20021 Bollate (MI)	MILAN	LARGE
TAKIS S.r.l.	Via Castel Romano 100 - 00128 Roma (RM)	ROME	SMALL
TEMIX OLEO S.r.l.	Via Piero Portaluppi 17 - 20138 Milano (MI)	MILAN	LARGE
Timac Agro Italia S.p.A.	S.P. 13 Località Ca' Nova - 26010 Ripalta Arpina (CR)	CREMONA	LARGE
TORGGLER S.r.l.	Via Prati Nuovi 9 - 39020 Marlengo (BZ)	BOLZANO	MEDIUM
VALAGRO S.p.A.	Via Cagliari 1 - 66041 Atesa (CH)	CHIETI	LARGE
VARIATI S.p.A.	Via Monte Rosa 49/51 - 20863 Concorezzo (MB)	MONZA-BRIANZA	MEDIUM
VERSALIS S.p.A.	Piazza Boldrini 1 - 20097 San Donato Milanese (MI)	MILAN	LARGE
VEVY EUROPE S.p.A.	Via Semeria 16A - 16131 Genova (GE)	GENOA	SMALL
VINAVIL S.p.A.	Viale Jenner 4 - 20159 Milano (MI)	MILAN	LARGE
ZAPI S.p.A.	Via Terza Strada 12 - 35026 Conselve (PD)	PADOVA	LARGE
ZSCHIMMER & SCHWARZ ITALIANA S.p.A.	Via A. Ariotto 1/C - 13083 Tricerro (VC)	VERCELLI	LARGE

How to read the data in the "Chemical Research Handbook" – Part 1

The data required to companies for this document includes both general information and specific information about the business sectors and the company's research expenditures.

There is also a section dedicated to collaborations with public research bodies and an explanatory table on industrial research activities for sustainable chemistry. The research activities also include those carried out in the group's foreign offices and not only in the Italian headquarters.

Company logo

General company information and contacts

Participation to the "Responsible Care" and "SET" programs and the "SusChem Italy" platform of Federchimica

Map

Company's research activities:

Collaborations with public research institutions and national and foreign universities



VINAVIL S.p.A.

GENERAL INFORMATION
Viale Jenner 4 - 20159 Milano (MI)
sito web: <http://www.vinavil.it>

DETAILED INFORMATION
Dimension: LARGE COMPANY
Research expenditure (% of turnover): 5.00%
Number of researchers: 35
Business sectors:
Additives and auxiliaries for textile, paper making, tanning industry, water treatment;
Adhesives and sealants; Paints and varnishes

CONTACTS
Marco Cerna
mcerna@vinavil.it
+39 365507488

LOCATION



DESCRIPTION OF INDUSTRIAL RESEARCH FOR SUSTAINABLE CHEMISTRY

Product research	
Innovative research	Binder for DTM (direct to metal) paints. Microencapsulation of dietary supplements, fertilizers and pesticides. New generation of suspending agents for PVC polymerization. Hydrophobic agents PFAS (per fluoro alkyl substances) free.
Incremental research	VOC reduction, elimination of VKCS (very high concern substances).
Process research	
Innovative research	New process for latex VOC stripping.
Incremental research	Raw materials and energy consumption reduction.
Water conservation research	
	Following previous action.
Chemistry from renewable sources research	
	Cooperation with University for bio-based monomers development.
Wastewater treatment research	
	Biological treatment yield optimization.
CO₂ emission reduction research	
	Consequent to process incremental action.

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - IVALSA
- ENEA
- Innov@hub Stazione Sperimentale per la Seta
- University of Bilbao, Spain (POLYMAT Institute)
- University of Florence

A&A FRATELLI PARODI S.p.A.

GENERAL INFORMATION

Corso Europa 24 - 20001 Inveruno (MI)
sito web: <http://www.fratelliparodi.it>

Operating offices:

Campomorone (GE), Camporosso (IM)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 12

Business sectors: Auxiliaries for detergents and surfactants; Chemicals from biomasses;
Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Lubricants

CONTACTS

Riccardo Pedriali
rpedriali@fratelliparodi.it
+39 010792151

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DESCRIPTION OF INDUSTRIAL RESEARCH

CO2 reduction

Carbon Footprint and LCA study on esters and vegetable oils used for industrial applications. VER Projects



Circular economy

Recovery chain of waste biolubricants to produce new sustainable biolubricants



Biotechnology

Cultivation of microalgae, enzymatic synthesis of fatty acids



Bioeconomy

Valorization of agricultural biomass waste for oleochemical applications



COLLABORATIONS WITH PUBLIC RESEARCH

- CE.SI.S.P. di Genova
- T.I.C.A.S.S. di Genova
- University of Bologna
- University of Genova

AGC Biologics S.p.A.

GENERAL INFORMATION

Via Meucci 3 - 20091 Bresso (MI)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 10.00 %

Number of researchers: 30

Business sectors: Biotechnologies

CONTACTS

Giuliana Vallanti

gvallanti@agcbio.com

+39 02212771

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DESCRIPTION OF INDUSTRIAL RESEARCH

Gene therapy

The company is active in cGMP services for third parties, as CDMO (Contract Development & Manufacturing Organization) with international partners who seek quality and experience to develop and produce advanced and innovative therapies



Viral vectors

The projects include the development, validation, production process control strategy and production for clinical and commercial use, according to current GMPs, of viral vectors (lentiviral, retroviral, adeno-associated) and genetically modified cells.



AGROSISTEMI S.r.l.

GENERAL INFORMATION

Via del Capitolo 54 - 29122 Piacenza (PC)

sito web: <http://www.agrosistemi.it>

Operating offices:

Ca' Morta di Mortizza (PC), Savio-Cervia (RA)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 2

Business sectors: Biotechnologies; Chemicals from biomasses; Environmental services; Fertilizers (organo-minerals, organic, soil improvers and growing media); Specialities fertilizers

CONTACTS

Mattia Sbaffi

mattia.sbaffi@agrosistemi.it

+39 3461432944

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DESCRIPTION OF INDUSTRIAL RESEARCH

Impianti pilota	Design and implementation of pilot plants for testing and validating new processes and technologies under real production conditions, providing full support from initial design to operational startup	 	   
Circular economy	Treatment of waste sludge and/or biomass and extraction of nitrogen and phosphorus. Production of fertilizers from liquid and solid biomass	 	   
Circular economy	Carbon farming – application of biomass in mineralized and low-fertility soils to increase humus contents, the consequent capture of CO2 and its conservation through permanent reforestation of the soil thus treated	 	   
Trasferimento tecnologico	Support for the integration of innovative technologies into industrial settings, facilitating the transfer of research-based solutions to practical applications, aimed at optimizing production processes and fostering innovation	 	   
Circular economy	Extraction of nitrogen and phosphorus from digestates and/or zootechnical sewage, their sanitization and energy valorisation of the extracted nitrogen	 	   
Circular economy	Targeted and flexible formulation of fertilizers with titres higher than the legal minimums	 	   
Circular economy	Formulation of new fertilizers, soil improvers and correctives	 	   



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Bologna (Department of Agricultural and Food Science)
 - University of Pavia (Department of Earth Science)
-

AIR LIQUIDE ITALIA S.p.A.

GENERAL INFORMATION

Via Bisceglie 68/70 - 20147 Milano (MI)

sito web: <http://it.airliquide.com>

Operating offices:

Milano, Pavia, Torino, Verona, Padova, Udine, Modena, Ravenna, Macerata, Roma, Siracusa, Catania, Cagliari

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.30 %

Number of researchers: 3000

Business sectors: Chemicals from biomasses; Liquefied gas; Medical gases; Technical and special gases

CONTACTS

comunicazione.ali@airliquide.com

Data on researchers and research expenditures refer to the entire Group.

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DESCRIPTION OF INDUSTRIAL RESEARCH

Combustion

Oxidation processes to provide high temperature heat to the production of syngas, as well as customer processes including glass, metals, cement and other chemical & refinery processes; flame characterization, burner design, emissions and transmission of heat to the process



Life science

Use of essential small molecules to develop technologies to improve the quality and safety of food and pharma products, and to support the transition to more sustainable solutions for the environment. Focus areas include water treatment, gas to liquid transfer, bioprocesses including biogas production, cryogenics, protective atmospheres, agriculture, and hydrometallurgy for extraction and recycling



Fine chemistry

Design, synthesis, stability and reactivity of fine chemicals; purification of electronic specialty materials; process development for semiconductor manufacturing



Analytical science

Sampling and analytical techniques, instruments for the analytical control our processes and product's quality; method validation protocols and metrology for the quantification of uncertainty in measurements; standards and regulations related to products quality



Computational science

Development of advanced algorithms used to support the different businesses lines: data sciences & artificial intelligence, physical modelling, optimisation, high performance computing and pre-integration with D&IT infrastructures. Focus areas includes design & operation of industrial systems, energy management, healthcare, customer relationship



Material science

R&D on materials (steels, polymers, composites, ceramics) and their functionalization (adsorbents, catalysts, membranes, MOFs,...); gas safety (dispersion, flammability, explosion,...); structural integrity of assets (NDT, corrosion, embrittlement, ...); material processing



Process engineering

R&D of the processes, equipment, design, operation and improvement of production processes and proprietary technologies; integration of proprietary solutions into customers processes; core technologies addressing the Energy transition



COLLABORATIONS WITH PUBLIC RESEARCH

The Air Liquide Group has over 350 partnerships with academics, industrial partners and startups.

ALLEGRINI S.p.A.

GENERAL INFORMATION

Vicolo Salvo D'Acquisto n. 2 – 24050 Grassobbio (BG)

sito web: <http://www.allegrini.com>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 9

Business sectors: Aerosol products; Cleaning and maintenance products - biocides; Cosmetics; Detergents and related products; Flavors and fragrances; Medical surgery: disinfectants; Soap

CONTACTS

laboratorio@allegrini.com

+39 0354242111

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DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainability

Analysis of the range products to improve their sustainability. More and more focused on natural-origin surfactant made by renewable sources. Development of concentrated formulations that allows a reduced water, packaging material and energy consumption.



Formulations

Continue formulation research focused on developing professional detergents with good performances at low environmental impact. Among the main categories there are: home and hard surfaces cleaning, dishwasher detergents and rinse-aids, car care and cleaning products. Research in cosmetic products based on eco-friendly natural-origin raw materials.



Ecolabel

Ecolabel detergent product line. Ecolabel cosmetics product line



COLLABORATIONS WITH PUBLIC RESEARCH

- I.S.I.S. "Giulio Natta" High School
- University of Milan
- University of Milano - Bicocca (Biotechnologies Department)

ALLNEX ITALY S.r.l.

GENERAL INFORMATION

Via M. Bianchin 62 – 36060 Romano d'Ezzelino (VI)
sito web: <http://www.allnex.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.00 %

Number of researchers: 11

Business sectors: Intermediates and specialty chemicals; Resins and thermosetting systems

CONTACTS

Robertino Chinellato
robertino.chinellato@allnex.com
+39 0424516611

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DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Development of resins for powder coating systems containing recycled materials. Utilization of PET from industrial production waste (post-industrial) and separate collection (post-consumer) by chemical recycling



Sustainability

Design and development of powder coating resins with raw materials obtained from bio-masses. Replacement of fossil-based raw materials with renewable alternatives



Recycling

Reintegration into the production process of a matter stream (glycol) destined for disposal. Optimization of reaction water treatment and consequent reduction in the amount of waste generated



Energy saving

Development of resins for powder coating systems by developing low-temperature (low-bake) crosslinking systems. Reduction of energy consumption in the crosslinking process of coatings, with the possibility of application on heat-sensitive substrates



Substitution

Development of resins with high outdoor resistance (hyperdurable) for replacement of fluoropolymer-based systems in architectural applications. Replacement of fluorinated-based liquid paint systems with reduced environmental impact



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Padova (Faculty of Industrial Biotechnology and Chemical Engineering)

ALTAIR CHIMICA S.p.A.

GENERAL INFORMATION

Via Moie Vecchie 13 - 56048 Saline di Volterra (PI)
 sito web: <http://www.altairchimica.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY
Research expenditure (% of turnover): 20.00 %
Number of researchers: 8
Business sectors: Inorganic base chemicals

CONTACTS

Giulia Giannoni
 giannoni@altairchimica.com
 +39 3386346236

Edoardo Anichini
 anichini@altairchimica.com
 +39 3807808149

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DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy	Implementation of innovative processes starting from short supply chain secondary raw materials for the production of inorganic coagulants	 	   
Bioeconomy	Development of new biobased products. Research of new and innovative application	 	   
Circular economy	Elementary analysis of process waste to evaluate possible uses as secondary raw materials	 	   
Purification	Research to encrease the level of purity of inorganic products	 	   
Processes	Research aimed at achieving new innovative process to produce organochlorines	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- University of Pisa (Industrial and Civil Engineering Department)



ARCHIMEDE R&D S.r.l.

GENERAL INFORMATION

Via Bentivogli 74/5 - 40138 Bologna (BO)

sito web: <http://www.archimede-rd.it>

Operating offices:

San Cesario sul Panaro (MO)

DETAILED INFORMATION

Dimension: MICRO COMPANY

Research expenditure (% of turnover): 11.00 %

Number of researchers: 3

Business sectors: Auxiliaries for detergents and surfactants; Biotechnologies; Cleaning and maintenance products - biocides; Detergents and related products

CONTACTS

Lucio Panizza

assistenza@archimede-rd.it

+39 0599775460

Silvia Totti

ricerca@archimede-rd.it

+39 0599775460

Elena Lombardi

regulatory@archimede-rd.it

+39 0599775460

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DESCRIPTION OF INDUSTRIAL RESEARCH

Biotechnology

Research and development of thermostable enzymes for industrial use



Ecodesign

Design of formulations and packaging with low environmental impact by reducing the doses of use and using raw materials from renewable sources, recycled or 100% recyclable packaging



White biotechnology

Use of enzymes for the formulation of commercial products with low environmental impact (such as cleaning and maintenance products, devices and systems for reducing limescale in water, etc...) and for the development of eco-sustainable processes



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - IBIMET, Bologna
- University of Bologna

AXXAM S.p.A.

GENERAL INFORMATION

Via Meucci 3 - 20091 Bresso (MI)
sito web: <https://axxam.com>

Operating offices:

Torre Annunziata (NA)

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 6.00 %

Number of researchers: 110

Business sectors: Active and intermediate principles for the pharmaceutical industry; Animal healthcare products; Biotechnologies; Cosmetics; Flavors and fragrances

CONTACTS

Antonella Solia
antonella.solia.as@axxam.com
+39 3401417430

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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Hit-to-Lead

Support in the hit-to-lead process for the development of lead compound suitable to be promoted to the following phases of drug development



Assay development

Cell-based and cell-free assay development in the early phases of drug discovery



Hit identification

High-throughput screening (HTS) campaigns for the identification of novel bioactive molecules that modulate targets of interest



COLLABORATIONS WITH PUBLIC RESEARCH

Axxam has several research programs in collaboration with a growing network of scientific partners, including several charities and Italian and international research organizations.

Axxam is the proud recipient of a significant number of grants and awards from agencies at the local, national and international levels, including:

- AICos – Development of an in vitro assay platform for the identification of new pharmacological compounds for the treatment of rare neurodegenerative diseases, with a particular focus on ALS (Italian Ministry of Economic Development, MISE)
- LeMo - "Design, synthesis, and optimization of novel small molecule positive modulators of the NCX3 transporter for the treatment of neurodegenerative disorders" (NCX3) (Università degli studi di Napoli on behalf of MUR, Ministry of University and Research)



LyondellBasell



BASELL POLIOLEFINE ITALIA S.r.l.

GENERAL INFORMATION

Via Pontaccio 10 - 20121 Milano (MI)
sito web: <http://www.lyondellbasell.com>

Operating offices:

Brindisi, Ferrara

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.00 %

Number of researchers: 400

Business sectors: Advanced materials; Compounds and auxiliaries for plastics, plasticizers and similar products; Intermediates and specialty chemicals; Resins and thermoplastic systems

CONTACTS

Helena Huovinen
helena.huovinen@lyb.com
+31 611463323

The researchers are located in Italy, Germany and the USA.

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

CO2 reduction

Development of products for waterproofing roofs in favor of thermal insulation.
Development of new plastic materials aiming for weight and thickness reduction.
Development of thermoplastic materials characterized by better workability at low temperature with consequent energy savings



Innovation

Development of plastic materials for applications in which traditional materials are used (metal, wood, cement, paper and glass) to the advantage of lightness, transparency, versatility, energy consumption and recycling. Development of new generation low-density materials for the automotive sector to reduce emissions and fuel consumption. Development of new generation materials with controlled viscosity and high performance for the hot melts and adhesive sector



Innovation

Development of process technologies for polyolefins with lower environmental impact and energy requirements. Development of new catalysts with high yield and isotacticity. Development of new catalysts to reduce the environmental impact of toxicological classifications



Circular economy

Development of products for the production of easily recyclable products. Development of polymers derived from post-consumer plastics or sustainable raw materials. Research in the field of Chemical/Molecular Recycling to produce hydrocarbons from plastic waste that is difficult to mechanically recycle and could replace oil in producing virgin plastics suitable for food contact or use in the medical sector



COLLABORATIONS WITH PUBLIC RESEARCH

- "Federico II" University of Naples
 - "La Sapienza" University of Rome
 - University of Calabria
 - University of Ferrara
 - University of Padua
 - University of Salerno
 - University of Turin
-

BASF ITALIA S.p.A.

GENERAL INFORMATION

Via Marconato 8 - 20811 Cesano Maderno (MB)

sito web: <http://www.basf.it>

Operating offices:

Zingonia (BG), Fino Mornasco (CO), Roveredo in Piano (PN), Villanova d'Asti (AT), Giussano (MB), Pontecchio Marconi (MO), Roma, Lugo di Romagna (RA), Scandicci (FI), Sant'Agata Bolognese (BO)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.20 %

Number of researchers: 20

Business sectors: Active and intermediate principles for the pharmaceutical industry; Adhesives and sealants; Advanced materials; Animal healthcare products; Auxiliaries for detergents and surfactants; Biotechnologies; Cleaning and maintenance products - biocides; Compounds and auxiliaries for plastics, plasticizers and similar products; Crop protection products; Fertilizers (organo-minerals, organic, soil improvers and growing media); Flavors and fragrances; Food additives and processing aids; Ingredients for food supplements and functional food; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Inorganic base chemicals; Intermediates and specialty chemicals; Liquefied gas; Lubricants; Medical surgery: disinfectants; Organic base chemicals; Paints and varnishes; Products intended for use in animal feed; Resins and thermoplastic systems; Resins and thermosetting systems; Surfactants and raw materials for detergents; Technical and special gases

CONTACTS

richieste_italia@basf.com

+39 0362512280

DATASHEET ICONS



PRODUCTS

PROPRIETARY SEARCH



PROCESSES

THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Water saving

Improvement of process production performance



New products

New quality characteristics and product performances in their respective fields of application. Light-enhancing agents used in polymers and improvement of polyurethane characteristics for different applications. In the Agro sector, testing of products (fungicides, insecticides, and herbicides) and functional solutions aimed at developing lines of defense for Mediterranean crops



Processes

Increase efficiency through process dematerialization paperless solutions, smart devices, RPA, plant automation, vertical/horizontal integration and data modeling. Piloting/exploration of other 4.0 technologies (Blockchain, A.R., AGV, IoT)



COLLABORATIONS WITH PUBLIC RESEARCH

BASF Group companies in Italy work with research bodies and universities on specific projects in a variety of sectors in accordance with needs that are identified on the basis of issues related to product research or to improving performance for the end user.



BECKERS INDUSTRIAL COATINGS ITALIA S.p.A. (Beckers Group)

GENERAL INFORMATION

Via della Guastalla 15 - 20122 Milano
sito web: <http://www.beckers-group.com>

Operating offices:

Caleppio di Settala
Caleppio di Settala

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover):

Number of researchers:

Business sectors: Paints and varnishes

CONTACTS

Valter Landi

+39 3407213301

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Coil coating

The containment of the environmental impact in the entire life cycle of the product, from the creation, to the use up to its disposal. Research continues towards the containment of consumption, the improvement of the production cycle, the acquisition of new technologies that are increasingly effective and efficient. Creation and optimization of products in line with customer requests, trying to anticipate the needs of the market as well as the environment



BIOSPHERE S.r.l.

GENERAL INFORMATION

Via Vittorio Borghesi 21 - 47522 Cesena (FC)
sito web: <http://www.biospheresrl.com>

Operating offices:

Forlì (FC)

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover):

Number of researchers: 12

Business sectors: Biotechnologies

CONTACTS

Marco Pistocchi
info@biospheresrl.com
+39 0543444597

Arianna Andreotti
info@biospheresrl.com
+39 0543444597

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Enzymes

Research, development and supply of enzymes for a wide range of applications: API manufacturing, cosmetics and personal care, diagnostics, plant and soil care, food and nutraceuticals, animal health and feed, household and industrial cleaning, fibers and polymers. Enzyme identification and optimization of bioconversion processes (Enzyscreen technology, DoE statistical approach). Enzyme engineering and evolution. Development of fermentation (Bioreactors: 5L, 100L 1000L) and purification processes (disk-stack centrifuge, high-pressure homogenizer, tangential flow and micro-filtration, tangential flow and ultra-filtration). Enzyme immobilization and solid and liquid formulation. Full scale industrial manufacturing of fermentation and biocatalytic bioprocess. Analytics and qualitative and quantitative characterization (high throughput biocatalysis assays, Ultra-High Performance Liquid Chromatography, UV-VIS Spectrophotometry, SDS-PAGE Protein quantification)



Fermentation processes

Research and development of fermentation processes for a wide range of applications: API manufacturing, cosmetics and personal care, diagnostics, plant and soil care, food and nutraceuticals, animal health and feed, household and industrial cleaning, fibers and polymers. Microbial strains screening for the selection of high productive strains (e.g. proteins, secondary metabolites) (Enzyscreen technology, DoE statistical approach). Identification of best microbial growth conditions. Development and optimization of best microbial fermentation conditions. Full scale industrial manufacturing of fermentation and biocatalytic bioprocess. Pilot plant 1000L. Analytics and qualitative and quantitative characterization (high throughput biocatalysis assays, Ultra-High Performance Liquid Chromatography, UV-VIS Spectrophotometry, SDS-PAGE Protein quantification, real-time fermentation gas analyser)



Circular economy

Research and development of bioprocesses for the valorisation of by-products. Identification and optimization of conversion process based on fermentation and biocatalysis processes. Development of the bioprocess from lab to industrial scale. Pilot plant 1000L testing



Purification

Research and development of optimized downstream processes for the separation of the target product from the culture broth with high recovery yields. Development of downstream processes from lab to industrial scale (disk-stack centrifuge, high-pressure homogenizer, tangential flow and micro-filtration, tangential flow and ultra-filtration). Analytics and qualitative and quantitative characterization (Ultra-High Performance Liquid Chromatography, UV-VIS Spectrophotometry, SDS-PAGE Protein quantification)



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Turin (Department of Life Science and System biology)
 - University of Amsterdam (Van't Hoff Institute for Molecular Sciences HIMIS)
-



BOLTON

BOLTON Home Care

GENERAL INFORMATION

Via G.B. Pirelli 19 - 20124 Milano (MI)
sito web: <https://www.boltongroup.net/>

Operating offices:

Nova Milanese (MB)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover):

Number of researchers:

Business sectors: Detergents and related products

CONTACTS

Ludovico Panzieri
lpanzieri@boltonmanitoba.it
+39 3386710801

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

In packaging and product design use of the principle of "doing more with less," which means being increasingly efficient in the circular and sustainable economic model by using fewer materials, including reducing the thickness and weight of packaging wherever possible. To reduce the environmental impact of packaging, working toward the goal of using an increasing % of recycled and/or biobased plastics within packaging, in view of ambitious Group-wide target of using 40% recycled plastic by 2025. Commitment in using zero virgin plastic from fossil sources by 2035



Waste reduction

Commitment to ensure 100% of industrial waste is recycled or recovered. In addition, by 2025, 100% of packaging will be reusable, refillable or designed to be recycled



Decarbonization

Commitment in maintaining 100 % renewable electricity purchased in plant's production facilities. In addition, by 2025 commitment in assessment of the Scope 3 reduction target in line with SBTi



Zero deforestation

By 2025 commitment to achieve positive forest management: 100% recycled or sustainably sourced paper in packaging



Circular economy

Development of more sustainable formulas for products and increase of the use of naturally sourced or renewable ingredients, with the goal of using 50 percent of ingredients from circular sources or from abundant minerals by 2030. In addition, by 2035 commitment in the achievement of 100% biodegradable ingredients in household care products



Water saving

Commitment to contribute to the achievement of the target of the Bolton Group, toward a 20% reduction compared to 2017 levels by 2025. By 2028, planning to conduct a "water audit" at plant to define specific action plans



COLLABORATIONS WITH PUBLIC RESEARCH

Collaborations with Public and Private research Institutes.

BOREALIS ITALIA S.p.A.

GENERAL INFORMATION

Via Ercolano 8/10 - 20900 Monza (MB)
 sito web: <http://www.borealisgroup.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.10 %

Number of researchers: 550

Business sectors: Compounds and auxiliaries for plastics, plasticizers and similar products

CONTACTS

Federico Reginato
federico.reginato@borealisgroup.com
 +39 03920421

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Renewable sources

Research aims to maximize the production of Polyolefins from industrial or civil waste materials (such as residual frying oils or wood processing waste)



Chemical recycling

An innovation project is underway with technology that uses a chemical recycling process to recover "dumpster" waste, especially low-grade waste that cannot normally be recycled by mechanical recycling



Sustainability

New products and applications with enhanced sustainability are being developed in collaboration with value chain partners. Two new grades of Quentys™ polyolefins have been introduced that form the basis of two new types of solar encapsulating film. Quentys™ grades make PV modules more sustainable because they offer better and longer operational reliability at a lower cost



Water saving

Water and sanitation systems can be made more efficient and reliable by using Borealis materials. For example, compared to conventional materials, modern polyethylene (PE) systems reduce water losses by a factor of eight



Digitalization

A Digital Program was implemented that led to the establishment of the Borealis Digital Studio, a cross-functional team of digital professionals whose goal is to develop smart solutions for both customers and employees. The increasing use of digitization will be one of the transformational factors for the realization of Borealis' 2035 strategy; it will not only increase productivity and improve customer experience, but also support the realization of the group's sustainability strategy



GHG reduction

Continuously reducing the carbon footprint through increased energy efficiency and developing innovative solutions that save energy along the value chain. These solutions range from lightweight plastics to chemicals used for renewable energy solutions and accurate fertilizer dosing in agriculture. In 2021, the first photovoltaic system with solar panels using Borealis' Quentys™ technology was installed at the Monza plant. Research is also underway to increase the use of renewable energy and reduce emissions in transportation



Research is underway on technology and product innovations in mechanical recycling, supported by the acquisition of two European plastics recyclers and the acquisition in 2021 of a minority stake in one company, a provider of innovative plastics recycling solutions. The goals by 2030 will be to ensure that 100 percent of consumer products are recyclable, reusable or made from materials from renewable sources and to increase the volume of recycled plastic solutions to 350,000 t/a



COLLABORATIONS WITH PUBLIC RESEARCH

Borealis has ongoing research and development collaborations with leading universities, and regularly participates in symposia, working groups and advisory committees, and supports research studies.

BRACCO IMAGING S.p.A.

GENERAL INFORMATION

Via Folli 50 - 20134 Milano (MI)
sito web: <http://www.bracco.com>

Operating offices:

Colleretto Giacosa
Colleretto Giacosa

Ceriano Laghetto
Ceriano Laghetto

Torviscosa
Torviscosa

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 9.00 %

Number of researchers: 100

Business sectors: Active and intermediate principles for the pharmaceutical industry

CONTACTS

Luciano Lattuada
luciano.lattuada@bracco.com
+39 0221772654

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainability

New contrast agents containing metals more sustainable than gadolinium. New contrast agents for optical imaging



Circular economy

Recovery and recycle of strategic raw materials



Process intensification

Intensification and optimization of industrial processes



Circular economy

Synthesis of raw materials or solvents from renewable sources



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR-ITM University of Calabria
 - IIT, Genova
 - Politecnico of Milano University
 - University of Piemonte Orientale
 - University of Milano
 - University of Milano Bicocca
 - University of Perugia
 - University of Turin
 - University of Trieste
 - University of Udine
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ARREGHINI®

ITALIAN PAINTS SINCE 1950

CAP ARREGHINI S.p.A.

GENERAL INFORMATION

Viale Pordenone 80 - 30026 Portogruaro (VE)
sito web: <http://www.caparregghini.it>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 1.00 %

Number of researchers: 3

Business sectors: Paints and varnishes

CONTACTS

Elisabetta Centis
elisabettacentis@caparregghini.it
+39 0421278107

DATASHEET ICONS



PRODUCTS



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SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainability

Adoption of the Life Cycle Assessment (LCA) model for evaluating the environmental impact of the product. EPD (Environmental Product Declaration) obtained for 21 products across different sectors. Research and selection of raw materials derived from renewable sources and/or supported by environmental declarations or impact assessment studies. Research on plastic packaging containing recycled material. Development of products specifically designed for building renovation, upgrading, and energy efficiency improvements



CFS Europe S.p.A.

GENERAL INFORMATION

Via Agostino Depretis, 6 – 48123 Ravenna (RA)
sito web: <http://www.cfseuropespa.com>

Operating offices:

Ravenna
Ravenna

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.50 %

Number of researchers: 3

Business sectors: Food additives and processing aids; Intermediates and specialty chemicals; Products intended for use in animal feed

CONTACTS

Sauro Passeri
sauro.passeri@camlinfs.com
+39 0544261569

DATASHEET ICONS

 PRODUCTS

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 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

New products

Study, production and marketing of new chemical products or high purity chemical products



Natural antimicrobics

Study and production of natural antimicrobics for food/feed market



Industry 4.0

Industry 4.0 project for smart management of the industrial processes



Natural antioxidant

Study and production of natural oxidant for food/feed market



Circular economy

Study and construction of a plant for the recovery of industrial waste and the production of energy



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Bologna – Department of Food Science and Technology (DISTAL)
- Università di Firenze – Department of Agricultural, Food, Environmental and Forestry Sciences (DAGRI)
- CNR – ISSMC Istituto di Scienza, Tecnologia e Sostenibilità per lo Sviluppo dei Materiali Ceramici

CLARIANT PRODOTTI ITALIA S.p.A.

GENERAL INFORMATION

Via Fauser 36/B - 28100 Novara (NO)
 sito web: <http://www.clariant.com>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 1.50 %

Number of researchers: 8

Business sectors: Intermediates and specialty chemicals

CONTACTS

Nicola Ballarini
nicola.ballarini@clariant.com
 +39 0321676600

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Terephthalic acid

Development and production of catalysts for terephthalic acid purification



Methanol oxidation

Development and production of catalysts for methanol selective oxidation



PVC

Development and production of catalysts for oxichloruration of ethylene



COLLABORATIONS WITH PUBLIC RESEARCH

- "Ca Foscari" University of Venice
- University of Genova

COLOROBbia ITALIA S.P.A.

GENERAL INFORMATION

Via Pietramarina 53 - 50059 Sovigliana Vinci (FI)
 sito web: <http://www.colorobbiaitalia.com>

Operating offices:

Modena

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.50 %

Number of researchers: 14

Business sectors: Ceramic glaze, inorganic pigments, metal oxides

CONTACTS

Andrea Barzanti
barzantia@colorobbia.it
 +39 0571709724

DATASHEET ICONS



PRODUCTS

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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Digitalization

Research on the feasibility of digitizing production plants to interconnect them to the corporate network suitable for a improve production-logistics information flow, maintenance machinery monitoring, monitoring environmental emissions



Processes

Optimization of production processes to improve yields, reduce industrial costs and environmental impact. Studies of new industrial plants to improve efficiency



Substitution

Development of new formulations to meet new market needs. Optimization of the formulations of the products to improve their characteristics. Research on raw materials for product optimization. Search for raw materials from recycled sources to reduce the environmental impact of their products. Search for the replacement of raw materials classified as dangerous to lower the environmental impact and reduce the risks of operator exposure



Cosmosol S.r.l.

GENERAL INFORMATION

Piazza San Fedele 4 - 20121 Milano (MI)

sito web: <https://www.cosmosol.com>

Operating offices:

Mulazzano

Mulazzano

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 0.90 %

Number of researchers: 5

Business sectors: Aerosol products; Cosmetics; Detergents and related products; Medical surgery: disinfectants

CONTACTS

Federica Naso

federica.naso@cosmosol.com

+39 02988891233

Administrative and operational headquarter: Via Quartiano 25 - 26837 Mulazzano (LO)

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Ecodesign

The researchers of the Research and Development Laboratory are constantly working to create effective formulas that are consistent with the company's sustainability ideals and, of course, with customer demand. Innovation is pursued on all product categories, following the goals of our sustainability program, the CARE (Conscious Aerosol Research for Environment). The primary goal of the program is to reach 80% of products with eco-friendly propellants by 2026. The program promotes several concepts such as: the "less is more" philosophy, which generally involves developing products with as few ingredients as possible, non-controversial from a safety point of view and environmentally friendly; products with ingredients particularly attentive to social and environmental impact, such as RSPO certified, Responsible Mica Certified; research of raw materials from renewable and vegetable sources for the formulation of Cosmos or Nature products "compliant/certified" and / or with Nautal Index (ISO16128) >90; Replacement of traditional propellants of petrochemical origin with environmentally friendly propellants such as compressed air or nitrogen; Use of raw materials from renewable sources; New or renewed products formulated with sustainably sourced raw materials



Carbon neutrality

Achieving carbon neutrality by 2025. Cosmosol is committed to setting science-based emission reduction targets in all areas, in line with the 1.5°C emission scenarios and the criteria and recommendations of the Science Based Targets initiative



LCA

Studies in collaboration with the spin-off of the University of Padua for the determination of the life cycle of products



Circular economy

Surveys on the % recyclability of finished products. Promotion of "concentrated" products thanks to the use of eco-friendly propellants such as compressed gases. Participation in the pilot project on circularity indicators in the chemical sector thanks to Federchimica, Istituto Ergo S. Anna and Certiquality



ADDITIONAL INFORMATION

- University of Padua (Spinlife)
- University of Pavia (Department of Drug Science)
- University of Salford Manchester

CRODA INT. PLC - CRODA ITALIANA S.p.A.

GENERAL INFORMATION

Via Pietro Grocco 915 - 27036 Mortara (PV)
sito web: <http://www.croda.com>

Operating offices:

Altavilla Vicentina (VI)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover):

Number of researchers:

Business sectors: Active and intermediate principles for the pharmaceutical industry; Auxiliaries for detergents and surfactants; Biotechnologies; Flavors and fragrances; Ingredients for food supplements and functional food; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Surfactants and raw materials for detergents

CONTACTS

Laura Fusani
laura.fusani@croda.com
+39 0384205011

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Polymers	Discovery and synthesis of new biodegradable polymers for crop and consumer applications	 	   
Surfactants	Discovery and synthesis of new molecules to replace petrochemical based surfactants, with a range of HLBs	 	   
Delivery system	Development of novel delivery systems for pharmaceuticals, treating the WHO list of top 10 diseases	 	   
Actives	Development of plant based active ingredients for the beauty market	 	   
Fragrances	Development of sustainable fragrances that are from sustainable biomass sources	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

Croda have over 60 active projects ongoing with external partners, ranging from multinationals to SMEs to universities across the globe. Many these are based in the UK funded by UK Research and Innovation (BBSRC & EPSRC). Other global based collaborations are ongoing with universities in the Netherlands, Japan, India, Singapore, Brazil and USA.

DIASEN S.r.l.

GENERAL INFORMATION

Zona Industriale Berbentina 5 - 60041 Sassoferrato (AN)
sito web: <http://www.diasen.com>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 6

Business sectors: Compounds and auxiliaries for plastics, plasticizers and similar products; Financial, services, engineering and research companies; Paints and varnishes

CONTACTS

Gian Pietro Simonetti
gianpietro.simonetti@diasen.com
+39 07329718

DATASHEET ICONS



PRODUCTS

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SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Wastewater treatment

Through a production improvement plan that has taken shape in a customised cork milling plant specifically tailored to needs (especially related to cork milling), it has been achieved an increase of about 30% in usable raw material from the re-introduction of the waste fraction into production and the recovery of all particle sizes smaller than 1 mm that previously flowed into the waste. Through a process of training of specialised waste disposal operators, it has been implemented a practice of careful sorting between the various types of recyclable paper and plastic in the current production department. This waste is then deposited in the containers specially provided by the municipal waste collection company. In the process of maintaining our machinery, it has been introduced a separation process between liquid and sludge waste. This allows to direct the liquid waste to a dedicated plant for its treatment, which purifies it, generating clean water, ready to be reused. The waste is then managed with the help of a third party company (Omnisyst)



Products improvement

Improving the formulations of mortars, paints and waterproofers for construction and architecture, by paying particular attention to the hazardousness of the components and the use of natural or recycled raw materials. Development of a line of research aimed at incorporating by-products (in the form of industrial waste) from other local or national industries into production processes, thus giving these raw materials a second life. Diasen is able to provide a self-declaration stating that all the packaging materials used are recyclable and that, once their life cycle is over, also the products of the Diathonite® line can be reused as inerts. Commitment to using recycled and renewable raw materials for most of the products in the catalogue. What's more, the packaging materials used are all recyclable: the bags for bagging powder products are made of paper, while the buckets for liquids are made of recycled plastic; each pallet of products rests on a wooden pallet (an organic and ecological material, 100% renewable and biodegradable); furthermore, the polyethylene sheets, ideal for covering pallets or pallets, protecting them and avoiding tampering, are sent for recovery or recycling



New products	Development of new material formulations paying particular attention to the hazardousness of the components and the use of natural or recycled raw materials. Evaluation of new products by means of life cycle analysis (LCA), a structured and internationally standardised method for quantifying potential impacts on the environment and human health, starting with the respective resource consumption and emissions. Moreover, it has been eliminated the use of almonst solvents within liquid products, replacing them with water-based formulations. All but one of the liquid products is now formulated without the use of solvents. In terms of legal compliance, on the other hand, every product (mortars, paints and waterproofing for building and architecture) bearing one or more hazard symbols in the Material Safety Data Sheet has been uploaded to the Dangerous Preparations Archive and the list of hazardous preparations has been forwarded to the Istituto Superiore della Sanità (ISS). In terms of product safety, to date, no product has ever been formulated with SVHC. To reduce atmospheric emissions and improve the living comfort that products bring to the structures in which they are applied, products are certified by Third Party Bodies that demonstrate low VOC emissions, which are therefore able to contribute to indoor air quality (indoor comfort). A large proportion of products have been certified with Indoor Air Quality (AIQ) Certification. This has been assessed for several countries and regulations. These include the marks: French VOC Regulation (A+) and French CMR components; Italian CAM Edilizia; AgBB/ABG; Belgian Regulation; EMICODE (EC 1 PLUS - very low emission of volatile organic compounds- PLUS); Indoor Air Comfort® and Indoor Air Comfort GOLD®; Blue Angel (DE-UZ 113); BREEAM International and BREEAM® NOR; LEED®; and CDPH (Classroom scenario and Office scenario)	    
Water saving	Through a study and design of ways of organising existing production processes, it has been studied and designed a way of optimising manufacturing processes in order to reduce the number of washing cycles and, consequently, the use of water. As a result, it was possible to achieve a more precise scheduling of production processes that allowed for a reduction in tank washing cycles. In addition, opportunities were identified to reuse the water already used	    
Processes	Through the purchase of new machinery, it has been progressively automated the production process of articles. For the manufacture of liquid products, it has been introduced an innovative automation machine. This equipment allows more precise dosing of raw materials and is integrated with another device for bottling the finished product in buckets. In addition, it has been done an investment in a mechanical arm that speeds up the pelletising of liquid products, organising them into neat stacks within minutes. This investment has significantly reduced the manual workload for operators, easing their task	    
Processes	It has been made a significant modification to the production plant to enable the manufacture of both cork-based and non-cork-based plasters. This plant is interconnected with silos dedicated to the supply of raw materials, which are weighed directly by the plant itself to prevent any errors or potential waste of material. Once weighed, the raw materials are mixed to obtain the final product, which is packaged in paper bags. In addition, the plant automatically places the bags on pallets and tapes them, making them ready for shipment	    
CO2 reduction	With a view to reducing polluting emissions, the heating and air-conditioning systems of the interiors of the buildings (in particular the offices of the plant in Sassoferrato and the Genial Materials laboratory in Fabriano) have been replaced with heat pump systems that allow considerable energy savings. A photovoltaic system has also been installed on the roof of the factory to produce clean energy that can be used in production processes	    
Renewable sources	The product line of plasters consists entirely of cork-based materials and other natural raw materials. Cork is a rapidly renewable natural product. Cork is also used in some finishes with very particular aesthetic effects, used in interior design and to cover furniture and bathroom furnishings	    

COLLABORATIONS WITH PUBLIC RESEARCH

- CIRIAF – Interuniversity Centre of Research on Pollution and the Environment
 - Florence City
 - ITC – CNR
 - Politecnico delle Marche University
 - University of Camerino
 - University of Perugia
-



DOVER INDUSTRIES ITALY S.r.l.

GENERAL INFORMATION

Via Bancora e Rimoldi - 22070 Guanzate (CO)
sito web: <http://www.j-k-group.com>

Operating offices:

Novedrate (CO)

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 2.30 %

Number of researchers: 10

Business sectors: Printing inks

CONTACTS

Monica Cingolani
monica.cingolani@j-k-group.com
+39 029650169

<http://www.msitaly.com>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Inks

The goal is delivering safely and sustainably water based chemical solutions, by providing all the key advantages of digital technology. Patent pending digital pigment ink no pre- and post-treatment; reactive, disperse and dye-sub digital inks ranges





DOW ITALIA S.r.l.

GENERAL INFORMATION

Via Francesco Albani 65 - 20148 Milano (MI)

sito web: <http://www.dow.com>

Operating offices:

Como

Como

Pavia

Pavia

Bergamo

Bergamo

Correggio

Correggio

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.80 %

Number of researchers: 75

Business sectors: Adhesives and sealants; Advanced materials; Auxiliaries for detergents and surfactants; Ceramic glaze, inorganic pigments, metal oxides; Chemicals from biomasses; Cleaning and maintenance products - biocides; Compounds and auxiliaries for plastics, plasticizers and similar products; Detergents and related products ; Food additives and processing aids; Ingredients for food supplements and functional food; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals; Lubricants; Medical surgery: disinfectants; Organic base chemicals; Organic pigments and dyestuffs; Paints and varnishes; Resins and thermoplastic systems; Resins and thermosetting systems; Soap; Surfactants and raw materials for detergents

CONTACTS

Thomas Mosciatti

tmosciatti@dow.com

+39 052264

Dow Group in Italy (Dow Italia S.r.l., Dow Italia Commercial Division S.r.l., Rohm and Haas Italia S.r.l.)

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

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 SERVICES

 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Digitalization

Digitalization, big data analysis, and predictive intelligence applied to chemical research. Improved plant productivity through digitalization and predictive intelligence



Automotive

Technologies and products for the automotive and electrification industry. Solutions for adhesion and proper functioning of electric mobility battery components. Weight reduction technologies for vehicles



CO2 reduction

New building blocks and technologies for energy savings. Improved energy efficiency of production facilities with reduced carbon footprint. Products and technologies for thermal insulation. Reflective coatings for roofs for greater energy efficiency. Waterproof and UV-resistant construction materials. Fast-setting two-component polyurethane foams for construction



Sustainability	New technologies for fire resistance in materials without potentially toxic substances. Adhesives for industrial applications (photovoltaics)	 	   
Circular economy	Adhesives and binders for mechanical recycling and extending the life cycle of plastic, organic, and inorganic materials. New innovative processes for producing chemicals from renewable and circular sources. Chemical recycling of recovered polyurethane foams from used mattresses for the production of new polyols for various applications. Chemical recycling of used engine oils and regeneration into new raw materials for the automotive industry. Recyclable polyethylene containers for food	 	   
Polyurethanes	Polyurethane formulations for rigid, flexible, and composite applications	 	   
Packaging	Flexible and rigid packaging solutions that ensure extended storage life for food products. Adhesives and heat-seal lacquers for flexible food packaging applications. Appliance insulation technologies for improved energy efficiency and reduced environmental impact (use of new low-impact greenhouse gas expanding agents)	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

Curricular (degree and non-degree) internship collaborations with the universities of Bologna, Padua, Modena, Ferrara and Milan Polytechnic. Scientific collaborations with the universities of Naples and Bologna and the Politecnico di Milano.

DUMAX S.r.l.

GENERAL INFORMATION

Via Roma 71 - 26010 Ripalta Cremasca (CR)

sito web: <https://www.dumaxsrl.com/>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover):

Number of researchers:

Business sectors: Adhesives and sealants; Paints and varnishes

CONTACTS

Matteo Marzagalli

matteo.marzagalli@dumaxsrl.com

+39 037368112

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Vernici

Tailor-made product formulation to best meet customer needs (UV coatings, LED coatings, glues)



Durante Adesivi S.p.A. a socio unico

GENERAL INFORMATION

Via G. Garibaldi 23 - 33080 Prata di Pordenone (PN)
sito web: <https://www.duranteadesivi.com/en/company/>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY
Research expenditure (% of turnover): 1.50 %
Number of researchers: 7
Business sectors: Adhesives and sealants

CONTACTS

Stefano Romagnano
stefano.romagnano@duranteadesivi.com
+39 0434605211

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Recycling

Recycling of polyurethane adhesives via acidolysis



Digitalization

Implementation of computer monitoring of process parameters



Sustainability

Development of adhesives containing raw materials from renewable or recycled sources



Diisocyanates

Development of reactive polyurethane hot melt adhesives with low residual monomer content



COLLABORATIONS WITH PUBLIC RESEARCH

- "Ca' Foscari" University of Venice (Department of Chemistry and Sustainable Technologies)
- University of Padua (Department of Industrial Engineering)

ÈCOSÌ S.r.l.

GENERAL INFORMATION

Via G. Giorgi 12 - 47122 Forlì (FC)
sito web: <http://www.ecosi.it>

Operating offices:

Mattarello di Trento
Mattarello di Trento

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 3

Business sectors: Active and intermediate principles for the pharmaceutical industry; Auxiliaries for detergents and surfactants; Cleaning and maintenance products - biocides; Detergents and related products; Medical surgery: disinfectants; Organic base chemicals; Soap

CONTACTS

Daniele Cantagalli
info@ecosi.it
+39 0543783152

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

PSV certification, 100% recycled bottles, Ecolabel certification, biodegradable and ecological products, system reuse and refill of the cans: washing them for reuse, product LCA studies, CFP



Products improvement

34 EPD (Environmental Product Declaration) certified products. Environmental certification that guarantees the sustainability of a product by analyzing its entire LCA, from the raw material to the disposal of packaging



New products

PMC – products. ÈCOSÌ is a production workshop for medical-surgical devices registered with the Ministry of Health



Bilanciamento CO2

Ultra Superconcentrated Line: the CO2 emission caused by its production is fully offset through the purchase of Sustainability Credits



Big data

Dynamico2 is a software for evaluating the environmental sustainability of your professional cleaning service. It detects carbon dioxide emissions, water, and energy consumption in real time



Biotechnology

Biological enzymatic activators



Water saving	Design and supply of cutting-edge systems for water recovery for all professional cleaning sectors, with particular attention to industrial laundry	 	   
Peracetic acid	ÈCOSì is registered in the list of art.95 of the Biocidal Products Regulation (BPR) for the production of peracetic acid as an active substance for the types of products PT2, PT3, PT4, PT5	 	   
Nanoplastics	Research with the University of Florence to discover new solutions for the reduction/elimination of nanoplastics release from the industrial washing of synthetic fabrics	 	   
New products	Surfactants derived from plants and industrial processing waste.	 	   
Certifications	EPD, CFP, ECOLABEL, ICEA, PSV, PMC, FSC	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- University of Florence
- University of Genoa



ENDURA S.p.A.

GENERAL INFORMATION

Viale Pietramellara 5 - 40121 Bologna (BO)
 sito web: <http://www.endura.it>

Operating offices:

Ravenna
 Ravenna

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 7.00 %

Number of researchers: 9

Business sectors: Cleaning and maintenance products - biocides; Crop protection products; Inorganic base chemicals; Intermediates and specialty chemicals; Medical surgery: disinfectants

CONTACTS

Francesco Tozzi
 ftozzi@endura.it
 +39 0515281711

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Biotechnology

Enzymatic Chiral resolution



Wastewater treatment

Circular processes, recover and reuse



Water saving

Processes improvement



CO2 reduction

Processes improvement, renewable sources



New products

New Active ingredients as insecticides for household and plant protection applications



Products improvement

New processes and formulations for household and plant protection application.
Naturals Ingredients



Organic synthesis

Flow Chemistry; Chiral and selective chemistry; eterogeneous catalisys; Innovative microincapsulations; photochemistry



COLLABORATIONS WITH PUBLIC RESEARCH

- "Cattolica del Sacro Cuore" University
 - CNR - Bologna
 - Fraunhofer Institute for Microengineering and Microsystems IMM, Mainz, Germany
 - INSTM - Bologna and Insubria
 - University of Bologna
 - University of Milan
 - University of Modena
 - University of Parma
 - University of Piacenza
 - University of Reggio Emilia
-

F.O.M.E.T. S.p.A.

GENERAL INFORMATION

Via Vialarga 25 - 37050 San Pietro di Morubio (VR)
 sito web: <http://www.fomet.it>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 5

Business sectors: Fertilizers (organo-minerals, organic, soil improvers and growing media); Specialities fertilizers

CONTACTS

Enrico Cappellari
 e.cappellari@fomet.it
 +39 0456969004

fomet@fomet.it

DATASHEET ICONS



PRODUCTS



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Carbon footprint

Study of the impact of the carbon footprints of some core business products along their life cycle



Sinergy

Study of the metabolic effects of different combinations of matrices and extracts with high phytochemical potential



Organic substance

Study and valorisation of the company's core business organic substance and its effects on the soil and on the plants



Specificity

Development of products with specific action, targeted for effects at primary and/or secondary metabolism level



Sustainability

Project aimed at improving process and product sustainability, from the idea to the field



Yield

Study, improvement and development of processes with high production yield and reduced energy consumption, in particular from renewable sources



Biostimulants

Development of new biostimulants, mainly from plant sources, through processes that are capable of preserving bioactive molecules



Circular economy

Research aimed at the study and ennoblement of matrices deriving from different agri-food chains to obtain products with a fertilising and/or biostimulant action with high efficacy and efficiency



Microorganisms

Study of specific strains of microorganisms and their effect in agriculture



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Bologna
 - University of Brescia
 - University of Padua
 - University of Perugia
 - University of Verona
-

FLINT GROUP ITALIA S.p.A.

GENERAL INFORMATION

Via Margherita De Vizzi 51 - 20092 Cinisello Balsamo (MI)
 sito web: <http://www.flintgrp.com>

Operating offices:

Baranzate
 Baranzate

Caronno Pertusella
 Caronno Pertusella

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.50 %

Number of researchers: 10

Business sectors: Printing inks

CONTACTS

Paolo Talamelli
paolo.talamelli@flintgrp.com
 +39 029652439

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Printing

Products and services designed to support a circular economy in packaging (<https://www.flintgrp.com/en/sustainability/>). A key part of the support is the development and supply of inks and coatings that reduce the life cycle impact of inks and coatings used on packaging. Conversion of inks and coatings to sustainable raw materials. Inks that are designed for the circular economy - recyclability or composability. Customer collaboration projects that reduce their scope 1& 2 emissions. Solutions to improve our manufacturing and transport efficiencies. Focus on the use of sustainable raw materials where applicable. The Innovation to improve the circularity for flexible packaging are mainly focused on: barrier coatings for mono-material structures; deinking & PU-based ink recycling solutions; water-based inks for film & foil; biodegradable inks; Universal bases, high opacity whites, HQ printing inks



COLLABORATIONS WITH PUBLIC RESEARCH

- Albert-Ludwigs-Universität Freiburg
- University of Milan



FRATELLI ZUCCHINI S.P.A.

GENERAL INFORMATION

Via C. Colombo 6 - 44124 Ferrara (FE)
sito web: <https://www.zucchini.it>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY
Research expenditure (% of turnover):
Number of researchers: 5
Business sectors: Adhesives and sealants

CONTACTS

Stefano Trepin
stefanotrepin@zucchini.it
+39 0532782611

Enrico Trevisani
enricotrevisani@zucchini.it

DATASHEET ICONS

 PRODUCTS

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 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Products	Development of water-based sealants and adhesives	 	   
Sustainability	Substitution of hazardous raw materials.	 	   
Sustainable processes	Process optimisation to reduce waste and rework. Development of production processes with the aim of reducing energy consumption.	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- Tecnopole of the Università di Ferrara, Terra&Acqua Tech Laboratory
- University of Ferrara (Department of Chemical and Pharmaceutical Sciences)

GALA S.r.l. SB

GENERAL INFORMATION

Via A. Cicognani, 11/N - 47121 Forlì (FC)
sito web: <http://www.galacosmetici.com>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 4.00 %

Number of researchers: 8

Business sectors: Cosmetics; Detergents and related products; Soap

CONTACTS

Ilaria Mignani
mignani@galacosmetici.com
+39 0543781838

DATASHEET ICONS

 PRODUCTS

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 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainability

Research and development of biodegradable and environmentally friendly cosmetics. Integration of sustainability principles into the corporate growth strategy. The natural evolution of this choice is the open and transparent reporting of the economic, environmental and social sustainability performance, with the aim of having the first Corporate Sustainability Report within this year



Formulations

Use of natural, organic, fair trade raw materials, made by renewables or natural harvest. Attention to the origin: raw material doesn't come from rare species or endangered. Use of local raw material, whereas those from more distant countries are strictly embraced with fair trade project of small and local producer. Among natural raw materials, use of the more simple one, with a low synthetic intermediates and without toxic, dangerous reagents or made by chemical reactions with strong impact on the environment or made by genetic modifications. Research and development of concentrated or anhydrous products made by a small quantity of water, energy and pack.



Renewable materials

Recycled, biodegradable, or compostable and refillable pack. The pack must be free of toxic solvents and heavy metals and it has permitted to completely use the product inside



COLLABORATIONS WITH PUBLIC RESEARCH

- "Bocconi" University - Observatory Green Economy
- University of Bologna
- University of Ferrara



GRAFTONICA S.r.l.

GENERAL INFORMATION

Via Martiri Triestini 7 - 20148 Milano (MI)

sito web: <http://www.graftonica.it>

Operating offices:

Milano

Milano

DETAILED INFORMATION

Dimension: MICRO COMPANY

Research expenditure (% of turnover): 40.00 %

Number of researchers: 3

Business sectors: Advanced materials; Ceramic glaze, inorganic pigments, metal oxides; Compounds and auxiliaries for plastics, plasticizers and similar products; Cosmetics; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Inorganic base chemicals; Organic base chemicals; Paints and varnishes; Resins and thermoplastic systems; Resins and thermosetting systems

CONTACTS

Alberto Bianchi

alberto.bianchi@graftonica.it

+39 0264485119

Headquarter: Via Roberto Cozzi 55 - 20125 Milano (MI)

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Biodegradable plastics containing waste



Formulations

Creation of ad-hoc formulations in the field of polymers



Bioplastics

Study and research on biobased and biodegradable materials



3D printing

Design and formulation of new resins: thermoplastics (FDM) and thermosetting resins (SLA)



Nanomaterials

Design and manufacturing of nanomaterials in polymers and resins for applications: lighting, automotive, cosmetics, cultural heritage



COLLABORATIONS WITH PUBLIC RESEARCH

- "G. Ronzoni" Scientific Institute of Chemistry and Biochemistry
- Politecnico di Milano University (Polifab)
- University of Milano-Bicocca
- University of Pavia (Civil Engineering and Architecture Department)



GREEN HAS ITALIA S.p.A. (Greenhas Group)

GENERAL INFORMATION

Corso Alba 85/89 - 12043 Canale (CN)
sito web: <https://www.greenhasgroup.com/>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY
Research expenditure (% of turnover): 4.00 %
Number of researchers: 10
Business sectors: Specialities fertilizers

CONTACTS

Valeria Contartese
v.contartese@greenhasgroup.com
+39 017395433

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Resource efficiency

Research on Biostimulants to improve the availability of nutrients in the soil and their use by the plants (Nutrient Use Efficiency-NUE). Research on biostimulants to improve the optimization of the available water (Water Use Efficiency-WUE)



Climate change

Research on biostimulants to reduce yield loss caused by abiotic stress (drought, salt, light and thermal stress)



Circular economy

New extraction methods for food processing by-product valorization, designed to biostimulant production



Biodiversity

Selection and fermentation of Plant Growth Promoting Rhizobacteria (PGPR) to increase and preserve the soil biodiversity and fertility



COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Milano (Dipartimento di Fisica)
- University of Milan (Department of Biosciences)
- University of Turin (Department of Life Sciences and Systems Biology - Plant Physiology Unit and Microbiology Unit); Department of Agricultural, Forestry and Food Sciences)
- University of Wageningen (Plant Sciences Group), the Netherlands
- University of Ghent (Faculty of Bioscience Engineering-Department of Plant Production)

HALLSTAR ITALIA S.r.l.

GENERAL INFORMATION

Corso Magenta 82 - 20123 Milano
 sito web: <https://www.hallstar.com>

Operating offices:

Arcore (MB)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.80 %

Number of researchers: 11

Business sectors: Auxiliaries for detergents and surfactants; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Surfactants and raw materials for detergents

CONTACTS

Vincenzo Placa
vincenzo.placa@hallstar.com
 +39 0396180447

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Energy saving

Development of new processes with low energy-intensive and environmental impact aimed at the production of esters, half-formulated and formulated solutions



Upcycling

Upcycle of vegetable origin waste from food and textile industry to obtain raw materials and intermediates. Enhancement of food industry and sustainable agriculture by-products as new sources of raw materials for cosmetics



Circular economy

Raw materials for the cosmetics industry from renewable and sustainable sources.



Green chemistry

Development of new wasteless process and research and developments of new alternative catalyst systems.



COLLABORATIONS WITH PUBLIC RESEARCH

- University of L'Aquila
- University of Pavia
- University of Siena
- Université di Montpellier

IMA S.r.l.

GENERAL INFORMATION

Via Segré 23 – 27036 Mortara (PV)
sito web: <http://www.imadelta.com>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 5.00 %

Number of researchers: 4

Business sectors: Intermediates and specialty chemicals

CONTACTS

Greta Lanzarotti
greta.lanzarotti@imadelta.com
+39 0384297300

DATASHEET ICONS

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DESCRIPTION OF INDUSTRIAL RESEARCH

Solvent free

Formulation research and development with the aim of eliminate the use of solvents



Substitution

Formulation research and development with the aim of replacing substances dangerous for human health and the environment with others less dangerous



Bio content

Formulation research and development with the aim of replacing raw materials obtained from non-renewable sources with raw materials obtained from renewable sources



COLLABORATIONS WITH PUBLIC RESEARCH

INDENA S.p.A.

GENERAL INFORMATION

Viale Ortles 12 - 20139 Milano (MI)
sito web: <http://www.indena.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 10.00 %

Number of researchers: 77

Business sectors: Active and intermediate principles for the pharmaceutical industry; Ingredients for food supplements and functional food; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Medicinal products for veterinary use

CONTACTS

Francesca De Rensis
francesca.derensis@indena.com
+ 39 02574961

DATASHEET ICONS



PRODUCTS



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SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Health

Innovative Product Research: New nutraceutical active ingredients of botanical origin.
Incremental product research: New areas of application for nutraceutical active ingredients of botanical origin. Process research: New methods for the production of active pharmaceutical and nutraceutical ingredients.



COLLABORATIONS WITH PUBLIC RESEARCH

- CREA, Trento
- Oxford University, UK
- University of Florida
- University of l'Aquila
- University of Bologna
- University of Camerino
- University of Milan
- University of Milan Bicocca
- University of Naples - Federico II
- University of Padua
- University of Perugia
- University of Turin



INDUSTRIE CHIMICHE FORESTALI S.p.A.

GENERAL INFORMATION

Via Kennedy 75 - 20010 Marcallo con Casone (MI)
sito web: <http://www.forestali.it>

Operating offices:

Robecchetto con Induno (MI)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 2.00 %

Number of researchers: 6

Business sectors: Adhesives and sealants; Fibers for industrial use

CONTACTS

Marcello Taglietti
m.taglietti@forestali.it
+39 02972141

Vincenzo Farina
v.farina@forestali.it
+39 02972141

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Pollution reduction

VOC free water-based adhesive development for the industrial and civil insulation sector



Biodegradability

Development of biodegradable, solventless adhesive for Flexible Packaging applications



Biodegradability

Research and application studies to extend the range of recycled polymers for use in the production of fabrics



Recycling

Completion of the GRS (Global Recycle Standard) certification process



Wastewater	Study for purification and reuse of wastewater and exhausted solvents	 	   
Pollution reduction	Formulated study and application process of thermoplastic polyurethane adhesive for footwear and leather goods applied through a robotic line	 	   
CRM	Development of a new line of water-based adhesive products for the VOC free automotive sector	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - ISMAC, Milano
- INNOVHUB - Stazioni Sperimentali per l'Industria

INNOVHUB - STAZIONI SPERIMENTALI PER L'INDUSTRIA S.r.l.

GENERAL INFORMATION

Via Meravigli 9/b - 20123 Milano (MI)

sito web: <http://www.innovhub-ssi.it>

Operating offices:

Milano

Milano

San Donato Milanese

San Donato Milanese

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 10.00 %

Number of researchers: 25

Business sectors: Advanced materials; Aerosol products; Auxiliaries for detergents and surfactants; Cosmetics; Detergents and related products; Liquefied gas; Lubricants; Organic pigments and dyestuffs; Paints and varnishes; Products intended for use in animal feed; Soap; Surfactants and raw materials for detergents

CONTACTS

Chiara Zigliani

chiara.zigliani@mi.camcom.it

+39 0285155245

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Textiles	Determination and minimization of environmental impact by application of Life Cycle Assessment, Carbon Footprint studies or Ecodesign. Study of new solutions for reducing the use of water in the textile sector. Exploitation of silk processing wastes. Supporting activity for the development of multifunctional textiles	 	   
Packaging	Life Cycle Assessment and Carbon Footprint studies; Ecodesign. Study of new sustainable packaging solutions, particularly for food contact applications.	 	   
Processes	Study of new processes with low environmental impact, in particular for the textile, detergents and paint sectors. Improvement of the safety of chemical processes. Evaluation of the release of microplastics in processes and products.	 	   
Circular economy	Exploitation of wastes from industrial processes, particularly in the paper, agro-industrial and silk sectors.	 	   
Food safety	Analytical studies of food contaminants originating from technological processes or farming treatments. Development of models for the determination and control of oxidation stability (Shelf life). Testing of migration of substances from materials in contact with food (MOCA)	 	   

Energy

Evaluation and study of new alternative fuels. Evaluation of the emission factors of air pollutants of fossil fuels and biofuels from both stationary and mobile sources. Development of original procedures of sampling and test of non-conventional pollutants. Research and experimental activity for investigating the influence of such factors as: properties of traditional and innovative fuels including biofuels; use of anti-pollution devices and fuel additives; motor vehicle traffic on air quality and climate change.



COLLABORATIONS WITH PUBLIC RESEARCH

Innovhub SSI collaborates internationally with universities, research centers, public and private laboratories, companies, associations and public administrations.

INTERCOS S.p.A.

GENERAL INFORMATION

P.zza Armando Diaz 1 - 20100 Milano
 sito web: <http://www.intercos.com>

Operating offices:

Monza
 Monza

Napoli
 Napoli

Dovera
 Dovera

Agrate Brianza
 Agrate Brianza

Olgiate Comasco
 Olgiate Comasco

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 5.00 %

Number of researchers: 125

Business sectors: Cosmetics; Detergents and related products; Medical surgery; disinfectants

CONTACTS

sustainability@intercos.it
 +39 03965521

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Digitalization

The product digitalization process, launched in 2021, gave rise to the Digital Beauty Atelier in 2022, consisting of the following interrelated initiatives: -Digital color studio: a major innovation in the cosmetic field as completely digitizing colors, both for matte and pearlescent products. Thanks to this technology, all of the colors developed over the years will be captured and reproduced with realistic colorimetric rendering so that customers can be presented with all the color proofs they need, without actually having to produce the cosmetic. This technology, allowing to undertake projects in digital form, contributes to a reduction in the use of raw materials and, as not having to send the products physically, also in the shipment-related emissions and materials. -Digital color room: library of countertypes and bulk products developed over the past three years. It is widely used to present products to customers while avoiding the counter-typing process. This library reduces the use of raw materials, packaging, and the need to ship physical products. -Digital Beauty Store: a repository of products presented during beauty events, consisting of a user-friendly portal that allows customers to select and display products.



Substitution

The Group invests in continuous innovation of the formulations already in place to improve sustainability: for example, commitment to replacing all the ingredients originating from palm oil with those "RSPO compliant"; searching for preservative boosters to decrease the amount of traditional biocides; research focusing on the use of reagents of plant origin, whether they are derived from ad-hoc products or by-products of the food industry, in order to overcome the use of traditional reagents



Product format	With regards to leave-on products (skincare) and rinse-off products (hair care, personal care & fragrances), one of the areas of innovation on which the Group is working concerns the product format. In particular, the research regards the stick format since it allows to reduce water consumption and due to its small size, optimizes transportation, whilst limiting related greenhouse gas emissions. In addition, this format affords optimal application, thus extending the life of the product	 
Energy efficiency	The contribution to the reduction of greenhouse gas emissions focuses on improving the energy efficiency of production plants, with particular attention to the optimization of the bulk mixing process and the energy consumption related to air conditioning. In our Italian manufacturing plants cogeneration and trigeneration systems have been installed. They allow to produce electricity, heat and refrigeration (in the second case) from a single energy carrier, natural gas	 
Processes	Commitment in the continuous research for the use of production processes with reduced environmental impact. One of the lines of research concerns the optimization of the process of production or processing of certain raw materials to make it more sustainable. An example is represented by the family of coated powders, for which research has made it possible to define a production process that does not involve the use of solvents, and therefore ovens for drying, and without further treatment. This reduces process times, lowers operating temperatures, and eliminates the emission of solvent vapor into the environment.	 
Circular economy	Contribution to the CirCo (Circular Coffee) program, involving different academic and industrial research groups and aims at creating a model that embraces the circular economy approach. The program is focused on the valorization of the coffee silverskin, a thin tegument that directly covers the coffee seed and usually considered a waste of the roasting process. In the cosmetic field, it is a potential candidate to replace synthetic chemicals as active ingredients due to their high antioxidant potential and to the presence of a small amount of fat content with a particular chemical-physical composition. In addition, Intercos invests in in-house raw materials production. This line of research focuses on the use of reagents of plant origin, whether they are derived from ad-hoc products or by-products of the food industry, in order to overcome the use of traditional reagents. By-products are selected on sustainability criteria, with a preference for agrifood sector by-products, generated in Italy, to build a lifecycle of new cosmetic ingredients that leverages a short supply chain and adds additional value to products of excellence from our country's food industry	 
In vitro cultures	Another research line is that of active ingredients. The Group's high level of innovation on this front has been achieved thanks to the great expertise developed over the years by the Vitalab laboratory in relation to green biotechnology, in vitro cultivation of microalgae, and active ingredients from recovery processes. In 2022, the Group's laboratory Vitalab successfully concluded a new project, Vita Gly-Jasmine, derived from the in-vitro cultivation of Jasminum sambac cells, from the most valuable jasmine varietal. Plant cell culture helps meet ever-growing demand for natural bioactive components without harming the environment, whilst preserving botanical diversity and reducing water and energy consumption, and ensuring safe laboratory cultivation based on scrupulous quality principles. Cell cultivation and process scaling-up ensure continuous supply of ingredients, regardless of geographical area, seasonal variations, or plant reproductive cycle. In addition, both cultivation and extraction processes occur at Vitalab's laboratory, greatly reducing supply chain length and, therefore, alleviating ecological damage from transportation, whilst reducing price fluctuations of ingredients	 
Clean products	Particular relevance to CLEAN formulations: - "Good for You" - formulations with maximum possible use of vegetal-derived ingredients, avoiding controversial ingredients with an eco-conceived approach. Short ingredient list "less is more"; - "Good for Life" - formulations with ingredients with a limited social and environmental impact, such as RSPO certified, Responsible Mica Certified, % Water Reduction, Cruelty-free; - "Good for Planet" - formulations with ingredients, sourced locally, which preserve biodiversity, promoting the use of recycled or bio-based and bio-degradable ingredients (for example, the waste from the food chain or bio-plastics); reducing water consumption; using packaging as recycled / recyclable and biodegradable as possible	 

COLLABORATIONS WITH PUBLIC RESEARCH

Intercos has established many collaborations with public and private research institutes, both Italian and international. For example:

- CNR-ISTM
- INSTM
- Maastricht University (Neuroscience faculty and medical center)
- University of Milan (Pharmaceutical Science Department)
- University of Milano-Bicocca (Materials Science Department; Biotechnology and Biosciences Department)

Since 2021, Intercos has opened a shared laboratory, called “JointLab”, with the University of Milan-Bicocca and located in the U28 building located in Monza. The laboratory is divided into 4 areas for different research lines and has highly qualified and dedicated graduated staff.

Intercos takes part to national and international calls to obtain research funds. As example, Cariplo calls, Netherland regional calls and European ETN (European Training Network)/ Horizon 2020 calls with:

- Aachen University RWTH (Division of Materials Science and Engineering)
 - CNR-ISTM
 - University of Milan (Pharmaceutical Science Department)
 - Wageningen University
-



ISTITUTO GANASSINI S.p.A. DI RICERCHE BIOCHIMICHE (Società Benefit)

GENERAL INFORMATION

Via P. Gaggia 16 - 20139 Milano (MI)
sito web: <http://www.ganassinicorporate.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover):

Number of researchers: 10

Business sectors: Cosmetics

CONTACTS

Domenico Ganassini Di Camerati
istituto@ganassini.it
+39 025357041

g.tomasi@ganassini.it

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Cosmetic

Research and development of products with a high standard of sustainability and innovation (biodegradability, formulations, packaging). Modification and research of low environmental impact processes to obtain biodegradable and environmentally friendly products



COLLABORATIONS WITH PUBLIC RESEARCH

Collaboration with public and private research, in Europe and worldwide. Collaboration with slow food principals to restore the right value to food, respecting those who produce, in harmony with environment and ecosystems.

ITALMATCH CHEMICALS S.p.A.

GENERAL INFORMATION

via E. Vismara 114 - 20044 Arese (MI)
sito web: <http://www.italmatch.com>

Operating offices:

Genova (GE), Qualiano (NA), Spoleto (PG)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.50 %

Number of researchers: 32

Business sectors: Active and intermediate principles for the pharmaceutical industry; Advanced materials; Auxiliaries for detergents and surfactants; Cleaning and maintenance products - biocides; Compounds and auxiliaries for plastics, plasticizers and similar products; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Inorganic base chemicals; Intermediates and specialty chemicals; Lubricants; Surfactants and raw materials for detergents

CONTACTS

Norberto Gatti
n.gatti@italmatch.com
+39 0293525266

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

 PROCESSES

 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Lubricants 2	Use of raw materials and monomers for the production of additives used in lubrication, water treatment/detergency	 	   
Water saving	Industrial process development with "water use reduction or "waterless"	 	   
Batteries	Research of innovative raw materials for the production of advanced components for lithium ion cells	 	   
REACH	Incremental research of chemical products via the elimination of SVHC according to REACH	 	   
Phosphorus	Research for production of Elemental Phosphorus from wastes, also of urban origin, according to the criteria of a circular economy	 	   
Batteries	Development and application of new special additives for the recovery and separation of Nickel, Cobalt and other elements of concern within the rare earth group from recycle streams	 	   
Fine chemistry	Use of industrial byproducts as internal raw materials for the production of specialty chemicals	 	   
Phosphorus	Development of a new thermochemical process for elemental phosphorus (P4) production from sewage waste, and start up of a pilot plant	 	   

ESG	Process technology studies to contribute to decrease emissions in the atmosphere of chemical substances		   
Water	Research on new biodegradable additives for water treatment/detergency		   
ESG	Reduction of the environmental impact of current chemical processes according to the criteria of the Circular Economy		   
Lubricants	Research of new lubricant base stocks from renewal sources		   

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR-ISMAL
- SSC
- University of Perugia
- University of Graz
- University of Stuttgart

ITELYUM REGENERATION S.p.A.

GENERAL INFORMATION

Via Tavernelle 19 - 26854 Pieve Fissiraga (LO)
 sito web: <http://www.italyum-regeneration.com>

Operating offices:

Frosinone

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.49 %

Number of researchers: 12

Business sectors: Auxiliaries for detergents and surfactants; Ceramic glaze, inorganic pigments, metal oxides; Chemicals from biomasses; Compounds and auxiliaries for plastics, plasticizers and similar products; Detergents and related products; Environmental services; Financial, services, engineering and research companies; Inorganic base chemicals; Intermediates and specialty chemicals; Lubricants; Organic base chemicals; Organic pigments and dyestuffs; Printing inks; Soap; Surfactants and raw materials for detergents

CONTACTS

Francesco Gallo
francesco.gallo@italyum.com
 +39 03712503242

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Pollution reduction	Study for improving process energy efficiency through the recovery of low-pressure condensate		   
Pollution reduction	Developement of artificial intelligence algorithms for big data analytics taken from the dcs and kpi optimization with the digital twin developement for the plant in Pieve Fissiraga (LO) for budgeting, forecasting, operational training, and operational development of the processes		   
Pollution reduction	Development of predictive algorithms related to a new furnace integrated into the TDA distillation column of the Revivoil process		   
Pollution reduction	Research and developement of the innovative plasbreaker process for the production of high-performance lubricant bases and hydrogen from plasmix, including a technology for the recovery of hydrogen from hydrogen sulphide		   
Pollution reduction	Development of a new process for the hydrofinishing section of Ceccano (FR) plant, with the addition of a third reactor, substitution of the hydrogen recirculation compressor, addition of a stripping section of the hydrofinished base oil, gas treating with amines, upgrading of the furnace feed preheating system with the addition of a new hot oil heat exchanger		   

Pollution reduction	Study, design, and experimentation activities for the introduction of digital technological innovations aimed at developing a new process for budgeting, forecasting, and operational development, through the use of artificial intelligence and a process simulator	 
Pollution reduction	Study of new business processes for the preservation of water resources through the reuse of process water, purified wastewater, and containment barrier water (DRY FACTORY)	 
Pollution reduction	Research and development activity of an innovative polyfunctional hydrometallurgic process for the production of rare earths oxides and oxalates from weee, such as photovoltaic panels, electronic boards, permanent magnets, batteries	 
Pollution reduction	Development of an innovative process in the field of new green deal biodiesel to obtain biolubricants, biofuels, and biosolvents from the bio-fraction of mineral used oil and used cooking oil (UCO/RUCO)	 
Pollution reduction	Research and development activities aimed at the development of the first industrial-scale plant for the chemical recycling of WEEE and the recovery of rare earth element	 

COLLABORATIONS WITH PUBLIC RESEARCH

- "Federico II" University of Naples
- Politecnico di Milano University
- University of Marche



KIALAB S.r.l.

GENERAL INFORMATION

Via Lepetit 34 - 21040 Gerezano (VA)

sito web: <http://www.kialab.it>

DETAILED INFORMATION

Dimension: MICRO COMPANY

Research expenditure (% of turnover): 15.00 %

Number of researchers: 5

Business sectors: Auxiliaries for detergents and surfactants; Biotechnologies; Chemicals from biomasses; Cosmetics; Detergents and related products; Financial, services, engineering and research companies; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Surfactants and raw materials for detergents

CONTACTS

Luigi Pozza

info@kialab.it

+39 0296474339 - +39 0296474997

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Innovative Research: Valorisation of biomass from the agri-food and fishing industry in cosmetics and detergents, in collaboration with university and private companies with a view to the circular economy. Research and development and marketing of functional active ingredients for cosmetics industry



Digitalization

Digital research: digital transformation of the company in order to improve support and divulgation in the cosmetic field



Biodegradability

Incremental Research: Formulation and benchmarking studies regarding cosmetic ingredients and ingredients for the detergent industry



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR of Milan
- University of Bologna
- University of Milan
- University of Palermo
- University of Pavia
- University of Perugia

L'OREAL ITALIA S.p.A. (L'Oréal Group)

GENERAL INFORMATION

Via Primaticcio 155 - 20147 Milano (MI)
sito web: <https://www.loreal.com/it-it/italy/>

Operating offices:

Settimo Torinese
Settimo Torinese

Villanterio
Villanterio

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 4000

Business sectors: Cosmetics; Flavors and fragrances; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry

CONTACTS

Filippo De Caterina
filippo.decaterina@loreal.com

R&D data are referred to the entire Group.

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Beauty tech

L'Oréal designs beauty tech solutions to make people's lives easier. It offers virtual try-on, analysis and personalization services that make beauty more accessible and tailored for everyone



CO2 reduction

By 2025, all Group sites will become "carbon neutral" by improving energy efficiency and using 100% renewable energy. In addition, by 2030 the goal is to reduce by 50% compared to 2016 the emissions of greenhouse gases related to the transportation of products, calculated on average and per finished product



Sustainability

By 2030, 95% of our ingredients will be bio-based, derived from abundant minerals or circular processes



Innovation

Research to develop new biodegradable, eco-designed, sustainable products throughout the life cycle. By 2030, 100% of products will be eco-designed (thanks to SPOT, which enables comprehensive analysis of the impacts of product formulas and packaging)



Processes

New processes with low environmental impact



Animal welfare

L'Oréal Groupe tests its products using reconstructed human skin and predictive evaluation tools that do not involve animals, such as molecular modeling, artificial intelligence, and imaging techniques. In our laboratories around the world, scientists continue to pioneer new methods and technologies that do not involve animal testing



Circular economy

By 2025, 100% of our plastic packaging will be refillable, reusable, recyclable or compostable. These measures will reduce significantly the use of fossil fuels and promote the development of circular economy



Water saving

By 2030, 100% of our industrial water will be recycled and reused in a loop



COLLABORATIONS WITH PUBLIC RESEARCH

Different collaborations with public and private research institutes across Europe and worldwide.



Lamberti



LAMBERTI S.p.A.

GENERAL INFORMATION

Via Marsala 38/D - 21013 Gallarate (VA)

sito web: <http://www.lamberti.com>

Operating offices:

Nerviano

Nerviano

Viguzzolo

Viguzzolo

Fiorano Modenese

Fiorano Modenese

Zanica

Zanica

Albizzate

Albizzate

Trissino

Trissino

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 4.10 %

Number of researchers: 137

Business sectors: Auxiliaries for detergents and surfactants; Food additives and processing aids;

Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals; Starches and derivatives;

Surfactants and raw materials for detergents

CONTACTS

Laura De Michele

laura.demichela@lamberti.com

+39 0331715436

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Renewable sources

Research for the replacement of products deriving from raw materials of fossil origin with raw materials and intermediates from renewable sources



Polyurethanes

Research, development and industrialization of polyurethanes in aqueous dispersion as functional additives with film-forming properties, modifiers of touch, appearance and surface functional properties of substrates, rheological modifiers, dispersants for the leather, synthetic materials, wood, metal and film industries plastics, paper, construction, architectural coating, textiles, digital inks



Htdroxyapatite

Research, development and industrialization of hydroxyapatite-based materials for the cosmetics and personal care industry



Surfactants	Research, development and industrialization of compounds with surfactant functionality and interfacial action through alkoxylation, amidation esterification, glycosidation for the manufacturing industry and the production of industrial formulations and for the consumer market including agrochemical, polymerization industries, Oil & Gas, cosmetics, detergents	 
Fat derivatives	Research, development and industrialization of fat derivatives with interfacial action through alkoxylation, amidation esterification, of rheological modifiers, dispersants and suspenders for the manufacturing industry and the production of industrial formulations and for the consumer market including agrochemical, polymerization industries, Oil & Gas, cosmetics, detergents, leather, textiles	 
Natural polymers	Research, development and industrialization of products based on physical and chemical derivatives of cellulose, starches and hydrocolloids (guar, tamarind) as functional additives with rheological modifier, suspending, gelling, water retaining, conditioning and film-forming properties for industries paper, ceramics, construction, civil engineering, mining and tunnelling, architectural coating, cosmetics, detergents, oil drilling, agrochemicals, textiles and digital ink	 
Formulations	Research, development and industrialization of complex formulations for industrial use	 
Acrylic polymers	Research, development and industrialization of acrylic polymers in solution and emulsion as functional additives with rheological modifier, suspending, filming and dispersing properties for the paper, ceramic, construction, architectural coating, cosmetics, detergents, oil drilling, agrochemical, textile, digital inks, leather, synthetic materials, wood, metal, plastic films	 
Environmental impact	Minimization of the environmental impact of the processes practiced through the reduction of water and energy consumption	 
Circular economy	Design of new products starting from second generation raw materials	 

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR – ISMAC, Milan
- CNR - ISTE, Faenza
- "Federico II" University of Naples
- Politecnico di Milano University
- University of Genoa
- University of Milan
- University of Milano - Bicocca
- University of Modena and Reggio Emilia
- University of Padua
- University of Parma

ADDITIONAL INFORMATION

LANXESS SOLUTIONS ITALY S.r.l.

GENERAL INFORMATION

Via Pico della Mirandola 8 - 04013 Latina (LT)
sito web: <http://www.lanxess.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.72 %

Number of researchers: 7

Business sectors: Intermediates and specialty chemicals; Resins and thermosetting systems

CONTACTS

Maurizio Belloli
maurizio.belloli@lanxess.com
+39 07736151

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Ecological transition

Development of high performance product in the market sector of coatings, adhesives, sealants and elastomers, with reduced environmental impact and superior industrial hygiene. Development of formulations and application studies on existing and new products, in the areas of interest. Development of high performance products based upon vegetable originated polyols and related application studios, in the expanded field of coatings adhesives, sealants and elastomers



LOXEAL S.r.l.

GENERAL INFORMATION

Via Marconato 2 - 20031 Cesano Maderno (MB)
 sito web: <https://www.loxeal.com>

Operating offices:

Misinto (MB)

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 2.50 %

Number of researchers: 9

Business sectors: Adhesives and sealants; Resins and thermosetting systems

CONTACTS

Giorgio Zaffaroni
giorgio.zaffaroni@loxeal.com
 +39 03625293420

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Fuel cells	Creation of adhesives and Sealants to assemble Hydrogen Fuel Cells	 	   
Green adhesives	Improvement of H&S profile of reactive adhesives. Development of Adhesives and sealants with relevant content of renewable carbon	 	   
Sigillanti idrogeno	Creation of Adhesives and Sealants to be used in piping and heating devices using hydrogen fuel	 	   
UV adhesives	Synthesis of acrylic and epoxy Oligomers for UV activated cure	 	   
Battery pack	Development of thermally conductive but electrically insulating materials	 	   

Maflon S.p.A.

GENERAL INFORMATION

Via Soave 7 - 20135 Milano
sito web: <https://www.maflon.com/>

Operating offices:

Castelli Calepio (BG)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.50 %

Number of researchers: 7

Business sectors: Auxiliaries for detergents and surfactants; Compounds and auxiliaries for plastics, plasticizers and similar products; Intermediates and specialty chemicals; Lubricants; Paints and varnishes; Printing inks; Surfactants and raw materials for detergents

CONTACTS

maflon@maflon.com
+39 0354494400

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Stone	Research and development of hydro/oil repellent polymers for stone treatment	 	   
Yacht	Design, production and structural and functional characterization of innovative polymeric products for use in antifouling coatings with increased smoothness	 	   
Leather	The synthesis of a polyurethane in solution/dispersion/emulsion including use as a water/oil-repellent, stain-resistant and dirt-repellent agent for leather. The project concerns a non-fluorinated polyurethane and a polycarbodimide in a solution/dispersion/emulsion and a process for its synthesis and use as a cross-linking agent	 	   
Coating	Design, production and characterization of innovative wetting and rheological agents for use as additives in coating formulations (cars, paints, wood varnishes)	 	   
Lubricants	Design, production and characterization of innovative lubricants for use as lubricating agents for winter sports	 	   
Textiles	Research and development activities on new acrylic polymers and new synthesis processes, with the aim of making treated fabrics water and oil repellent and resistant to dirt stains	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- Fraunhofer Institute
 - Politecnico di Milano
 - University of Florence
 - University of Padua
 - University of Pisa
-

MAPEI S.p.A.

GENERAL INFORMATION

Via Cafiero 22 - 20158 Milano (MI)
sito web: <http://www.mapei.com>

Operating offices:

Robbiano di Mediglia (MI)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 4.00 %

Number of researchers: 180

Business sectors: Adhesives and sealants; Advanced materials; Paints and varnishes

CONTACTS

Marco Squinzi
marco_squinzi@mapei.it
+39 0237673702

DATASHEET ICONS

 PRODUCTS

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 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

CO2 reduction

Mapei's solutions include an integrated approach known as the CUBE System, which attempts to assist the concrete sector in maintaining high standards while lowering climate effect through various phases: superplasticizers admixtures for improving the workability of alternative cements (for example: CEM III, CEM IV and CEM V); strength enhancers for new cements with reduced clinker content; new cement additives which allow to reduce the energy consumption involved with the grinding process. These new "low clinker" cements have higher mechanical resistance and workability, making them more suitable for modern mix-design; real-time monitoring and control of concrete quality through specific hardware and software located at critical points of the production chain



Company circularity

Pilot project of Federchimica-AVISA, Certiquality and ERGO Sant'Anna for the creation of a tool that provides an overall indicator of company circularity



CO2 offset

Mapei is committed to lowering greenhouse gas emissions from their products by working on new formulations with lower environmental impact. For the part that cannot be avoided, Mapei is committed to researching sustainability projects to offset the residual CO2 emissions. The Group has purchased certified carbon credit to offset the total CO2 emission of the products for the new Zero line. The total CO2 emissions measured throughout the entire life cycle by the LCA methodology have been verified and certified through the EPD (Environmental Product Declaration)



Recycled material

Replacement in the packaging of at least 50% of virgin plastic with secondary raw material certified with PSV (Second Life Plastic)



Circular economy

Supply chain project that encourages the collection of multiply bags at the end of life; these bags can be disposed in designated locations placed in DIY members of REC Consortium (Recupero Edilizia Circolare) , allowing them to be recycled



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - DSCTM
 - "Federico II" University of Naples
 - Sant'Anna Institute, Pisa
 - Politecnico di Milano University
 - Politecnico di Torino University
 - University of Bologna
 - University of Brescia
 - University of Genova
 - University of l'Aquila
 - University of Milan
 - University of Padua
-



MATRICA S.p.A.

GENERAL INFORMATION

Zona Industriale La Marinella - 07046 Porto Torres (SS)

sito web: <http://www.matrica.it>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 4.80 %

Number of researchers: 16

Business sectors: Active and intermediate principles for the pharmaceutical industry; Compounds and auxiliaries for plastics, plasticizers and similar products; Crop protection products; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Lubricants; Products intended for use in animal feed

CONTACTS

info@matrica.it

+39 079509956

Company subject to the management and coordination of Eni S.p.A.

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Catalysts	Development of new biorefinery processes with low environmental impact aimed at recovering reaction catalysts and minimizing waste stream	 	   
Pelargonic acid	Development of a new biorefinery process with low environmental impact aimed at finishing pelargonic acid, to achieve very high purity and low content of unsaturated molecules	 	   
Phytosanitary	Development of new molecules and formulation, from renewable sources, aimed at protecting agricultural crops	 	   
Rubber and plastic additives	Development of new biochemicals with a low carbon footprint, obtained from the esterification reaction of plant streams, for applications in the rubber and plastic industry	 	   
Glycerol	Development of new biorefinery processes with low environmental impact aimed at finishing the glycerine stream leaving the process	 	   
Bioplastics	Development of new molecules, with low carbon impact, for active application in the synthesis of bioplastics	 	   
C9 acids	Development of new biorefinery processes with low environmental impact aimed at the production of mono- and dicarboxylic acids and esters obtained from the transformation of vegetable oils	 	   
Cosmetic	Development of new additives and/or excipients, obtained by esterification of our main acids with selected alcohols	 	   

Lubricants

Development of new biochemicals, with low carbon footprint, obtained by esterification of our production acids, with alcohols and polyalcohols, usable in the field of lubrication



Animal feed

Study of new additives that can be used in the feed sector, obtained by esterification of the C5-C9 fat acid stream and pelargonic acid with trialcohols



MAYER BRAUN S.r.l.

GENERAL INFORMATION

Via Brigata Marche, 129 - 31030 Carbonera (TV)
sito web: <https://www.mayerbraun.com>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 10.00 %

Number of researchers: 2

Business sectors: Aerosol products; Animal healthcare products; Cleaning and maintenance products - biocides; Crop protection products; Detergents and related products; Environmental services; Medical surgery: disinfectants; Medicinal products for veterinary use; Products intended for use in animal feed; Surfactants and raw materials for detergents

CONTACTS

Sara Conte
sara.conte@mayerbraun.com
+39 0422445455

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

New products	Searches on bedbugs, bed bugs, silverfish, mosquitoes, ants, mice, spiders, pollen mite, etc.	 	   
Trappole per formiche	Research for a product with active ingredient Imidacloprid, development of the chosen project	 	   
Products	Search for new private label products that can be included in the catalog, for example: to the active ingredient Colecalciferol, phytosanitary rodenticides, Diatom Earths, etc.	 	   
Spray cans	Research and improve cylinder performance by changing valves, regulators, pressure modifications	 	   
Antilarval products	Research of tablets and antilarval block for ecological control of mosquito life cycle, development of selected project	 	   
Slugicide	Research of a Ferric Phosphate phytosanitary, development of the chosen project	 	   
Ecological disabituant	Research of a new ecological line for reptiles, mosquitoes, mice, pigeons, cats dogs, etc., development of the chosen project	 	   



METLAC GROUP

GENERAL INFORMATION

S.S. 35 Bis dei Giovi 53 - 15062 Bosco Marengo (AL)
 sito web: <https://www.metlac.com/>

Operating offices:

Alessandria (AL), Salerno (SA)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.50 %

Number of researchers: 23

Business sectors: Paints and varnishes; Printing inks

CONTACTS

Alessandro Pistone
alessandro_pistone@metlac.com
 +39 0131291200

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Formulations	Development of formulations containing raw materials from renewable sources	 	   
Formulations	Optimization of manufacturing and storage facilities through automation and high efficiency solutions	 	   
SSbD	Development of waterbased coatings with a reduced content of volatile substances and crosslinked by UV radiation	 	   
SSbD	Development and implementation of systems for the reduction and the removing of personnel exposure to hazardous substances, of control systems to reduce energy consumption, minimize and eliminate the production waste	 	   
SSbD	Optimization of internal and customers' processes by reducing volatile organic substances and process temperatures	 	   
SSbD	Development of technologies applied to coatings in order to reduce their hazard classification and improve sustainability through the introduction of new formulations and continuous product updating	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- University of Piemonte Orientale
-

NIPPON GASES ITALIA Group

GENERAL INFORMATION

Via B. Crespi 19 - 20159 Milano (MI)

sito web: <https://nippongases.com/it-it/>

Operating offices:

Verrès (AO), Novara, Chivasso (TO), Settimo T.se (TO), Alessandria, Novi Ligure (AL), Bagnatica (BG), S.Ambrogio Valpolicella (VR), Brugine (PD), Parma, Ferrara, Ravenna, Empoli (FI), Sesto Fiorentino (FI),

Castelnuovo Berardenga (SI), Rapolano (SI), Perugia, Terni, Pescara, Chieti, San Salvo (CH), Anagni (FR), Pontinia (LT), Caserta, Melito (NA), Napoli, Modugno (BA), Brindisi, Lamezia Terme (CZ), Reggio Calabria, Messina, Catania

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.00 %

Number of researchers:

Business sectors: Active and intermediate principles for the pharmaceutical industry; Aerosol products; Auxiliaries for detergents and surfactants; Biotechnologies; Chemicals from biomasses; Compounds and auxiliaries for plastics, plasticizers and similar products; Detergents and related products; Environmental services; Flavors and fragrances; Food additives and processing aids; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals; Liquefied gas; Lubricants; Medical gases; Medical surgery: disinfectants; Soap; Surfactants and raw materials for detergents; Technical and special gases

CONTACTS

Emanuele Bonomolo

emanuele.bonomolo@nippongases.com

+39 3485137110

DATASHEET ICONS



PRODUCTS



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THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Hydrogen burners

Use of H₂ in combustion processes as an alternative to CH₄



Water treatment

Removal of nitrogen, reduction of organic load and micropollutants, eliminating the problem of aerosols and odors



Heat treatment

Reduction of consumption on production plants with thermal processes



Vertical farming

Use of CO₂ for the rapid and controlled growth of various plant species



Metal fabrication

Gas mixtures development in order to improve welding and thermal cutting processes



Food

Gas mixtures development in order to improve the product shelf life



COLLABORATIONS WITH PUBLIC RESEARCH

Nippon Gases supports research in Nanoscience together with the NEST Laboratory of the Scuola Normale Superiore of Pisa, promoting and recognizing the activity of young Italian researchers under 35.

NOVAMONT S.p.A.

GENERAL INFORMATION

Via Fauser 8 - 28100 Novara (NO)
sito web: <http://www.novamont.com>

Operating offices:

Terni
Terni

Piana di Monte Verna
Piana di Monte Verna

Bottrighe
Bottrighe

Patrica
Patrica

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.50 %

Number of researchers: 114

Business sectors: Advanced materials; Biotechnologies; Chemicals from biomasses; Crop protection products; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals

CONTACTS

Giulia Gregori
giulia.gregori@novamont.com
+39 0321699611

DATASHEET ICONS

 PRODUCTS

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 TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Research and development for the valorization of waste and by-products into new bioproducts



Sustainable agriculture

Study of new dryland crops, development of new agronomic techniques, application of low impact chemical processes for obtaining biomaterials and biochemicals (bioplastics, biolubricants, chemical intermediates, etc.). Development is guided by a logic of integrated biorefinery with an approach based on cascading use of biomass and resource efficiency.



Bioeconomy

Development of innovative biodegradable plastic materials from renewable origin, to be intended for applications in which biodegradability and compostability-as well as chemical recyclability, mechanical and in the paper stream - represent a real systemic benefit. Development of new biochemicals and low-impact bioproducts from renewable sources.



Biotechnology

New enzymes and microorganisms for obtaining biochemicals



Integrated biorefinery

Development of new integrated biorefinery processes based on cascading use of biomass, resource efficiency, high energy efficiency, with the aim of decarbonizing the economy



COLLABORATIONS WITH PUBLIC RESEARCH

Novamont collaborates with a large number of Italian and foreign Universities and public and private Research bodies, operating in the following fields: Chemical Sciences, Biotechnologies, Agronomics, Material Sciences, Chemical and Process Engineering, Environmental Impact, Economic and Social Sciences.

NUOVA SOLMINE S.p.A.

GENERAL INFORMATION

Località Casone - 58020 Scarlino (GR)

sito web: <http://www.solmine.it>

Operating offices:

Serravalle Scrivia

Serravalle Scrivia

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.00 %

Number of researchers:

Business sectors: Inorganic base chemicals

CONTACTS

Gabriele Pazzagli

g.pazzagli@solmine.it

Juri Pagni

+39 056670111

j.pagni@solmine.it

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Water saving

Constant monitoring of its discharges and preferring, where possible, the use of water recovery and reuse systems



Energy efficiency

Development of new energy-saving processes



COLLABORATIONS WITH PUBLIC RESEARCH

- Q.U.I.N.N. of Pisa
- University of California, San Land, in a study of the university's investigation, and the University of California, San Cheat on the European University and the United States Magona Technology Pole Consortium)
- University of Florence (Departments of: Chemistry; Biology of agricultural plants)
- University of Siena (Department of Biotechnology, Chemistry and Pharmacy)
- University of Verona

OMNISYST S.p.A.

GENERAL INFORMATION

C.so Vittorio Emanuele II 1 - 20122 Milano

sito web: <http://www.omnisyst.it>

Operating offices:

Dossobuono
Dossobuono

Ancona
Ancona

S. Angelo Lodigiano
S. Angelo Lodigiano

Scandicci
Scandicci

Parma
Parma

Rivoli
Rivoli

Roma
Roma

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 8

Business sectors: Environmental services

CONTACTS

Fabio Giacomo Santomauro

fabio.santomauro@omnisyst.it

+39 0371984066

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Industrial symbiosis

Development of custom procedures for the management of by-products in various industries, with the aim of allowing the reuse by-products and enable industrial symbiosis



Digitalization

Evolution of the Omnisyst proprietary web-based platform, to leverage the introduction of R.E.N.T.Ri. (National Electronic Register of Waste Traceability) in order to increase the degree of automation and support to customers who use it in the management of their industrial waste



Carbon neutrality

Development of an algorithm to monitor climate-changing gas emissions in all phases of waste management (from transport - already activated 2 years ago and validated by CertiQuality - up to waste treatment) and simulating scenarios that allow, on the one hand to make choices with a lower environmental impact and, on the other hand, to compensate for residual emissions, enabling carbon neutral waste management



Circular economy

Identification and testing of technologies aimed at recovering materials from production waste (e.g. metals from waste water, cellulose from food waste) for improving environmental performance and optimizing costs



Biodiversity

Implementation of solutions aimed at monitoring and improving biodiversity, particularly around production sites and waste treatment plants, through the use of sensors and pollinating insects, for optimizing the environmental conditions of the territories



COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Torino University
- University of Padua

POLITEX S.a.s. di FREUDENBERG POLITEX S.r.l.

GENERAL INFORMATION

Strada Provinciale Novedratese 17/A - 22060 Novedrate (CO)

sito web: <https://buildingmaterials.freudenberg-pm.com/en>

Operating offices:

Pisticci (MT)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 5.00 %

Number of researchers: 3650

Business sectors: Advanced materials; Bitumen sheets for waterproofing; Chemicals from biomasses; Compounds and auxiliaries for plastics, plasticizers and similar products; Fibers for industrial use; Resins and thermoplastic systems; Resins and thermosetting systems

CONTACTS

Federico Pallini

+39 031793111

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Renewable sources

Study and experimentation of raw materials from renewable sources for the production of nonwovens



Processes

Development of processes with better energetic efficiency.



Innovative research

Development of non-woven with higher performance for the reference market and better exploitation of the raw material



CO2 reduction

Substitution of raw materials of fossil origin with renewable sources. Exploitation of cogeneration technologies



Innovative research

Development of processes for the valorization or the re-use of production waste



Incremental research

Use of recycled raw materials and from renewable sources



Water saving

Improvement of production technologies for the reduction of water consumption



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Pisa
 - University of Calabria
-



PROCTER & GAMBLE S.r.l.

GENERAL INFORMATION

Viale Giorgio Ribotta 11 - 00144 Roma (RM)
sito web: <http://www.pg.com>

Operating offices:

Pomezia - Santa Palomba
Pomezia - Santa Palomba

Gattatico
Gattatico

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 2.00 %

Number of researchers: 8000

Business sectors: Aerosol products; Auxiliaries for detergents and surfactants; Cleaning and maintenance products - biocides; Cosmetics; Detergents and related products; Flavors and fragrances; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Medical surgery: disinfectants; Soap; Surfactants and raw materials for detergents

CONTACTS

Sergio Barbarino
barbarino.s@pg.com
+32 24563644

P&G has R&D centers in Europe in Belgium, Germany and UK developing detergents, personal hygiene and cosmetic products and small personal hygiene appliances.

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Reduce waste and plastic waste



Sustainable processes

Development and optimization of more sustainable productive processes, scalability



Decarbonization

Low Carbon footprint materials, defossilization



Products

Product formulation & optimization, more sustainable composition, elimination of substances of interest



COLLABORATIONS WITH PUBLIC RESEARCH

- CGSI (Center for Colloid and Surface Science), University of Florence
- "Federico II", University of Naples

RADICIGROUP

GENERAL INFORMATION

Via Ugo Foscolo 152 - 24024 Gandino (BG)
 sito web: <http://www.radicigroup.com>

Operating offices:

Casnigo (BG), Chignolo d'Isola (BG), Gandino (BG), Villa d'Ogna (BG), Novara

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.20 %

Number of researchers: 32

Business sectors: Advanced materials; Compounds and auxiliaries for plastics, plasticizers and similar products; Fibers for industrial use; Intermediates and specialty chemicals; Resins and thermoplastic systems; Staple fibres for clothing and furnishing; Yarns for clothing and furnishing

CONTACTS

Filippo Servalli
filippo.servalli@radicigroup.com
 +39 035715411

DATASHEET ICONS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy

Supply Chain Projects to manage post-consumer end-of-life of products, recycling and reuse of materials in the plastics and textile industries. Development of new recycling strategies and methodologies exploiting most advanced technologies to recover post-industrial and post-consumer materials based on polyamides and polyesters



Wastewater treatment

Improvement of water recovery and treatment processes. Water stress analysis at RadiciGroup and adoption of consumption rationalization policies. Development of solutions to improve and optimize water recovery and treatment processes



Ecodesign

Research of innovative solutions, in cooperation with customers, following an ecodesign approach, to extend the useful life of materials through end-of-life recycling and to reduce their environmental impact and improve sustainability. Development of polyamide & polyester based materials for the design of easily recyclable products



Advanced materials

High performance polymers for textiles and technopolymers. Development of new materials for several industrial applications (e.g. advanced filtration materials, advanced textile materials, innovative continuous filament based thermoplastics composites).



Bio-based

Research on bio-based chemical intermediates and polymers and on innovative production technologies targeting the development of virtuous and sustainable supply chains, from raw materials to product end-of life. Development and/or research of alternative processes to obtain intermediates from renewable sources for use as building blocks to produce bio-based polyamides. Development of new polymers based on monomers from renewable sources



Climate change

Study on solutions for plant and process emission abatement. The Projects of Environmental Product Declaration and Product Environmental Footprint in RadiciGroup allow a continuous and precise impact monitoring and hence the definition of improvement programs by site/product and for new processes/ products. Evaluation of Carbon Capture technologies to be applied to RadiciGroup processes



COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Milano University
 - Politecnico di Torino University
 - University of Bergamo
 - University of Milan
 - University of Milano Bicocca
 - University of Piemonte Orientale
 - University of Turin
-

REYNALDI S.r.l.

GENERAL INFORMATION

Via Torino 21/1 - 10044 Pianezza (TO)

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 8.00 %

Number of researchers: 6

Business sectors: Cosmetics

CONTACTS

Marco Piccolo

info@reynaldi.it

+39 0119588271

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Innovative research

Using polyphenols from food production waste for the development of highly sustainable cosmetics



Water saving

System finalized to recover, filter and reuse production water



Innovative research

Patenting of upcycling biomass processing systems (apple, hazelnut, tomato...)



Renewable sources

Formulating cosmetics with compost extracts



Innovative research

Process digitisation and Industry 4.0



Sustainability

Creating formulations for customers



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Turin (Drug Science and Technology Department; Life Sciences and System Biology Department)

ROELMI HPC S.r.l.

GENERAL INFORMATION

Via Celeste Milani 24/26 - 21040 Origgio (VA)

Operating offices:

Novara
Novara

Lainate
Lainate

Solaro
Solaro

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 4.00 %

Number of researchers: 8

Business sectors: Cosmetics; Ingredients for food supplements and functional food;
Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry

CONTACTS

Stefania Zanzottera
stefania.zanzottera@roelmihpc.com
+39 0233510150

<https://natureispeople.com/>

DATASHEET ICONS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Fermentation

Biofermentation of bacterial strains for the production of post-biotics



Green chemistry

Development of products from vegetable raw materials and food by-products, purification of plant matrices, synergies of active ingredients. Development of new processes with low environmental impact



Circular economy

Research and development of cosmetic and nutraceutical ingredients and medical devices from renewable and unrelated by-products of the food industry



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR
- Politecnico di Torino University
- SSOG - Innovhub
- University of Bologna
- University of Novara
- University of Calabria
- University of Milan
- University of Milano - Bicocca
- University of Trieste
- University of Udine
- UPO-CAAD (Center For Translational Research On Autoimmune And Allergic Disease)

ROQUETTE ITALIA S.p.A.

GENERAL INFORMATION

Via Serravalle 26 - 15063 Cassano Spinola (AL)
sito web: <http://www.roquette.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY
Research expenditure (% of turnover): 0.05 %
Number of researchers: 2
Business sectors: Starches and derivatives

CONTACTS

Daniele Dalla Pria
daniele.dallapria@roquette.com
+39 0143774541

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Biotechnology

Microorganism usage (enzymes) in biochemical production



Wastewater

Studies aimed to reduce the production of wastewater and their treatment



Water

Studies and interventions aimed to reduce the water usage in production processes



COLLABORATIONS WITH PUBLIC RESEARCH

- University Cattolica del Sacro Cuore, Piacenza
- University of Turin (Department of Chemistry)

ADDITIONAL INFORMATION

SASOL ITALY S.p.A.

GENERAL INFORMATION

Viale Enrico Forlanini 23 - 20134 Milano (MI)

sito web: <https://www.sasol.com/our-businesses/chemicals/Italy>

Operating offices:

Augusta (SR), Passerini (LO), Sarroch (CA)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.20 %

Number of researchers: 17

Business sectors: Organic base chemicals; Surfactants and raw materials for detergents

CONTACTS

Francesco Lombardo

francesco.lombardo@it.sasol.com

+39 0377463343

DATASHEET ICONS

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DESCRIPTION OF INDUSTRIAL RESEARCH

Efficiency	Development of alternative production routes for detergent intermediates and other intermediates used in different application areas	 	   
Carbon capture	Feasibility studies for the capture of CO2 from production plants and further conversion in raw material for the production of fatty alcohols	 	   
Artificial intelligence	Analysis of process data for the application of algorithms based on artificial intelligence for the optimization of the production performances	 	   
New products	Lab scale production and further industrialization of new substances currently not included into our product portfolio	 	   
Efficiency	Automation of monitoring systems aimed at the reduction of water consumption by the production units	 	   
Wastewater	Maximize wastewater reuse through adoption of new technologies that allow reduction of hydrocarbons/inorganic species in water matrices and treatment of concentrate resulting from osmosis plants	 	   
Ecological transition	Evaluation of renewable raw materials based both on vegetable oils or deriving from reprocessing of production scrap (e.g. scrap from food industry, biomass or plastic waste)	 	   
Efficiency	In light of continuous improvement of existing production processes, identification of new raw materials and catalysts that lead to maximize yields and improve overall economics of the production cycles	 	   



COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Torino University
 - University of Bari
-

SCAM S.p.A.

GENERAL INFORMATION

Strada Bellaria 164 - 41126 Modena (MO)
sito web: <http://www.scam.it>

Operating offices:

Modena (MO)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 6

Business sectors: Crop protection products; Fertilizers (organo-minerals, organic, soil improvers and growing media); Mineral fertilizers; Specialities fertilizers

CONTACTS

Stefano Tagliavini
stefano.tagliavini@scam.it
+39 059586511

info@scam.it

DATASHEET ICONS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Biostimulants

Study of matrix for biostimulant fertilizers



Fertilizers efficiency

Characterization of "high agronomic efficiency" fertilizers, with gradual release of nutrients, in particular phosphorus and nitrogen, limitation of leaching of nitrogen



Circular economy

Study of matrix from "circular economy vegetal sources" for organo-mineral fertilizers



Organo-mineral fertilizers

Characterization of the granulation process of fertilizers with Humic matrix



COLLABORATIONS WITH PUBLIC RESEARCH

- Anadiag Italia S.r.l. - Tortona
- Horta S.r.l. - Ravenna
- Sagea Cento di Saggio S.r.l. - Cuneo
- University of Bologna (Industrial Chemistry – Agrofood Science and Technology)
- University of Turin (Department of Agricultural Forest and Food Sciences)
- University of Udine (Environmental Science Department)

SELERANT S.r.l. (Trace One Group)

GENERAL INFORMATION

Via Leonardo da Vinci 19 - 20060 Cassina de' Pecchi (MI)
 sito web: <http://www.selerant.com>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 40.00 %

Number of researchers:

Business sectors: Financial, services, engineering and research companies

CONTACTS

Michele Zaupa
sales@selerant.com
 +39 335 5771324

DATASHEET ICONS



PRODUCTS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainability

Enhancement of the Ecodex, an eco-design software tool for evaluating and understanding the environmental impacts of products and packaging. It helps companies improve the sustainability of new products or the existing portfolio, in a cost-effective and simple way



Digitalization

Enhancement of the Hazex Cloud, the top-notch automation tool for EHS Compliance and SDS authoring in Chemical companies to support the development of compliant and sustainable chemical products. Hazex Cloud continues regulatory and functional updates helps businesses of all sizes navigate the complex and evolving local, regional and global GHS-based regulatory requirements, conforming to environmental, health and safety laws and standards. Hazex Cloud helps generating compliant SDS and hazard labels, as well as keeping them updated by storing all the information related to the product



COLLABORATIONS WITH PUBLIC RESEARCH

- INRS (Institut national de la recherche scientifique)
- ISS (Istituto Superiore di Sanità)
- RMIT (Royal Melbourne Institute of Technology)

SERICHIM S.r.l.

GENERAL INFORMATION

Piazzale Marinotti 1 - 33050 Torviscosa (UD)
 sito web: <http://www.serichim.it>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 25.00 %

Number of researchers: 16

Business sectors: Active and intermediate principles for the pharmaceutical industry; Biotechnologies; Chemicals from biomasses; Financial, services, engineering and research companies; Intermediates and specialty chemicals

CONTACTS

Fausto Ferrazzi
fausto.ferrazzi@serichim.it
 +39 0431381403

DATASHEET ICONS



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TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Hydrogen

Transport and use of H₂ from renewable sources for sustainable mobility



Biotechnology

Development of an innovative process for the production of a biosimilar



Renewable sources

Development of primary plasticiser from non-food vegetable oils



Biotechnology

Development of an immobilised enzyme catalyst on polymer from a renewable source



Carbon capture

Capture and purification of CO₂ from fumes in production furnaces, and transformation into consumer products



COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - ISM
- ETH - Institute for Chemical and Bioengineering, Switzerland
- Fraunhofer Gesellschaft, Germany
- University of Trieste
- University of Udine

SIPCAM OXON S.p.A.

GENERAL INFORMATION

Via Sempione 195 - 20016 Pero (MI)
 sito web: <http://www.sipcam-oxon.com>

Operating offices:

Lodi (LO), Salerano sul Lambro (LO), Mezzana Bigli (PV)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 2.50 %

Number of researchers: 35

Business sectors: Active and intermediate principles for the pharmaceutical industry; Chemicals from biomasses; Crop protection products; Fertilizers (organo-minerals, organic, soil improvers and growing media); Intermediates and specialty chemicals; Specialities fertilizers

CONTACTS

Nicola Gelmetti
 ngelmetti@sipcam.com
 +39 02353781

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DESCRIPTION OF INDUSTRIAL RESEARCH

Biostimulants

Extraction of new biostimulant products in line with the European Commission's strategy based on the Circular Economy. New organic products: microorganisms, natural extracts, etc.



Agrochemicals

Maximization of the effectiveness of the active ingredients and aimed at reducing the environmental impact by reducing doses of use (eg CS formulations). New delivery systems of active ingredients, agrochemicals, organic and nutritional products



Active ingredients

Study of chemical and biochemical processes for the manufacture of active ingredients for agro and intermediate use



COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Milano University (Department of Chemistry, Materials and Chemical Engineering "Giulio Natta")
- University Cattolica del Sacro Cuore, Piacenza (Department of Food Science and Technology for a Sustainable Food Supply Chain)
- University of Camerino (School of Pharmaceutical Sciences and Health Products)
- University of Milan "Bicocca" (Department of Biotechnology and Biosciences)
- University of Pavia (Department of Chemistry and Pharmaceutical Technology)



SIVAM Coatings S.p.A.

GENERAL INFORMATION

Via Monvisio 10 - 20010 Bareggio (MI)
sito web: <https://www.sivam.it/>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY
Research expenditure (% of turnover): 5.00 %
Number of researchers: 10
Business sectors: Paints and varnishes

CONTACTS

Odoardo Reggiani
o.reggiani@sivam.it
+39 0290304211

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Vernici legno e
industria

Activities carried out in order to bring new products to the target market



SOCIETA' ITALIANA ACETILENE E DERIVATI S.I.A.D. S.p.A.

GENERAL INFORMATION

Via San Bernardino 92 - 24126 Bergamo (BG)

sito web: <http://www.siad.it>

Operating offices:

Osio Sopra
Osio Sopra

Trieste
Trieste

Cinisello Balsamo
Cinisello Balsamo

Pomezia
Pomezia

Mestre
Mestre

Porto Torres
Porto Torres

Padova
Padova

Roma
Roma

Macomer
Macomer

Ravenna
Ravenna

Genova
Genova

Ponzano Veneto
Ponzano Veneto

Avenza
Avenza

Costa Volpino
Costa Volpino

S. Mauro Torinese
S. Mauro Torinese

Brescia
Brescia

Ozzano
Ozzano

Rosignano
Rosignano

Carlino
Carlino

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.00 %

Number of researchers: 35

Business sectors: Medical gases; Technical and special gases

CONTACTS

Giorgio Bissolotti
giorgio_bissolotti@siad.eu
+39 035328444

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Food	Research for the preservation of food and foodstuffs foodstuffs by means of gases and gas mixtures	 	   
Cryobanks	Research into technologies for the storage of biological material using liquid nitrogen (cryobanks) and their automation	 	   
Combustion	Innovative oxygen insufflation processes in submerged combustion for nitrogen oxide reduction. Research into the use of gases and gas mixtures in combustion processes and the reduction of atmospheric emissions	 	   
Natural gas	Mixtures for calibrating natural gas analysers and biogas analysers	 	   
Gas recovery	Research for the reuse of gaseous fractions emitted from the treatment of biomass, their purification to make them suitable for energy production, recovery of methane and carbon dioxide. Production of biomethane from organic material	 	   
Metrology	Research for the production of calibration gas mixtures and reference gas mixtures (CRM, Certified Reference Material) for the fields: medical; environmental; industrial; food; industrial hygiene; natural gas, biogas, energy, olfactometry	 	   
Energy	Energy storage using compressed or cryogenic gases	 	   
Food	Research into new gas mixtures to increase the shelf life of food and foodstuffs. Use of innovative gases for this field	 	   
Gas storage	Storage of gases in nanostructures; separation of gases from gaseous streams	 	   
CO2 recovery	Recovery of carbon dioxide from gaseous emissions and its reuse in industrial processes. Research and analysis of gaseous fractions containing carbon dioxide and development of plant parts for its purification and reuse. Recovery of carbon dioxide for fuel production	 	   
Biogases	Research to increase biogas production from anaerobic digesters	 	   

Wastewater treatment	Research for the reduction of production of activated sludge in civil and industrial water purification processes		   
Environment	Technologies for the recovery of contaminated sites. Research into new treatment processes to purify groundwater from contaminated sites using oxygen and other oxidising or reducing gases		   
Microbiology	Characterisation of the presence of micropollutants and microbiological charge in gases		   
Wastewater treatment	Research into new processes for biological and chemical purification, also with the use of ozone, for the removal of pollutants from wastewater of chemical, pharmaceutical and petrochemical industries; biological purification processes for the removal of nitrogen from wastewater. Research for the application of ozone in different stages of the wastewater purification process in order to reduce costs and for subsequent water reuse		   
Medicinal gas	Research for the production of experimental medicinal mixtures. New gas mixtures for medical, health and healthcare applications		   
Micropollutants	Research for wastewater treatment using pure oxygen or ozone for the removal of micropollutants and endocrine substances		   
Aerosols	Research into processes for reducing the emission of aerosols, gaseous micropollutants and greenhouse gases from biological purification plants		   
Calibration	New gas mixtures for environmental, industrial, food applications, industrial hygiene, chemical, metallurgical, oenological and energy.		   
Vegetable growth	New mixtures to promote plant growth and reduce pesticide use		   
Technical gas	Research for liquefaction, through purification, of natural gas natural gas; recovery of refrigerants from liquefied natural gas		   
Gas purification	Gas purification for applications in the industry electronics industry, the pharmaceutical industry, the food industry		   
Environment	Wastewater treatment technologies		   
Welding	New gas mixtures for improved welding and for use in additive manufacturing		   

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR
- Mario Negri Institute
- Politecnico di Milano University
- University of Bergamo
- University of Milano
- University La Sapienza Rome



BOLTON

Società Italo Britannica L. Manetti - H. Roberts & C. S.p.A.

GENERAL INFORMATION

Via Baldanzese 177 - 50041 Calenzano (FI)
sito web: <http://www.boltongroup.net>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover):

Number of researchers:

Business sectors: Cosmetics

CONTACTS

Ludovico Panzieri
lpanzieri@boltonmanitoba.it
+39 3386710801

DATASHEET ICONS



PRODUCTS



PROCESSES



SERVICES



TECHNOLOGIES



PROPRIETARY SEARCH



THIRD PARTY RESEARCH

DESCRIPTION OF INDUSTRIAL RESEARCH

Waste reduction

We are committed to ensuring 100% of industrial waste is recycled or recovered. In addition, by 2025, 100% of our packaging will be reusable, refillable or designed to be recycled



Zero deforestation

By 2025 we are committed to achieving positive forest management: 100% recycled or sustainably sourced paper in our packaging; 100% RSPO-certified palm oil derivatives in our products



Water saving

We are committed to contributing to the achievement of the target of the Bolton Group of which we are a part, toward a 20% reduction in water consumption per finished product by 2025



Decarbonization

We are committed to contributing to the achievement of the target of the Bolton Group of which we are a part, toward a 20 % reduction in CO2



Circular economy

In packaging and product design we are guided by the principle of "doing more with less," which means being increasingly efficient in the circular and sustainable economic model by using fewer materials, including reducing the thickness and weight of our packaging wherever possible. To reduce the environmental impact of our packaging, we work also steadily toward the goal of using an increasing % of recycled and/or biobased plastic within our packaging, in view of our ambitious Group-wide target of using 40% recycled plastic by 2025. We are also committed to achieving a more circular approach on packaging through the use of zero virgin plastic from fossil sources by 2035



Circular economy

We work every day to develop more sustainable formulas for our products and to increase the use of naturally sourced or renewable ingredients. Tangible examples of this include our commitment to use 100% certified palm oil derivatives from RSPO by 2025. Also with a view to protecting and restoring biodiversity, with a specific focus on ocean health conservation, we are committed to developing 100 % sunscreens by 2025 in accordance with the Hawaiian Reef Bill, a law in the U.S. state of Hawaii that went into effect beginning in 2021 that prohibits the use of certain UV filters within sunscreens as they accelerate the coral bleaching process. In addition, by 2035 we are committed to achieving 100 % biodegradable ingredients in our home and personal care products



COLLABORATIONS WITH PUBLIC RESEARCH

Manetti & Roberts collaborates with public and private research institutes.



SOL S.p.A.

GENERAL INFORMATION

Via Gerolamo Borgazzi 27 - 20900 Monza (MB)

sito web: <http://www.sol.it>

Operating offices:

Catania

Catania (CT)

Mantova

Mantova (MN)

Ravenna

Ravenna (RA)

Novara

Novara (NO)

Caserta

Caserta (CE)

Torino

Torino (TO)

Cuneo

Cuneo (CN)

Palermo

Palermo (PA)

Padova

Padova (PD)

Vibo Valentia

Vibo Valentia (VV)

Roma

Roma (RM)

Pisa

Pisa (PI)

Genova

Genova (GE)

Salerno

Salerno (SA)

Brescia

Brescia (BR)

Pavia

Pavia (PV)

Cagliari

Cagliari (CA)

Cremona

Cremona (CR)

Pesaro
Pesaro (PU)

Bari
Bari (BA)

Perugia
Perugia (PG)

Ancona
Ancona (AN)

Bologna
Bologna (BO)

Verona
Verona (VR)

Udine
Udine (UD)

Grosseto
Grosseto (GR)

Chieti
Chieti (CH)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 2.00 %

Number of researchers:

Business sectors: Biotechnologies; Environmental services; Liquefied gas; Medical gases; Specialities fertilizers; Technical and special gases

CONTACTS

Massimo Beccalli
m.beccalli@sol.it
+39 0392396413

Stefania Mariani
s.mariani@sol.it
+39 0392396390

Mauro Senili
m.senili@sol.it
+39 0392396364

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Oxycombustion

Innovative combustion process for metal production and siderurgy applications



Renewable gas

Industrial applications of combustible cryogenic gases (bioLNG and greenLH2) from renewable sources



Green Hydrogen

High efficiency H2 production and utilization plants. H2 refuelling plants for sustainable mobility



Technical gas

New gas mixtures for diagnostic, industrial, environmental, food uses



CCUS

Technologies and processes for CO2 capture and utilization



Biotechnology	Technologies for sampling, handling and storage of biologic material by liquid nitrogen-based technologies, low-energy processes		   
Food industry	Low emission – high efficiency processes and plants for food industry		   
Water recycling	Gas supported – advanced technologies for water treatment and recovery		   
Solid waste	High efficiency process for recovery and re-use of solid waste		   
H2 mixtures	H2 mixtures production and separation by not-conventional low-energy process		   

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - IM, Naples
- CNR - ITAE, Messina
- ENEA
- Monza Research Institute
- Politecnico di Milano University
- University of Florence
- University of Genova
- University of Piemonte
- University of Pisa
- University of Salerno



SOL.BAT S.r.l.

GENERAL INFORMATION

Località Casone - 58020 Scarlino (GR)

sito web: <http://www.solbat.it>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 5.00 %

Number of researchers:

Business sectors: Cosmetics; Detergents and related products; Inorganic base chemicals; Medical surgery: disinfectants; Soap

CONTACTS

Dario Lolini

d.lolini@solmine.it

+39 056670111

Jury Pagni

j.pagni@solmine.it

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Energy saving

Improved production and packaging, decreased customer expectations, improved product quality, optimized finished product storage



Product refinement

Improvement of products designed to minimize the occurrence of allergic phenomena especially in large consumers



New products

New generation detergent formulation to improve detergent power by decreasing the amount of surfactants derived from renewable sources



COLLABORATIONS WITH PUBLIC RESEARCH

- Polyclinic Santorsola Malpighi (Unit of: Dermatology; Occupational Medicine)
 - University of Ferrara (Consorzio Futuro in Ricerca)
 - University of Siena (Department of Dermatology)
-



Progress beyond

SOLVAY SPECIALTY POLYMERS ITALY S.p.A.

GENERAL INFORMATION

Viale Lombardia 20 - 20021 Bollate (MI)
sito web: <http://www.solvay.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.50 %

Number of researchers: 280

Business sectors: Adhesives and sealants; Advanced materials; Auxiliaries for detergents and surfactants; Cleaning and maintenance products - biocides; Compounds and auxiliaries for plastics, plasticizers and similar products; Cosmetics; Detergents and related products; Financial, services, engineering and research companies; Flavors and fragrances; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Inorganic base chemicals; Intermediates and specialty chemicals; Lubricants; Medical surgery: disinfectants; Organic base chemicals; Paints and varnishes; Photosensitive products; Resins and thermoplastic systems; Resins and thermosetting systems; Surfactants and raw materials for detergents

CONTACTS

Claudia Caffi
claudia.caffi@solvay.com
+39 0229092211

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Sustainable technologies

New innovative processes for sustainable polymerizations



Green Hydrogen

Membranes for green H2 production and fuel cells



Circular economy

Circular economy cycles, demonstrated recyclability of special materials. New processes for recycling and reuse of end-of-life polymers



Digitalization	Remote industrial operations, design of experiment, process/research optimization predictive calculations		   
Electric car	Material development for electric motors		   
Batteries	Lithium batteries new generation and solid state		   
Polymers	Use of existing materials for the development of new applications in close cooperation with customers		   

COLLABORATIONS WITH PUBLIC RESEARCH

- Politecnico di Milano University
- Politecnico di Torino University
- University of Bologna
- University of Florence (Center for Colloid and Surface Science)
- University of Pavia
- University of Piemonte Orientale
- University of Torino



TAKIS S.r.l.

GENERAL INFORMATION

Via Castel Romano 100 - 00128 Roma (RM)
 sito web: <http://www.takisbiotech.it>

Operating offices:

Ariano Irpino (AV)

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 100.00 %

Number of researchers: 26

Business sectors: Biotechnologies

CONTACTS

Luigi Aurisicchio
aurisicchio@takisbiotech.it
 +39 0650576077

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Vaccines	Development of Vaccines based on nucleic acids and innovative administration technologies		
Monoclonal antibodies	Development of antibodies for diagnostic and therapeutic applications		
Studi in vitro in vivo	Development of predictive models and Testing of new preventive and therapeutic solutions		

COLLABORATIONS WITH PUBLIC RESEARCH

- Campus Biomedico, Roma
- IRST "Alberto Amadori" di Meldola
- Biogem Institute
- Telethon Institute
- Cancer Institute "Fondazione G. Pascale"
- Cancer Institute Regina Elena (IRE/IFO)
- Università degli studi "Federico II" di Napoli
- Università degli studi "La Sapienza" di Roma
- Università degli studi "Magna Grecia" di Catanzaro
- Pediatric hospital Bambino Gesù

TEMIX OLEO S.r.l.

GENERAL INFORMATION

Via Piero Portaluppi 17 – 20138 Milano (MI)

sito web: <http://www.temixoleo.com>

Operating offices:

Bologna

Bologna

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.20 %

Number of researchers: 4

Business sectors: Auxiliaries for detergents and surfactants; Ceramic glaze, inorganic pigments, metal oxides; Chemicals from biomasses; Compounds and auxiliaries for plastics, plasticizers and similar products; Cosmetics; Detergents and related products; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals; Lubricants; Surfactants and raw materials for detergents

CONTACTS

Mirko Locritani

m.locritani@temixoleo.com

+39 3491483172

DATASHEET ICONS



PRODUCTS

PROPRIETARY SEARCH



PROCESSES

THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Vehicles	Development of biodegradable esters for use as high performance lubricants to reduce friction at low temperatures in electric and mixed cycle (hybrid and plug-in) engines	 	   
Cosmetic	Development of formulations to be used as substitutes for silicone oil	 	   
Transformers	Productions of dielectric fluids from renewable sources or circular economy (biomass) for oil bath transformers	 	   
Gears	Functionalisation of polyols for gear at submarine water level for large ships	 	   
Polymers	Synthesis of polymers with different viscosity ranges for use as: chain lubricant, industrial gear oil, hydraulic fluids	 	   

Timac Agro Italia S.p.A.

GENERAL INFORMATION

S.P. 13 Località Ca' Nova - 26010 Ripalta Arpina (CR)
 sito web: <https://it.timacagro.com/>

Operating offices:

Barletta
 Via Trani 21 - 76121 Barletta (BT)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 2.06 %

Number of researchers: 5

Business sectors: Fertilizers (organo-minerals, organic, soil improvers and growing media); Specialities fertilizers

CONTACTS

Daniel El Chami
 daniel.elchami@roullier.com
 +39 3738468748

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Resilient industry

Research aimed at innovations to improve production processes and the accompany's production plants towards a sustainable transition



Responsible business

Research along this line includes activities for measuring and evaluating corporate policies' social, economic and environmental impacts and how they can lead sustainable transformation and help to face the epochal challenges in which we operate



Circular economy

Identification of new technologies and methods for recovering nutrients from different types of waste following the circular economy model



Sustainable agriculture

Applied research to identify the most sustainable agricultural practices to achieve the objectives of the Farm to Fork strategy: optimising natural resources, protecting soil and plant health, and increasing yields



COLLABORATIONS WITH PUBLIC RESEARCH

TIMAC AGRO Italia's stakeholders are essential for achieving corporate objectives. In this case, universities and research institutions are fundamental stakeholders to achieve the goals set by the Sustainable and Innovative Research department. For this reason, the company today collaborates with over ten national universities and international research bodies throughout the Italian territory.

- CNR
 - ENEA
 - Euro-Mediterranean Centre for Climate Change (CMCC Foundation)
 - Mediterranean Agronomic Institute of Bari (CIHEAM-IAMB)
 - Politecnico di Milano University
 - UniSmart Foundation
 - University Campus Bio-Medico
 - University Cattolica del Sacro Cuore
 - University of Bari
 - University of Bologna
 - University of Camerino
 - University of Gastronomic Sciences - Campus
 - University of Genova
 - University of Padua
 - University of Torino
 - University of Udine
-

Torggler

TORGGLER S.r.l.

GENERAL INFORMATION

Via Prati Nuovi 9 - 39020 Marlenigo (BZ)
sito web: <https://www.torggler.com/it/it/>

Operating offices:

Rieti (RI)

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover): 2.00 %

Number of researchers: 2

Business sectors: Adhesives and sealants; Aerosol products; Bitumen sheets for waterproofing; Detergents and related products; Paints and varnishes

CONTACTS

Georg Gramm

+39 3420966030

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Best performance

Engagement in the formulation and creation of experimental blends, bringing together a variety of components and materials. These versatile mixtures are then subjected to a series of rigorous tests and assessments, aiming to comprehensively and accurately evaluate their performance. Use of standardized tests and design customized tests that stretch beyond traditional parameters, providing a thorough assessment of products' capabilities. Development of products with the highest level of performance and quality. Acknowledgment of the needs of customers that are constantly evolving, requiring increasingly advanced solutions. Commitment to exceeding expectations through the adoption of innovative approaches and the development of cutting-edge formulations. The dedication to research and innovation enables to create products that not only address current challenges but also anticipate future needs



VALAGRO S.p.A.

GENERAL INFORMATION

Via Cagliari 1 - 66041 Atessa (CH)
 sito web: <http://www.valagro.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 3.28 %

Number of researchers: 43

Business sectors: Fertilizers (organo-minerals, organic, soil improvers and growing media); Mineral fertilizers; Specialities fertilizers

CONTACTS

Daniela D'Archivio
d.darchivio@valagro.com
 +39 0872881559

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Circular economy	Chemical, biological, and agronomical screening of substances/materials derived from other industrial processes	 	   
Fermentation	Study of development and optimization of bioprocess for living and extracted beneficial microorganism	 	   
Nutrient efficiency	Investigation on the efficiency of uptake and transport of macronutrients in selected crops	 	   
Soil Health	Screening for substances that can be applied to the soil, benefiting its biological, chemical, or physical structure to sustain plant productivity and promote plant health	 	   
Seed care	Chemical and biological characterization and efficacy testing of candidate active ingredients that improve crop seed emergence and early stages development	 	   
Biofertilizers	Study of microorganisms, their growth, typing, characterization, and application to improve the availability of nutrients in the soil, phyllosphere, endosphere, or rhizosphere	 	   
Biostimulant discovery	Activities aimed at improving capacity and capability expansion of the existing biostimulant discovery engine	 	   
Water use	Investigation on the efficiency of uptake and transport of water in selected crops subjected to different water regimes	 	   
Crop enhancement	Application of biotechnologies to enrich specific active ingredients that enhance a crop target of interest	 	   

Blue economy	Blueremediomics, Horizon Europe project aiming to investigate and screen marine microbiomics using a blue economy approach with the aim of delivering of products based on marine microbiome and circular economy		   
Plant health	Screening for substances that can enhance the natural processes of plants and/or increase tolerance against environmental stress		   
Multi-Omics	Apply different but integrated “omic” sciences, such as transcriptomics, phenomics, and metabolomics, for the discovery and Mode of Action characterization of biologicals		   

COLLABORATIONS WITH PUBLIC RESEARCH

- ALSIA/Metapontum Agrobios di Metaponto (JointLab: Valagro@PHENOlAb)
- CNR (IPSP, Turin)
- École Normale, Paris (Institut de Biologie de l'Ecole Normale Supérieure - IBENS).
- Scuola Superiore Sant'Anna di Pisa (JointLab: Valagro@PLANTlab)
- University of Teramo
- University of Verona

VARIATI S.p.A.

GENERAL INFORMATION

Via Monte Rosa 49/51 - 20863 Concorezzo (MB)
 sito web: <https://www.variati.it>

DETAILED INFORMATION

Dimension: MEDIUM COMPANY

Research expenditure (% of turnover):

Number of researchers: 2

Business sectors: Auxiliaries for detergents and surfactants; Cosmetics; Food additives and processing aids; Ingredients for food supplements and functional food; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Organic pigments and dyestuffs; Surfactants and raw materials for detergents

CONTACTS

Emanuele De Marni
 emanuele.demarni@variati.it
 +39 0396115806

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Nutraceuticals

Development of vehicles to improve the properties and/or characteristics of nutraceutical active ingredients. Research of food ingredients, derived from sustainable sources



CO2 reduction

Certification ISO14001, the company has always been committed to improving the environmental impact of its activities, as well as preventing risks to populations and the environment not only in compliance with current environmental legislation, but taking into account the development of scientific research and the best experiences in the field. The company intends to conduct its investments and development in an environmentally sustainable way, respecting local communities, committing itself to optimizing its consumption of raw materials, energy, and to reducing its polluting emissions and the impact of its activities on the climate



Circular economy

Use of raw materials and intermediates of vegetable origin from waste from the food industry



Water saving

Certification ISO14001, the company has always been committed to improving the environmental impact of its activities, as well as preventing risks to populations and the environment not only in compliance with current environmental legislation, but taking into account the development of scientific research and the best experiences in the field. The company intends to conduct its investments and development in an environmentally sustainable way, respecting local communities, committing itself to optimizing its consumption of water and to reducing the impact of its activities on the climate



Cosmetic

Development of delivery to improve the properties and/or characteristics of cosmetic active ingredients. Research of cosmetic ingredients, derived from sustainable sources



Food

Development of vehicles to improve the properties and/or characteristics of active ingredients in the food sector. Research of food ingredients, derived from sustainable sources



COLLABORATIONS WITH PUBLIC RESEARCH

Variati S.p.A. participates and collaborates with Research Institutions and Universities in specific projects in different sectors, according to needs that are identified on the basis of the issues being researched for product or performance improvement in end use



VERSALIS S.p.A.

GENERAL INFORMATION

Piazza Boldrini 1 - 20097 San Donato Milanese (MI)
sito web: <https://www.versalis.eni.com>

Operating offices:

Mantova
Mantova (MN)

Roccabianca
Roccabianca (PR)

Ravenna
Ravenna (RA)

Porto Marghera
Porto Marghera (VE)

Brindisi
Brindisi (BR)

Ancarano
Ancarano (TE)

Ragusa
Ragusa (RG)

Ferrara
Ferrara (FE)

Priolo
Priolo (SR)

Crescentino
Crescentino (VC)

Novara
Novara (NO)

Rivalta Scrivia
Rivalta Scrivia (AL)

Porto Torres
Porto Torres (SS)

Ascoli Piceno
Ascoli Piceno (AP)

Morrovalle
Morrovalle (MC)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 0.70 %

Number of researchers: 350

Business sectors: Biotechnologies; Bitumen sheets for waterproofing; Chemicals from biomasses; Cleaning and maintenance products - biocides; Compounds and auxiliaries for plastics, plasticizers and similar products; Intermediates and specialty chemicals; Lubricants; Medical surgery: disinfectants; Organic base chemicals; Resins and thermoplastic systems

CONTACTS

Giuseppe Conti
giuseppe.conti@versalis.eni.com
+39 0252032009 / +39 3440186614

DESCRIPTION OF INDUSTRIAL RESEARCH

Green tires	Elastomers compounded with chemicals from renewable sources for green tyres production with reduced carbon footprint	 	   
Polymeric materials	Development of innovative polymeric blends based on thermoplastic polymers and bioplastics	 	   
Biofuels	Development of saccharification/fermentation technologies for the production of biofuels via 2G sugars from non-edible biomass	 	   
Biotechnology	Enzymatic production of bioplastics from non-edible biomass	 	   
Plastic recycling	Thermoplastic polymers from recycling via pyrolysis of waste plastic materials not mechanically recyclable	 	   
Sustainable agriculture	Development of industrial sludge recovery technology to be reused as soil improvers in agriculture	 	   
Circular economy	Feedstock diversification through the use of secondary and/or renewable raw materials for polymers and/or packaging production	 	   
Renewable sources	Development of chemicals from renewables such as herbicides and antimicrobials (bactericides, virucides, antifungals)	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- "Federico II" University of Naples
- "La Sapienza" University of Rome
- ALSIA
- CNR
- CSGI
- ENEA
- INSTM
- Politecnico di Milano University
- Politecnico di Torino University
- University of Bologna
- University of Modena e Reggio Emilia
- University of Padua
- University of Piemonte Orientale
- University of Warsaw, Poland

VEVY EUROPE S.p.A.

GENERAL INFORMATION

Via Semeria 16A - 16131 Genova (GE)
sito web: <http://www.vevy.com>

DETAILED INFORMATION

Dimension: SMALL COMPANY

Research expenditure (% of turnover): 3.60 %

Number of researchers:

Business sectors: Biotechnologies; Flavors and fragrances; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Products intended for use in animal feed; Surfactants and raw materials for detergents

CONTACTS

Vincenzo Paolo Maria Rialdi
secretariat@vevy.com
+39 01052251

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Ingredients

Review of existing substances, products and processes for potential reduction of environmental impact



Ingredients

New substances and new products that can be manufactured with low environmental impact



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Genova

VINAVIL S.p.A.

GENERAL INFORMATION

Viale Jenner 4 - 20159 Milano (MI)
sito web: <https://www.vinavil.com/>

Operating offices:

Villadossola
Via Toce 7 - 28844 Villadossola (VB)

Milano
Via Cafiero 22 - 20159 Milano (MI)

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 5.00 %

Number of researchers: 31

Business sectors: Adhesives and sealants; Paints and varnishes; Resins and thermoplastic systems

CONTACTS

Tito Zanetta
t.zanetta@vinavil.it
+39 3346309920

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Polymers	Binders for elastomeric paints	 	   
Polymers	Anticorrosion polymers	 	   
Polymers	Study and use of biobased monomers	 	   
Polymerization	Industrial process optimization	 	   
Polymers	Thermoplastic adhesives for UF resin substitution	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- CNR - IVALSA
- University of the Basque Country (Polymat), Spain
- University of Florence

ZAPI S.p.A.

GENERAL INFORMATION

Via Terza Strada 12 – 35026 Conselve (PD)
sito web: <http://www.zapispa.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 4.50 %

Number of researchers: 5

Business sectors: Cleaning and maintenance products - biocides; Medical surgery: disinfectants

CONTACTS

Massimo Tagliaro
massimo.tagliaro@zapi.it
+39 0499597700

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Protection

Research, study and experimentation of new sustainable solutions to protect people and the environment in which they live, from threat of pests, reducing the use of substances that are dangerous for humans, non-target organisms and environment



COLLABORATIONS WITH PUBLIC RESEARCH

- University of Camerino
 - University of Padua
-



ZSCHIMMER & SCHWARZ ITALIANA S.p.A.

GENERAL INFORMATION

Via A. Ariotto 1/C - 13083 Tricerro (VC)
sito web: <http://www.zschimmer-schwarz.com>

DETAILED INFORMATION

Dimension: LARGE COMPANY

Research expenditure (% of turnover): 1.30 %

Number of researchers: 10

Business sectors: Auxiliaries for detergents and surfactants; Ingredients for the cosmetics industry and additives for the cosmetic and pharmaceutical industry; Intermediates and specialty chemicals; Soap; Starches and derivatives; Surfactants and raw materials for detergents

CONTACTS

Fabrizio Guala
f.guala@zschimmer-schwarz.com
+39 0161808111

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

DESCRIPTION OF INDUSTRIAL RESEARCH

Biosurfactants	Development of biosurfactants from native crop waste	 	   
Sustainable processes	Reanalysis of all processes in order to improve their sustainability	 	   
Raw materials	Research of new renewable raw materials	 	   
Surfactants	Sustainable, vegetable surfactants with low environmental impact and dermocompatible. Multifunctional molecules	 	   
Synthesis	Research of new sustainable synthesis methods (green chemical/engineering principles)	 	   
Water recycling	Modifications to the water recycling and reuse system	 	   

COLLABORATIONS WITH PUBLIC RESEARCH

- University of Turin

The Italian 82 University Departments currently cens

University	Department	Place	Prov.
Alma Mater Studiorum Università di Bologna	Department of Industrial Chemistry "Toso Montanari"	Viale del Risorgimento 4 - 40136 Bologna (BO)	BOLOGNA
Alma Mater Studiorum Università di Bologna	Department of Chemistry "Giacomo Ciamician"	Via Selmi 2 - 40126 Bologna (BO)	BOLOGNA
Alma Mater Studiorum Università di Bologna	Department of Agricultural and Food Sciences (DISTAL)	Viale Giuseppe Fanin 44 - 40127 Bologna (BO)	BOLOGNA
Alma Mater Studiorum Università di Bologna	Department of Civil, Chemical, Environmental, and Materials Engineering (DICAM)	Viale Risorgimento 2 - 40136 Bologna (BO)	BOLOGNA
Ca' Foscari University Venice	Department of Molecular Sciences and Nanosystems	Via Torino 155 - 30172 Venezia (VE)	VENICE
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Institute for Chemical Physical Processes (IPCF)	Viale Ferdinando Stagno d'Alcontres 37 - 98158 Messina (ME)	MESSINA
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)	via Alfonso Corti 12 - 20133 Milano (MI)	MILAN
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Istituto di Chimica Biomolecolare (ICB)	Via Campi Flegrei 34 - 80078 Pozzuoli (NA)	NAPLES
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Institute for the Chemistry of Organometallic Compounds (ICCOM)	Via Madonna del Piano 10 - 50019 Sesto Fiorentino (FI)	FLORENCE
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Institute of Science, Technology and Sustainability for Ceramics (ISSMC)	Via Granarolo 64 - 48018 Faenza (RA)	RAVENNA
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Istituto per lo Studio dei Materiali Nanostrutturati (ISMN)	Strada Provinciale 35 d, n. 9 - 00010 Montelibretti (RM)	ROME
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Institute for Organic Synthesis and Photoreactivity (ISOF)	Via Gobetti 101 - 40129 Bologna (BO)	BOLOGNA
CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali	Institute of Crystallography (IC)	Via Amendola 122/O - 70126 Bari (BA)	BARI
National Interuniversity Consortium of Materials Science and Technology - INSTM	-	Via Giuseppe Giusti 9 - 50121 Firenze (FI)	FLORENCE
Politecnico di Milano	Department of Civil and Environmental Engineering	Piazza Leonardo da Vinci 32 - 20133 Milano (MI)	MILAN
Politecnico di Torino	Department of Applied Science and Technology (DISAT)	Corso Duca degli Abruzzi 24 - 10129 Torino (TO)	TURIN
Sapienza Università di Roma	Department of Chemistry	Piazzale Aldo Moro 5 - 00185 Roma (RM)	ROME
Scuola Normale Superiore	Faculty of Sciences	Piazza dei Cavalieri 7 - 56126 Pisa (PI)	PISA
Tecnopole of the Università di Ferrara	Terra&Acqua Tech Laboratory	Via Luigi Borsari 46 - 44121 Ferrara (FE)	FERRARA
Università degli Studi del Piemonte Orientale	Department for the Sustainable Development and Ecological Transition (DISSTE)	Piazza S. Eusebio 5 - 13100 Vercelli (VC)	VERCELLI
Università degli Studi del Piemonte Orientale	Department of Pharmaceutical Sciences (DSF)	Largo Donegani 2/3 - 28100 Novara (NO)	NOVARA
Università degli Studi del Piemonte Orientale	Department of Science and Technological Innovation	Viale T. Michel 11 - 15121 Alessandria (AL)	ALESSANDRIA
Università degli Studi della Basilicata	Department of Sciences	Viale dell'Ateneo Lucano 10 - 85100 Potenza (PZ)	POTENZA
Università degli Studi dell'Aquila	Department of Industrial and Information Engineering and Economics (DIIE)	Piazzale Ernesto Pontieri 1 - 67100 Monteluco di Roio (AQ)	L'AQUILA
Università degli Studi dell'Aquila	Department of Physical and Chemical Sciences	Via Vetoio (Coppito 1) - 67100 Coppito (AQ)	L'AQUILA
Università degli Studi dell'Insubria	Department of Theoretical and Applied Sciences (DiSTA)	Via J.H. Dunant 3 - 21100 Varese (VA)	VARESE

Università degli Studi dell'Insubria	Department of Biotechnology and Life Sciences (DBSV)	Via J.H. Dunant 3 - 21100 Varese (VA)	VARESE
Università degli Studi di Bari Aldo Moro	Department of Chemistry	Via Edoardo Orabona 4 - 70126 Bari (BA)	BARI
Università degli Studi di Brescia	Department of Civil, Environmental, Architectural Engineering and Mathematics (DICATAM)	Via Branze 43 - 25123 Brescia (BS)	BRESCIA
Università degli Studi di Brescia	Department of Information Engineering (DII)	Via Branze 38 - 25123 Brescia (BS)	BRESCIA
Università degli studi di Cagliari	Department of Chemical and Geological Sciences	SS 554 - 09042 Monserrato (CA)	CAGLIARI
Università degli Studi di Cagliari	Department of Life and Environmental Sciences	Cittadella Universitaria – 09042 Monserrato(CA)	CAGLIARI
Università degli Studi di Cagliari	Department of Mechanical and Chemical Engineering Department	Via Marengo 2 - 09123 Cagliari (CA)	CAGLIARI
Università degli Studi di Camerino	School of Pharmacy - Department of Chemistry Interdisciplinary Project (CHIP)	Via Madonna delle carceri - 62032 Camerino (MC)	MACERATA
Università degli Studi di Camerino	School of Sciences and Technology - Department of Chemistry	Via Madonna delle Carceri (ChIP) – 62032 Camerino (MC)	MACERATA
Università degli Studi di Catania	Department of Civil Engineering and Architecture	Via Santa Sofia 64 - 95125 Catania (CT)	CATANIA
Università degli Studi di Ferrara	Department of Chemical, Pharmaceutical and Agricultural Sciences	Via Luigi Borsari 46 - 44121 Ferrara (FE)	FERRARA
Università degli Studi di Ferrara	Department of Engineering	Via Giuseppe Saragat 1 - 44122 Ferrara (FE)	FERRARA
Università degli Studi di Firenze	Department of Civil and Environmental Engineering (DICEA)	Via Santa Marta 3 - 50139 Firenze (FI)	FLORENCE
Università degli Studi di Genova	Department of Chemistry and Industrial Chemistry	Via Dodecaneso 31 - 16146 Genova (GE)	GENOA
Università degli Studi di Genova	Department of Civil, Chemical and Environmental Engineering (DICCIA)	Via Montallegro 1 - 16145 Genova (GE)	GENOA
Università degli Studi di Messina	Department of Chemical, Biological, Pharmaceutical and Environmental Science	Viale F. Stagno d'Alcontres 31 – 98166 Messina (ME)	MESSINA
Università degli Studi di Messina	Department of Engineering	Contrada di Dio - 98166 Messina (ME)	MESSINA
Università degli Studi di Milano	Department of Chemistry	Via Golgi 19 - 20133 Milano (MI)	MILAN
Università degli Studi di Milano	Department of Pharmaceutical Science	Via Mangiagalli 25 - 20133 Milano (MI)	MILAN
Università degli Studi di Milano	Department of Biosciences	Via Celoria 26 - 20133 Milano (MI)	MILAN
Università degli Studi di Milano	Department of Agricultural and Environmental Sciences - Production, Territory, Agroenergy (DISAA)	Via Giovanni Celoria 2 - 20133 Milano (MI)	MILAN
Università degli Studi di Modena e Reggio Emilia	Department of Chemical and Geological Sciences	Via Campi 103 – 41125 Modena (MO)	MODENA
Università degli Studi di Napoli Federico II	Department of Pharmacy	Via Domenico Montesano 49 - 80131 Napoli (NA)	NAPLES
Università degli Studi di Napoli Federico II	Department of Chemical Sciences	Via Cintia 4 - 80126 Napoli (NA)	NAPLES
Università degli Studi di Napoli Federico II	Department of Chemical and Materials Engineering and Industrial Production	Piazzale Tecchio 80 - 80125 Napoli (NA)	NAPLES
Università degli Studi di Padova	Department of Industrial Engineering (DII)	Via Gradenigo 6/a - 35131 Padova (PD)	PADOVA
Università degli Studi di Padova	Department of Chemical Sciences	Via F. Marzolo 1 - 35131 Padova (PD)	PADOVA
Università degli Studi di Padova	Department of Pharmaceutical and Pharmacological Sciences	Via F. Marzolo 5 – 35131 Padova (PD)	PADOVA
Università degli Studi di Palermo	Department of Engineering	Viale delle Scienze, Edificio 7 – 90128 Palermo (PA)	PALERMO
Università degli Studi di Palermo	Department of Earth and Sea Sciences (DiSTeM)	Via Archirafi 22 - 90123 Palermo (PA)	PALERMO

Università degli Studi di Palermo	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STeBiCeF)	Viale delle Scienze, Ed. 16 - 90128 Palermo (PA)	PALERMO
Università degli Studi di Parma	Department of Engineering and Architecture	Parco Area della Scienze 181/A - Padiglione 10 - 43124 Parma (PR)	PARMA
Università degli Studi di Parma	Department of Food and Drug	Parco Area delle Scienze 27/a - 43124 Parma (PR)	PARMA
Università degli Studi di Parma	Department of Chemistry, Life Sciences and Environmental Sustainability	Parco Area delle Scienze 11/A - 43124 Parma (PR)	PARMA
Università degli Studi di Pavia	Department of Chemistry	Via Taramelli, 12 - 27100 Pavia (PV)	PAVIA
Università degli Studi di Pavia	Department of Biology and Biotechnology L. Spallanzani	Via Ferrata 9 - 27100 Pavia (PV)	PAVIA
Università degli Studi di Perugia	Department of Agricultural, Food and Environmental Sciences	Borgo XX giugno 74 - 06121 Perugia (PG)	PERUGIA
Università degli Studi di Perugia	Department of Chemistry, Biology and Biotechnology	Via Elce di sotto 8 - 06123 Perugia (PG)	PERUGIA
Università degli Studi di Roma "Tor Vergata"	Department of Chemical Sciences and Technologies	Via della Ricerca Scientifica 1 - 00133 Roma (RM)	ROME
Università degli Studi di Salerno	Department of Chemistry and Biology "A. Zambelli"	Via Giovanni Paolo II, 132 - 84084 Fisciano (SA)	SALERNO
Università degli Studi di Salerno	Department of Pharmacy	Via Giovanni Paolo II 132 - 84084 Fisciano (SA)	SALERNO
Università degli Studi di Sassari	Department of Agriculture	Viale Italia 39 - 07100 Sassari (SS)	CAGLIARI
Università degli Studi di Siena	Department of Biotechnology, Chemistry and Pharmacy	Via Aldo Moro 2 - 53100 Siena (SI)	SIENA
Università degli Studi di Torino	Department of Chemistry	Via Pietro Giuria 7 - 10125 Torino (TO)	TURIN
Università degli Studi di Trento	Department of Industrial Engineering	Via Sommarive 9 - 38123 Trento (TN)	TRENTO
Università degli Studi di Trieste	Department of Life Sciences	Via Weiss 2 (Palazzina Q) - 34128 Trieste (TS)	TRIESTE
Università degli Studi di Trieste	Department of Chemical and Pharmaceutical Sciences	Via Licio Giorgieri 1 - 34127 Trieste (TS)	TRIESTE
Università degli Studi di Trieste	Department of Engineering and Architecture - DIA	Via Alfonso Valerio 6/1 - 341127 Trieste (TS)	TRIESTE
Università degli Studi di Udine	Department of Agricultural, Food, Environmental and Animal Sciences	Via delle Scienze 206 - 33100 Udine (UD)	UDINE
Università degli Studi di Urbino Carlo Bo	Department of Pure and Applied Sciences	Via S. Andrea 34 - 61029 Urbino (PU)	PESARO-URBINO
Università della Calabria	Department of Chemistry and Chemical Technologies	Via P. Bucci 12/C - 87036 Rende (CS)	COSENZA
Università di Pisa	Department of Pharmacy	Via Bonanno 33 - 56126 Pisa (PI)	PISA
Università di Pisa	Department of: Chemistry and Industrial chemistry	Via Moruzzi 13 - 56124 Pisa (PI)	PISA
University of Milano - Bicocca	Department of Biotechnology and Biosciences	Piazza della Scienza 2 - 20126 Milano (MI)	MILAN
University of Milano - Bicocca	Department of Materials Science	Via Roberto Cozzi 55 - 20125 Milano (MI)	MILAN
University of Torino	Department of Life Sciences and Systems Biology	Via Accademia Albertina 13 - 10123 Torino (TO)	TURIN

How to read the data in the "Chemical Research Handbook" – Part 2

Data required to university institutions for this document includes both general information and specific information on training and patents.

There is also a section dedicated to research activities for sustainable chemistry and one dedicated to any related R&D facilities.

Institution logo

Scientific area:

-  Chemistry and material sciences
-  Biotechnologies
-  Engineering
-  Pharmacy and medicine
-  Agricultural
-  Veterinary

Participation to Federchimica's "SusChem Italy" platform



Department overview and contacts

Map

Department research activities

Other research facilities of the Department



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI CHIMICA INDUSTRIALE
"TOSO MONTANARI"

SUSCHEM^{IT}



GENERAL INFORMATION

Alma Mater Studiorum Università di Bologna Department of Industrial Chemistry "Toso Montanari"

Viale del Risorgimento 4 - 40136 Bologna (BO)

sito web: <https://industrial-chemistry.unibo.it/en/index.html>

CONTACTS

Prof. Andrea MAZZANTI

+39 0512093632

DETAILED INFORMATION

Staff: 15 Full Professors

25 Associate Professors

22 Researchers

14 Structured Technicians

11 Administrative Technicians

2 General Services

Registered students: 779 (Academic year 2022/2023)

Post Lauream Training: 74 enrolled in doctoral programs in Chemistry, Industrial Chemistry and Nanoscience for Medicine and the Environment

12 enrolled in II level Master in Composite Materials

38 Research fellows

6 fellows

Patents: 71 (2005-2022)

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Hydrogen

Development of new industrial catalytic processes at low environmental impact; study of catalysts for H₂ production



Fabrizio Cavani (+39 0512093680)

fabrizio.cavani@unibo.it

Semiconductors

Development of functional low-dimensional hybrid perovskite quantum wells for optoelectronic and photonic applications



Daniele Cortecchia (+39 3496825477)

daniele.cortecchia2@unibo.it

Fluidics

Advanced design, scale-up and optimization of process equipment by multiscale experimental and computational methods (PIV, ERT, CFD)



Giuseppina Montante (+39

0512090406)

giuseppina.montante@unibo.it

Astrochemistry

Gas-phase molecules of atmospheric and astrophysical interest, studied by high resolution infrared and millimetre-wave spectroscopy in conjunction with ab-initio calculations



Marco Garavelli (+39 0512093693)

marco.garavelli@unibo.it

Sensors

Design and characterization of advanced materials and innovative electrochemical devices to be used as sensors, catalysts, and systems for the conversion and storage of energy



Erika Scavetta (+39 0512093702)

erika.scavetta2@unibo.it

Structural analysis	Structural analysis of organic molecules by spectroscopic techniques (NMR, CD, QM, HRMS)	   	Andrea Mazzanti (+39 0512093632) <i>andrea.mazzanti@unibo.it</i>
Reactors	Dynamic MFA (Material Flow Analysis) for the estimation of stocks and flows of materials of growing industrial interest	   	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>
Sintesi asimmetrica	Sustainable catalytic methods for asymmetric synthesis based on organocatalysis and the use of light	   	Paolo Melchiorre (+390512092623) <i>p.melchiorre@unibo.it</i>
Luminescence	Luminescent metal complexes and their application in the fields of energy transition (photo-ATRP, LSC, DSSC) and Life Sciences (cellular imaging)	   	Stefano Stagni (+39 0512093721) <i>stefano.stagni@unibo.it</i>
Materials	materials derived from natural and renewable sources as carbohydrates, proteins, terpenes. Applications are in the field of organic electronics and Additive Manufacturing (3D-Printing)	   	Mauro Comes Franchini (+39 0512093631) <i>mauro.comesfranchini@unibo.it</i>
Photomaterials	Modeling and design of photo-responsive organic materials, photo-biological systems, photo-reactive molecular switches and engines, photo-catalysis and photo-reactivity in complex environments	   	Marco Garavelli (+39 0512093693) <i>marco.garavelli@unibo.it</i>
Transizione energetica	Models for integrated energy management systems for Municipal Energy Plans	   	Leonardo Setti (+39 0512093672) <i>leonardo.setti@unibo.it</i>
Polymers	Characterization and structure-properties correlations of polymeric materials	   	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>
Spettroscopia computazionale	Modeling linear and non-linear spectroscopy at different spectral regimes (IR-NIR-VIS-UV-Xray) of photo-responsive (bio)organic molecular materials in their operational environment	   	Marco Garavelli (+39 0512093693) <i>marco.garavelli@unibo.it</i>
Materials	Study of nanostructured hybrid organic-inorganic materials for protecting and modifying of materials and substrates	   	Daniele Caretti (+39 051209368) <i>daniele.caretti@unibo.it</i>
Circular economy	catalytic processes for the production of chemicals and fuels from renewable raw materials; synthesis and characterization (also in situ) of innovative catalysts	   	
Renewable energies	Flux biofuel cell 3D printed	   	Leonardo Setti (+39 0512093672) <i>leonardo.setti@unibo.it</i>
Devices	Design, synthesis and the investigation of molecular and supramolecular systems capable of performing complex, useful functions in response to external physical or chemical stimuli. The final goal is the development of molecular devices and machines and smart materials	   	Alberto Credi (+39 0516398320) <i>alberto.credi@unibo.it</i>
Circular economy	Study and optimization of polymers and additive from renewable resources	   	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>

Circular economy	Characterization of industrial waste and residues, especially containing critical elements, and development of processes aimed at their recycling	  	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>
Nanomaterials	Study and development of nanomaterials	  	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>
Metalorganic chemistry	Molecular bifunctional catalysis for energy transition and circular economy. Biomass valorization, water oxidation and hydrogen production	  	Rita Mazzoni (+39 0512093714) <i>rita.mazzoni@unibo.it</i>
Advanced materials	Synthesis, electrosynthesis and characterization of new materials such as inorganic nanoparticles, hybrid organic/inorganic materials (Metal Organic Frameworks, MOFs), conductive polymers and their applications in catalysis, environment, energy and sensoristic fields	  	Cristina Cassani (+39 0512093700) <i>maria.cassani@unibo.it</i>
Composite materials	Carbon fibre recycle for automotive. Preparation, optimization and characterization of polymer composite materials and resin	  	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>
Stoccaggio energia	Electrochemical methods and spectroscopic ones involved in the development and characterization of new electrode materials for advanced electrochemical power sources	  	Marco Giorgetti (+39 0512093666) <i>marco.giorgetti@unibo.it</i>
Renewable energies	Sodium ion battery	  	Leonardo Setti (+39 0512093672) <i>leonardo.setti@unibo.it</i>
Design	Design of Experiments (DoE) and multivariate analysis techniques applied to industrial processes and products	  	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>
Nanostructures	Chemical and electrochemical synthesis of nanostructured materials for the fabrication of heterogeneous catalysts, electronic sensors, biosensors and biomaterials	  	Barbara Ballarin (+39 0512093704) <i>barbara.ballarin@unibo.it</i>
Nanocluster	Metal carbonyl clusters and nanoclusters, molecular metal nanoparticles and their applications in the field of nanostructured molecular materials, nanoelectronic and catalysis	  	Stefano Zacchini (+39 0512093711) <i>stefano.zacchini@unibo.it</i>
Materials	Modeling of condensed phases and functionalized organic materials such as liquid and molecular crystals, organic semiconductors and soft-materials like polymers and elastomers	  	Marco Garavelli (+39 0512093693) <i>marco.garavelli@unibo.it</i>
Recycling	Chemical and/or mechanical recycle of polymers and composite materials for the recovery of secondary raw materials	  	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>
Polymers	Synthesis and characterization of conjugate polymers for photovoltaic applications	  	Elisabetta Salatelli <i>elisabetta.salatelli@unibo.it</i>
Cultural heritage	Study of the interaction between environment and materials constituting cultural and architectural assets, as well as of the efficacy and durability of protective products. Ageing and leaching tests on different materials	  	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>

Sustainability	Life Cycle Assessment applied to industrial processes, products, management systems, also aimed at certification	   	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>
Nanomedicine	Functionalization of metallic nanostructures with polyfunctional organic molecules for applications in Theranostics (Therapy+Diagnosis) in nanomedicine.	   	Mauro Comes Franchini (+39 0512093631) <i>mauro.comesfranchini@unibo.it</i>
Additive manufacturing	Development of polymeric materials or thermoplastic matrix composites by Additive Manufacturing	   	Loris Giorgini (+39 0512093688) <i>loris.giorgini@unibo.it</i>
Environmental monitoring	Sampling and analysis of air (indoor and outdoor), water and soil pollutants	   	Fabrizio Passarini (+39 0512093683) <i>fabrizio.passarini@unibo.it</i>
Tecnopolimeri	Study of memory shape polymers	   	Maurizio Toselli (+39 0512090344) <i>maurizio.toselli@unibo.it</i>

OTHER R&D ORGANIZATIONS

Center for Chemical Catalysis-C3	The Center for Chemical Catalysis "C3" has been launched in 2021 by scientists of Chemistry Department "Giacomo Ciamician" and Industrial Chemistry Department "Toso Montanari" of Alma Mater Studiorum - Università of Bologna. Currently, the roster of the C3 counts more than 100 chemists, among senior and junior researchers, with interdisciplinary expertise covering many aspects of the chemical science. In the C3 the complementary skills of two Departments will be synergistically combined to tackle the ongoing challenges for a sustainable future. The Center for Chemical Catalysis aims to become a national and international "hub" for the development and investigation of chemical catalytic processes. The main objectives of C3 are: to promote the creation of profitable scientific networks comprising academic as well as industrial partners; to consolidate technology transfer from Academia to chemical Industry; to pursue high educational trainings of early-stage chemists in the field of chemical catalysis; to foster scientific dissemination and public engagement. Contacts: Fabrizio Cavani (+39 0512093680) - fabrizio.cavani@unibo.it Web site: https://centri.unibo.it/c3/en
CERCO	CERCO, Research Center on Scientific Communication, is a center of the "Toso Montanari" Department of Industrial Chemistry, established by resolution of the Board of Directors of the University of Bologna dated 03/29/2022. The main purpose of CERCO is to be a point of connection for departmental research related to the topics of dissemination and sustainability and an opportunity to encourage interdisciplinary studies, involving researchers and scholars from all over the world and professionals in the sector. Contacts: Laura Corazza - laura.corazza@unibo.it Web site: https://centri.unibo.it/comunicazione-scientifica/it/centro
CIRI – MAM Advanced Mechanic and Materials	Inter-departmental Centre for the Industrial Research of the University of Bologna that performs activities of applied research on new materials, including polymers and composites, and on processes and technologies for different lines from the advanced mechanic to biomedical, automotive, air and sea, aerospace and, in general terms, to manufacturing Contacts: Loris Giorgini (+39 0512093688) - loris.giorgini@unibo.it Web site: https://centri.unibo.it/mam/it
CIRI FRAME – Interdepartmental Centre for Industrial Research "Renewable Sources, Environment, Sea, Energy"	The objective of the center is to promote, coordinate and carry out industrial research, dissemination and disclosure of research and technology transfer results, in close interaction with companies, in the field of raw materials and energy renewable sources; the study and protection of the environment; the study and sustainable use of the sea and coasts; the sustainability in energy production and employment; the reduction of climate-changing gas emissions, to meet the needs of the industrial world Contacts: Fabrizio Passarini (+39 0512093863) - fabrizio.passarini@unibo.it Web site: https://centri.unibo.it/frame/

COLLABORATIONS WITH COMPANIES

- Alpha Tauri
- Arpae
- BASF
- Bucci Industries
- Chiesi
- CPC group
- Dow-Chemical
- DSM
- ENEA
- Eni
- Eurocolor
- GSK
- Hera
- IFF
- Novamont
- Philip Morris
- Polynt
- Procter&Gamble
- SACMI
- Solvay
- Versalis
- Vulcanflex
- Zaitex



GENERAL INFORMATION

Alma Mater Studiorum Università di Bologna
Department of Chemistry "Giacomo Ciamician"

Via Selmi 2 - 40126 Bologna (BO)

sito web: <https://chemistry.unibo.it/en/index.html>

CONTACTS

Prof. Marco LUCARINI

+39 0512099545

DETAILED INFORMATION

Staff: 24 Full Professors

42 Associate Professors

21 Researchers

33 Structured and Administrative Technicians, Services

Registered students: 752 (Academic year 2023/2024)

Post Lauream Training: 125 enrolled in doctoral programs in Chemistry and Nanoscience

11 enrolled in II level Master in Materials and processes for the production of biomedical devices for the health sector

41 Research fellows

Patents: 100

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Sistemi fotoattivi

Photoactive System for Energy Conversion and Imaging



Paola Ceroni (+39 0512099535)
paola.ceroni@unibo.it

Nanoplastics

Fluorescent Systems for the detection of Micro- and nanoplastics



Luca Prodi (+39 0512099481)
luca.prodi@unibo.it

Sostenibilità energetica

Environmental and economical sustainability of production and end-of-life management of batteries, supercapacitors, fuel cells



Francesca Soavi (+39 0512099797)
francesca.soavi@unibo.it

Sistemi fotoattivi

Design and characterization of photochromic systems in solution and in liposomal membranes



Serena Silvi (+39 0512099463)
serena.silvi@unibo.it

Sistemi organizzati

Synthesis and characterization of supramolecular systems and materials



Stefano Masiero (+39 0512095682)
stefano.masiero@unibo.it

Spectroscopy

Use and development of spectroscopic methods and models for the characterization of molecules and molecular aggregates and the analysis of complex mixtures



Sonia Melandri (+39 0512099480)
sonia.melandri@unibo.it

Oligopeptides

Design and synthesis of peptides, oligonucleotides and their bioactive mimetics as receptor ligands or enzymatic inhibitors



Alessandra Tolomelli (+39 0512099575)
alessandra.tolomelli@unibo.it

Biomimetics	Design and development of new materials with applications as biomaterials for hard tissue replacement. Characterization of the solid state.		   	Elisa Boanini (+39 0512099548) <i>elisa.boanini@unibo.it</i>
Polymeric materials	Structure-property-processing correlation of polymers. Development of biomaterials, biobased and biodegradable polymers, functional polymers		   	Maria Letizia Focarete (+39 0512099577) <i>marialetizia.focarete@unibo.it</i>
Energy materials	Materials for energy storage and conversion systems. Electrochemical characterization of interphases, materials and devices		   	Catia Arbizzani (+39 0512099798) <i>catia.arbizzani@unibo.it</i>
Luminescent biosensors	Miniaturized luminescent analytical devices and biosensors for point-of-care/use application in clinical, agrifood and environmental fields		   	Massimo Guardigli (+39 0512099450) <i>massimo.guardigli@unibo.it</i>
Organic catalysis	Laboratory of Asymmetric Synthesis and Catalysis (LACS): Design and realization of sustainable synthetic organic methodology by means of catalytic tools.		   	Marco Bandini (+39 0512099751) <i>marco.bandini@unibo.it</i>
Chemimetry	Development of chemical analysis methods using multivariate statistical analysis and design of experiments		   	Dora Melucci (+39 0512099530) <i>dora.melucci@unibo.it</i>
Bio-nanosystems	Analytical Methods for Nano and Bioscience. Separation and dimensional, morphological and functional characterization of nano and biosystems.		   	Pierluigi Reschiglian (+39 0512099564) <i>pierluigi.reschiglian@unibo.it</i>
Molecular materials	Electrocatalysis and biosensors. Electrochemical properties of metals and nanocarbons. Electrochemiluminescence and scanning probe microscopies		   	Francesco Paolucci (+39 0512099460) <i>francesco.paolucci@unibo.it</i>
Organic materials	Solid state characterization of organic molecular material for electronic and optoelectronic: structure determination by means of X-ray diffraction (single crystal and powder), calorimetric technique.		   	Lucia Maini (+39 0512099597) <i>l.maini@unibo.it</i>
Molecular materials	Modeling functional and redox-active organic molecular materials for applications in electronics, optoelectronics and batteries		   	Fabrizia Negri (+39 0512099471) <i>fabrizia.negri@unibo.it</i>
Cultural heritage	Development of advanced analytical protocols to study artistic, historical, archaeological samples; development of advanced methods for the conservation-restoration of works of art		   	Rocco Mazzeo (+39 0512099532) <i>rocco.mazzeo@unibo.it</i>
Crystal engineering	Solid state screening of crystal forms of Active Pharmaceutical Ingredients (polymorphs, solvates, salts and cocrystals) by means of crystallographic and calorimetric methods - preparation and characterization of cocrystals and other aggregates		   	Fabrizia Grepioni (+39 0512099556) <i>fabrizia.grepioni@unibo.it</i>
Sustainable biomaterials	Advanced biomaterials from sustainable raw materials and industrial wastes for bone, osteo-cartilage tissue regeneration and wound dressing. Functionalization with active molecules and drugs		   	Silvia Panzavolta (+39 0512099566) <i>silvia.panzavolta@unibo.it</i>

Hyperspectral methods	Development and application of hyperspectral, spectroscopic methods both non destructive and microdestructive for the characterisation of materials in the environment, clinical, forensic and industrial field	  	Rocco Mazzeo (+39 0512099532) <i>rocco.mazzeo@unibo.it</i>
Organic synthesis	Design and development of new protocols and synthetic methodologies for the preparation of organic molecules having practical applications, with particular attention to sustainability and efficiency.	  	Marco Lombardo (+39 0512099544) <i>marco.lombardo@unibo.it</i>
Green pharmaceutical chemistry	Green Approach to drug discovery & Industrial pharmaceutical processes	  	Walter Cabri (+39 0512099575) <i>walter.cabri@unibo.it</i>
Portable sensors	Point of Care devices for Medical Diagnostics	  	Luca Prodi (+39 0512099481) <i>luca.prodi@unibo.it</i>
Antioxidants	Inhibition of the peroxidation of natural and synthetic materials, development of new antioxidants for food, cosmetics and plastics and organic materials	  	Luca Valgimigli (+39 0512095683) <i>luca.valgimigli@unibo.it</i>
Sustainable chemistry	Valorization of renewable sources in eco-compatible solvents to obtain chemical compounds and materials	  	Guido Galletti (+39 0512099459) <i>guido.galletti@unibo.it</i>
Environmental chemistry	Air quality (outdoor/indoor), Airborne particulate matter, Environmental impact studies (air, soil, water), Interactions between air pollution and materials, Environmental radioactivity, radioactivity in industrial processes, products and wastes	  	Laura Tositti (+39 0512099488) <i>laura.tositti@unibo.it</i>
Free radicals	Synthesis and characterization of supramolecular structures containing free radicals. Use of EPR spectroscopy for the characterization of supramolecular architectures	  	Marco Lucarini (+39 0512095691) <i>marco.lucarini@unibo.it</i>
Molecular machines	Design and characterization of artificial molecular machines	  	Serena Silvi (+39 0512099463) <i>serena.silvi@unibo.it</i>

OTHER R&D ORGANIZATIONS

Center for Chemical Catalysis-C3	The Center “C3” originates from the extensive research themes on chemical catalysis of the Department of Chemistry “Giacomo Ciamician” and the Department of Industrial Chemistry “Toso Montanari” of Alma Mater Studiorum Università di Bologna. The center is characterized by interdisciplinary expertise (electro and photo-catalysis asymmetric catalysis, biocatalysis, homogenous and heterogeneous catalysis and computational investigations related to catalytic transformations) that aim to address scientific challenges related to chemical sustainability at national as well as international level Contacts: Marco Bandini (Co-Director) (+39 0512099751) - marco.bandini@unibo.it Web site: https://centri.unibo.it/c3/en
CIRI - Aerospace	Interdepartmental Center for Industrial Research of the University of Bologna, which works in the fields of aeronautics, aerospace, metropolitan mobility, energy systems, advanced materials and mechanical systems, sensors technologies, nautical and ground transportation Contacts: Sonia Melandri (+39 0512099480) - sonia.melandri@unibo.it Luca Evangelisti (+39 0512099500) - luca.evangelisti6@unibo.it Assimo Maris (+39 0512099502) - assimo.maris@unibo.it Mara Mirasoli (+39 0512099533) - mara.mirasoli@unibo.it Web site: https://centri.unibo.it/aerospace/en

CIRI – Agrifood	Interdepartmental Center for Industrial Research of the University of Bologna for industrial agri-food research. The activity of the agri-food CIRI is directed towards two research areas: "Process area, food, consumption and health" and "Bioanalytical Area, bioactivity, microbiology and valorization of microorganisms for industrial purposes". The research focuses on improving the shelf - life, process optimization, quality control techniques, traceability and safety, on the packaging of food products and on the development of new functional foods and nutraceuticals Contacts: Martina Zangheri (+39 0541/21847) - martina.zangheri2@unibo.it Sonia Melandri (+39 0512099480) - sonia.melandri@unibo.it Dora Melucci (+39 0512099530) - dora.melucci@unibo.it Web site: https://centri.unibo.it/agroalimentare/it
CIRI - Renewable Sources, Environment, Sea and Energy	Interdepartmental Research Center for Energy and the Environment. Develops applied research activities of industrial interest for the entire sector of the energy supply chain, optimization of production processes and human activities, waste management, renewable sources Contacts: Emilio Tagliavini (+39 0512099526) - emilio.tagliavini@unibo.it Paola Galletti (+39 0512099515) - paola.galletti@unibo.it Daniele Fabbri (+39 0541 434486) - dani.fabbri@unibo.it Cristian Torri (+39 0544 937351) - cristian.torri@unibo.it Web site: https://centri.unibo.it/frame/it
CIRI - Advanced Applications in Mechanical Engineering and Materials Technology	Interdepartmental Center for Industrial Research of the University of Bologna, which works in the field of advanced applications in mechanical engineering and materials technology Contacts: Claudia Tomasini (+39 0512099486) - claudia.tomasini@unibo.it Chiara Gualandi (+39 0512099572) - c.gualandi@unibo.it Web site: http://www.mam.unibo.it/it/meccanica-avanzata-e-materiali
CIRI - Health Sciences & Technologies	The Health Sciences & Technologies CIRI brings together biomedical and technological knowledge that covers the whole range of research and development, from the laboratory bench to the bed and the patient's home Contacts: Luca Prodi (+39 0512099481) - luca.prodi@unibo.it Maria Letizia Focarete (+39 0512099577) - marialetizia.focarete@unibo.it Web site: http://www.tecnologie-salute.unibo.it/

COLLABORATIONS WITH COMPANIES

- Alfasigma S.p.A.
- B-PLAS sbri
- BASF Italia S.p.A.
- BIONIKS S.R.L.
- DAVINES SPA
- CHEMESENTIA SRL
- Dompé Farmaceutici SpA
- ECOMAVI SRL UNIPERSONALE
- FERRARI SPA
- FINCERAMICA FAENZA S.p.A
- GLUETON SRL
- INTERTEK ITALIA SPA
- NEWCHEM S.p.A.
- PERSONAL GENOMICS SRL
- POLYCRYSTALLINE SPA
- SAATI S.P.A.
- SACMI Imola S.C.
- SCUDERIA ALPHATAURI S.P.A.

PUBBLICAZIONI

- A. Zanut et al. **"Insights into the mechanism of coreactant electrochemiluminescence facilitating enhanced bioanalytical performance"** Nature Communications volume 11, Article number: 2668 (2020)
- M. Monari et al. **"Structure and Thermal Stability of Two Estetrol Solvates"** Crystals 2023, 13(8), 1211
- L. Ferrazzano et al. **"Sustainability in peptide chemistry: current synthesis and purification technologies and future challenges."** Green Chemistry 2022, 24,975
- T. Fantoni et al. **"Palladium catalyst recycling for Heck-Cassar-Sonogashira cross coupling reactions in the green N-hydroxyethyl pyrrolidone/water/N,N,N',N'-tetramethyl guanidine blend."** ChemSusChem 2021, 14, 2591–2600
- L. Dall'Olio et al. **"Direct Derivation of the Crystalline Fraction of Highly Potent Active Pharmaceutical Ingredients by X-Ray Powder Diffraction"** Eur. J. Pharm. Sci. 2021, 159, 105692
- V. Marassi et al. **"FFF-based high-throughput sequence shortlisting to support the development of aptamer-based analytical strategies"** Analytical and Bioanalytical Chemistry (2022) 414 (18), pp. 5519 – 5527
- V. Marassi et al. **"An ultracentrifugation – hollow-fiber flow field-flow fractionation orthogonal approach for the purification and mapping of extracellular vesicle subtypes"** (2021) Journal of Chromatography A, 1638, art. no. 461861.

MORE INFO

In the laboratories, in addition to research and teaching activities, experimental activities are carried out relating to consultancy and agreements that the Department stipulates with Companies, Public Bodies and other clients. - <https://chimica.unibo.it/it/terza-missione/servizi-alle-imprese>

GENERAL INFORMATION

Alma Mater Studiorum Università di Bologna Department of Agricultural and Food Sciences (DISTAL)

Viale Giuseppe Fanin 44 - 40127 Bologna (BO)

sito web: <https://distal.unibo.it/en/index.html>

CONTACTS

Prof.ssa Rosalba LANCIOTTI

+39 0512096691

DETAILED INFORMATION

Staff: 40 Full Professors

74 Associate Professors

52 Researchers

69 Structured Technicians

53 Administrative Technicians

4 General Services

Registered students: 2,255 (Academic year 2022/2023)

Post Lauream Training: 124 enrolled in doctoral programs in Agricultural, Environmental and Food Science and Technology

11 enrolled in doctoral programs in Health, Safety and Green Systems

3 enrolled in doctoral program in Future Earth, Climate Change and Societal Challenges

2 enrolled in doctoral program in Innovative Technologies and Sustainable Use of Mediterranean Sea Fishery and Biological Resources

99 Research fellows

28 fellows

Patents: 53

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

 PROCESSES

 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

R&D ACTIVITIES DETAIL

Bioactivity

Bioactivity of proteins, protein hydrolysates and peptides
(from food, by-products or industrial waste)



Elena Babini (+39 0547338159)
elena.babini@unibo.it

By-products reuse

Reuse of agro-industrial by-products in agriculture for
soil fertility



Luciano Cavani (+39 0512096360)
luciano.cavani@unibo.it

Plant protection

Defense and control of the adversities of plants, products
and foodstuffs



Claudio Ratti (+39 0512096733)
claudio.ratti@unibo.it

Photochemistry

Study of the interaction between light and chemicals
Study of chemical species and nano-structured
luminescent and / or photo-reactive materials



Massimo Baroncini (+39 0516398325)
massimo.baroncini@unibo.it

Organic substance

Evaluations of organic matter, carbon and nutrients
stocks in agricultural and forestry soils



Claudio Marzadori (+39 0512096211)
claudio.marzadori@unibo.it

Sistemi biologici

Analysis of the three-dimensional structure of complex
biological systems and evaluation of the impact of
exposure to chemicals using metabolomics indicators



Francesco Capozzi (+39 0547338104)
francesco.capozzi@unibo.it

Biotechnology	Biotechnological approaches for the enhancement of agro-industrial by-products and wastewaters	 	   	Rosalba Lanciotti (+39 0547338132) <i>rosalba.lanciotti@unibo.it</i>
Chemical impact	Assessment of the impact of exposure to chemicals in biological systems by using metabolomics indicators	 	   	Francesco Capozzi (+39 0547338104) <i>francesco.capozzi@unibo.it</i>
Non-food crops	Non-food crops for the bio-based industry, green chemistry and bio-fuel production	 	   	Andrea Monti (+39 0512096653) <i>a.monti@unibo.it</i>
Antibiotics	Antibiotic abatement and antibiotic resistance in livestock wastewaters and wastewaters	 	   	Ilaria Braschi (+39 0512096208) <i>ilaria.braschi@unibo.it</i>
Waste water	Precision irrigation, treatment and reuse of waste water	 	   	Attilio Toscano (+39 0512096179) <i>attilio.toscano@unibo.it</i>
Soil fertility	Soil fertility and plant nutrition	 	   	Claudio Ciavatta (+39 0512096201) <i>claudio.ciavatta@unibo.it</i>
Irrigated water	Sustainable management of water resources in agriculture	 	   	Brunella Morandi (+39 0512096428) <i>brunella.morandi@unibo.it</i>

OTHER R&D ORGANIZATIONS

Center for Light Activated Nanostructures - CLAN

Contacts: Massimo Baroncini (+39 0516398325) - massimo.baroncini@unibo.it
Web site: <https://centri.unibo.it/clan/en>

Interdepartmental Centre for Agri-food industrial Research

Contacts: Francesco Capozzi (+39 0547 338104) - ciriagro.cirifood@unibo.it
Web site: <http://www.agroalimentare.unibo.it/>

COLLABORATIONS WITH COMPANIES

- AEB group
- Agrosistemi
- Allvineyard
- Amadori SpA
- ANBI ER
- Apicoltori Felsinei Le nostre api
- Barilla
- BeeBo
- Bestack
- BIOMAN SpA
- BIORENOVA SpA
- Bonifiche Ferraresi
- CAB Massari
- Caffè concerto
- Caseificio Mambelli
- CEFLA -Imola
- Clai S.c.a.
- CNH Industrial
- CON_AMI
- Consorzio Bestack
- Consorzio Biorepack
- Consorzio Cuoidepur SpA
- Consorzio Italiano Compostatori
- Consorzio Vini di Romagna
- DEPOFARMA
- Fattorie Rabboni e Zanetti
- Fertilizzanti Certaldo Srl
- FOMET SpA
- Gruppo Amadori
- Herambiente SpA
- Idea Verde srl
- ILSA-Huber
- Legacoop Bologna
- Mace fruit
- MARR SpA
- Martini Alimentare Srl
- Novamont SpA
- Organazoto Fertilizzanti SpA
- Organizzazione Produzione Allevatori Suini
- Orogel
- PROBIOTICAL
- Rossovivo
- S.E.S.A. Spa
- Sacmi - Imola
- Salumificio Dalvecchio
- SCAM SpA
- Steroglass
- Unigrà

PUBBLICAZIONI

- Baghdadi A., Della Lucia M.C., Borella M., Monti A., Mangione, F. (2022). **A dual-omics approach for profiling plant responses to biostimulant applications under controlled and field conditions.** *Frontiers in Plant Science*, 13: 983772
- Bortolotti G., Mengoli D., Piani M., Grappadelli L.C., Manfrini L. (2022). **A computer vision system for in-field quality evaluation: preliminary results on peach fruit.** *IEEE Workshop on Metrology for Agriculture and Forestry (MetroAgriFor)*, Perugia, Italy, 2022, pp. 180-185, doi: 10.1109/MetroAgriFor55389.2022.9965022
- Di Francesco, A., Di Foggia, M., Baldo, D., Ratti C., Baraldi E. (2022). **Preliminary results on *Cadophora luteo-olivacea* pathogenicity aspects on kiwifruit.** *Eur. J. Plant Pathol.* 163: 997-1001. <https://doi.org/10.1007/s10658-022-02518-6>
- Gottardi D., Ciccone M., Siroli L., Lanciotti R., Patrignani F. (2022). **Use of *Yarrowia lipolytica* to Obtain Fish Waste Functional Hydrolysates Rich in Flavoring Compounds,** *Fermentation*, <https://doi.org/10.3390/fermentation8120708>
- Fasolino N.G., Zavalloni M., Viaggi D. (2022). **The role of collaboration and entrepreneurship in strengthening the participation of primary producers in the bioeconomy in (2022).** *Agricultural Bioeconomy: Innovation and Foresight in the Post-COVID Era*, pp. 231-244. DOI: 10.1016/B978-0-323-90569-5.00013-5
- Mahboubi M., Talebi R., Mehrabi R., Mohammad Naji A., Maccaferri M., Kema G.H. (2022). **Genetic analysis of novel resistance sources and genome-wide association mapping identified novel QTLs for resistance to *Zymoseptoria tritici*, the causal agent of septoria tritici blotch in wheat.** *Journal of Applied Genetics*, 63(3): 429-445
- Mazzon M., Gioacchini P., Montecchio D., Rapisarda S., Ciavatta C., Marzadori C. (2022). **Biodegradable plastics: effects on functionality and fertility of two different soils.** *Applied Soil Ecology* 169: 104216. <https://doi.org/10.1016/j.apsoil.2021.104216>.



GENERAL INFORMATION

Alma Mater Studiorum Università di Bologna
Department of Civil, Chemical, Environmental, and Materials Engineering (DICAM)
 Viale Risorgimento 2 - 40136 Bologna (BO)
 sito web: <http://www.dicam.unibo.it/en>

CONTACTS

Prof. Valerio COZZANI
 +39 0512090240

DETAILED INFORMATION

Staff: 37 Full Professors

53 Associate Professors

40 Researchers

25 Technologists

6 Structured Technicians

16 Administrative Technicians

6 General Services

Registered students: 2,575 (Academic year: 2023/2024)

Post Lauream Training: 140 enrolled in doctoral programs

10 enrolled in II level Master in Sustainable and integrated Mobility in Urban Regions

10 enrolled in II level Master in Impresa e Tecnologia Ceramica

52 Research fellows

Patents: 14 <https://dicam.unibo.it/it/con-societa-e-impresa/brevetti>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Materiali ceramici

Durability: corrosion and protection of metals and ceramic materials. Alkali activated materials



Maria Bignozzi (+39 0512090342)
maria.bignozzi@unibo.it

Termodinamica

Thermodynamic and transport properties in polymeric systems. Gas phase membrane separation systems



Ferruccio Doghieri (+39 0512090269)
ferruccio.doghieri@unibo.it

Ultrafiltrazione

Liquid-liquid separation systems (nanofiltration, reverse osmosis, electrodialysis, membrane contactors, membrane reactors)



Serena Bandini (+39 0512090231)
serena.bandini@unibo.it

LCA

Environmental sustainability and life cycle assessment of chemical processes and supply chains in the chemical industry. Technologies for acid gas removal and carbon capture and sequestration



Alessandro Dal Pozzo (+39 0152090235)
a.dalpozzo@unibo.it

Polymers

Synthesis and characterization of eco-friendly polymers. Design and preparation of materials with useful properties for specific applications



Andrea Munari (+39 0512090345)
andrea.munari@unibo.it

Polymeric materials

Materials for advanced applications and industrial engineering: bioplastics, biomedical materials, polymers, biopolymers, and advanced composite materials



Paola Fabbri (+39 0512090364)
p.fabbri@unibo.it

Membranes	Separation of biomolecules using chromatographic techniques and/or membrane processes			Cristiana Boi (+39 0512090432) <i>cristiana.boi@unibo.it</i>
Hydrogen	Comparative analysis of technological systems for the energy supply integrated with the development of suitable models for the characterization of reactive systems.			Gianmaria Pio (+39 0512090284) <i>gianmaria.pio@unibo.it</i>
Plant security	Quantitative risk assessment of industrial sites exposed to natural events and dealing with hydrogen			Federica Ricci (+39 0512090253) <i>federica.ricci18@unibo.it</i>
Biomass	Development of methodologies, models and tools aimed at the analysis and assessment of: biomass treatment (including bioprocesses); bioremediation; wastewater treatment; biochemical from biomass waste; biofuels; flue gas treatment; sanitary risk assessment			Dario Frascari (+39 0512090416) <i>dario.frascari@unibo.it</i>
Food safety	Food risk assessment (chemical, microbiological, emerging), optimization of innovative processes for food preservation, and the development of new ingredients and materials			Alessandro Zambon (+39 0512090273) <i>alessandro.zambon2@unibo.it</i>
Membranes	Mass transport properties of gases and vapors in polymers, membrane separation and barrier applications (eg. packaging)			Matteo Minelli (+39 0512090426) <i>matteo.minelli@unibo.it</i>
Biotechnology	Environmental and industrial biotechnologies. Wastewater treatment			Fabio Fava (+39 0512090330) <i>fabio.fava@unibo.it</i>
Sicurezza processo	CFD numerical simulation of the behaviour of process industry equipment under fire exposure			Giordano Emrys Scarponi (+39 0512090250) <i>giordano.scarponi@unibo.it</i>
Plant security	Process safety. Domino effects and natural hazards triggering technological scenarios (NaTech). Quantitative Risk Assessment (QRA). Safety of technologies for energy transition, decarbonization, and CCUS			Valerio Cozzani (+39 0512090240) <i>valerio.cozzani@unibo.it</i>
Big data	Big data in the chemical and process industry			Giacomo Antonioni (+39 0512090230) <i>giacomo.antonioni3@unibo.it</i>
Plant security	Environmental sustainability assessment and process intensification. Inherent safety			Alessandro Tugnoli (+39 0512090283) <i>a.tugnoli@unibo.it</i>
Cybersecurity	Cybersecurity of industrial plants handling hazardous materials			Matteo Iaiani (+39 0512090248) <i>matteo.iaiani@unibo.it</i>
Plant security	Security for chemical and process industry. Improvised explosive devices (IED). Combustion, deflagration, and detonation			Ernesto Salzano (+39 0512090255) <i>ernesto.salzano@unibo.it</i>
Big data	Molecular understanding of cellular processes from biological big data			Camilla Luni (+39 3494239272) <i>camilla.luni@unibo.it</i>

OTHER R&D ORGANIZATIONS

Italian Ceramic Centre	The Italian Ceramic Centre carries out research and testing for the Ceramics Industry. It is based on the cooperation among Enterprises, Territory and University. The multiplicity of technical-scientific skills and of laboratory instruments allows to solve technical and technological problems at small, medium and large scale and, at the same time, to carry out research activities in different fields, even if the ceramic sector remains the core business Contacts: Maria Bignozzi - maria.bignozzi@unibo.it Web site: http://www.centroceramico.it
The Centre of Research on the Identification of Materials and Structures - CIMEST	CIMEST aims at promoting research on the basic and practical questions of inverse problems, in in the research fields of Identification, Diagnostics and Structural Strengthening, also serving as support to the solution of problems of civil society Contacts: Stefano De Miranda - stefano.demiranda@unibo.it
Interdepartmental Centre for Industrial Aerospace Research - CIRI Aerospace	CIRI Aerospace is the Interdepartmental Center for Industrial Research of the University of Bologna, which works in the fields of aeronautics, aerospace, metropolitan mobility, energy systems, advanced materials and mechanical systems, sensors technologies, nautical and ground transportation Contacts: Paolo Tortora - paolo.tortora@unibo.it Web site: https://centri.unibo.it/aerospace/en
Interdepartmental Centre for Industrial Agrofood Research - CIRI Agrofood	CIRI - Agrifood belongs to the University of Bologna and has the aim of reinforcing the relation between industry and research centre, promoting the technological transfer in order to meet the needs of the productive sector Contacts: Francesco Capozzi - francesco.capozzi@unibo.it Web site: https://centri.unibo.it/agroalimentare/it
Interdepartmental Centre for Industrial Research in Health Sciences and Technologies - CIRI Health Sciences and Technologies	The Health Sciences & Technologies (HST) CIRI brings together biomedical and technological knowledge that covers the whole range of research and development, from the laboratory bench to the bed and the patient's home Contacts: Monica Forni - monica.forni@unibo.it Web site: https://centri.unibo.it/tecnologie-salute/it/
Interdepartmental Centre for Industrial ICT Research - CIRI ICT	The CIRI ICT research personnel holds strong background and outstanding expertise in several aspects of the ICT field, with a special focus on green ICT and ICT for sustainable development Contacts: Luca Foschini - luca.foschini@unibo.it Web site: https://centri.unibo.it/ict-tecnologie-informazione/it
InterdepartmentCentre for Industrial Research in Building and Construction - CIRI Building and Construction	The Interdepartmental Centre for Applied Research on Buildings and Construction (CIRI-EC) promotes research co-operation and innovation within industries and small/medium enterprises by means of technological support, knowledge transfer and business development. Applied research on buildings and construction technologies is the CIRI-EC mission Contacts: Marco Savoia - marco.savoia@unibo.it Web site: https://centri.unibo.it/edilizia-costruzioni/it
Interdepartmental Centre for Industrial Research in Advanced Mechanical Engineering Applications and Materials Technology - CIRI Advanced Mechanics and Materials	CIRI MAM is the Interdepartmental Center for Industrial Research of the University of Bologna, which works in the filed of advanced applications in mechanical engineering and materials technology Contacts: Dario Croccolo - dario.croccolo@unibo.it Web site: https://centri.unibo.it/mam/it
Research Centre of Applied Mathematics - CIRAM	CIRAM works in the field of applied mathematics and, in particular, on the development of new teaching methodologies by the implementation of original mathematical software Contacts: Tommaso Ruggeri - tommaso.ruggeri@unibo.it
Center for Off-shore and Marine Systems Engineering - COMSE	The main aim of COSME is to promote and develop activities related to the design and management of marine and offshore systems, the study of marine environment and the sustainable exploitation and management of offshore resources Contacts: Renata Archetti - renata.archetti@unibo.it

**Centre for International
Cooperation and Development on
the thematic areas of Engineering,
Environment and Emergency –
CODE³**

The Center aims at coordinating and promoting the organization of scientific and training initiatives, information and awareness campaigns on issues that are relevant to development in emerging countries, information exchanges between Italian and foreign institutions and research centers in all fields of Civil, Environmental and Materials Engineering

Contacts: Renata Archetti - renata.archetti@unibo.it
Maurizio Barbarella - maurizio.barbarella@unibo.it
Andrea Benedetti - andrea.benedetti@unibo.it
Maria Bignozzi - maria.bignozzi@unibo.it
Gabriele Bitelli - gabriele.bitelli@unibo.it
Alessandra Bonoli - alessandra.bonoli@unibo.it
Attilio Castellarin - attilio.castellarin@unibo.it
Vittorio Di Federico - vittorio.difederico@unibo.it
Massimo Guerrero - massimo.guerrero@unibo.it
Claudio Mazzotti - claudio.mazzotti@unibo.it
Noura Raddadi - noura.raddadi@unibo.it
Elena Toth - elena.toth@unibo.it
Luca Vittuari - luca.vittuari@unibo.it
Antonio Zanutta - antonio.zanutta@unibo.it

**Interdepartmental Centre for
Industrial Research in Renewable
Resources, Environment, Sea and
Energy – CIRI Renewable
Resources, Environment, Sea and
Energy – FRAME**

This Interdepartmental Centre is aimed at technological research in the fields of Renewable Sources and Sustainability, Marine Resources and Blue Growth, and Technologies for Energy and Environment

Contacts: Francesco Basile - f.basile@unibo.it
Web site: <https://centri.unibo.it/frame/it>

Osservatorio Claudio Ceccoli

This Research Centre focuses on the observation of vices and defects of the subject of the dispute in subcontracting and commerce, with the aim of creating an integrated and organized knowledge on this topic

Contacts: Tomaso Trombetti - tomaso.trombetti@unibo.it

COLLABORATIONS WITH COMPANIES

- BASF Italia S.p.A.
- Eni S.p.A.
- GlaxoSmithKline S.p.A.
- Herambiente Servizi Industriali S.r.l.
- IMA group
- NEST Consulting S.r.l.
- Nuovo Pignone Tecnologie S.r.l.
- Rina Consulting S.r.l.
- SACMI Imola S.C
- Snam S.p.A.
- Versalis S.p.A.

PUBBLICAZIONI

<https://dicam.unibo.it/it/ricerca/pubblicazioni-scientifiche>



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali

Institute for Chemical Physical Processes (IPCF)

Viale Ferdinando Stagno d'Alcontres 37 - 98158 Messina (ME)

sito web: <http://www.ipcf.cnr.it/en/>

CONTACTS

Dott. Onofrio M. MARAGÒ

+39 09039762200

DETAILED INFORMATION

Staff:

45 Researchers

2 Technologists

14 Structured Technicians

10 Administrative Technicians

Registered students:

Post Lauream Training: 20 Research fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Cultural heritage

Diagnostic and sensors for cultural heritage



Rosina Celeste Ponterio (+39 09039762201)
ponterio@ipcf.cnr.it

Life science

Solution NMR spectroscopy for the investigation of molecular recognition phenomena



Federica Aiello (+39 0503152244)
federica.aiello@pi.ipcf.cnr.it

Green chemistry

Multi-scale modeling of (metal-free) carbon-based materials for catalytic applications; depolymerization processes of lignin materials



Giovanni Barcaro (+39 0503152455)
giovanni.barcaro@pi.ipcf.cnr.it

Energy

Spectroscopic characterization and stability profiling of materials for photovoltaic applications



Federica Aiello (+39 0503152244)
federica.aiello@pi.ipcf.cnr.it

Green chemistry

Development of effective agro-food waste adsorbent materials for the removal of wastewater contaminants



Paola Fini (+39 0805442226)
p.fini@ba.ipcf.cnr.it

Advanced materials

Development of 2D materials for advanced sensor applications



Pietro Gucciardi (+39 09039762248)
gucciardi@ipcf.cnr.it

Energy

Design, synthesis and characterization of di nanomaterials, hybrid systems and nanocomposites for energy conversion



Marinella Striccoli (+39 08054420279)
m.striccoli@ba.ipcf.cnr.it

Advanced materials	Spectroscopy on nanostructured systems and hybrid nanocomposites	 	Valentina Villari (+39 09039762219) <i>villari@ipcf.cnr.it</i>
Advanced materials	Development of noble metal nanostructured thin films for SERS sensing applications	 	Sebastiano Trusso (+39 09039762210) <i>sebastiano.trusso@cnr.it</i>
Advanced materials	Synthesis and characterization of oxide, perovskite and semiconductor nanocrystals, plasmonic and magnetic nanoparticles and luminescent carbon dots	 	Marinella Striccoli (+39 08054420279) <i>m.striccoli@ba.ipcf.cnr.it</i>
Advanced materials	Synthesis of hybrid nanocomposites based on graphene derivatives and inorganic colloidal nanoparticles (NPs) for the detection of pollutants in water resources, additives in food and disease biomarkers in human samples	 	Chiara Ingrosso (+39 0805442027) <i>c.ingrosso@ba.ipcf.cnr.it</i>
Energy	Multi-scale modeling of high-efficiency catalysts for fuel cells	 	Giovanni Barcaro (+39 0503152455) <i>giovanni.barcaro@pi.ipcf.cnr.it</i>
Life science	Optical nanospectroscopies and nanoimaging for ultrasensitive detection of biomolecules	 	Pietro Gucciardi (+39 09039762248) <i>gucciardi@ipcf.cnr.it</i>
Energy	Biohydrogen production via the use of photosynthetic microorganisms in fresh and salty waters	 	Massimo Trotta (+39 0805442027) <i>massimo.trotta@cnr.it</i>
Advanced materials	Development of photoactive (nano) materials for the abatement of organic pollutants and pathogenic microorganisms (viruses and bacteria) in water, air and surfaces	 	Roberto Comparelli (+39 0805442027) <i>roberto.comparelli@cnr.it</i>
Life science	Design, realization and study of artificial and physiological nanovectors for treatment of cancer and neurological disorders	 	Nicoletta Depalo (Nicoletta Depalo) <i>n.depalo@ba.ipcf.cnr.it</i>
Green chemistry	Bioplastics: properties in the lifetime and biodegradation	 	Maria Cristina Righetti (+39 0503152068) <i>cristina.righetti@pi.ipcf.cnr.it</i>
Green chemistry	Valorization of biomasses in preparation according to Eco-design strategy and characterization of the behaviour of bioplastics in natural environments	 	Simona Bronco (+39 0503152519) <i>simona.bronco@pi.ipcf.cnr.it</i>
Green chemistry	Bioremediation of water basins and soil polluted with heavy metals via photosynthetic bacteria	 	Massimo Trotta (+39 0805442027) <i>massimo.trotta@cnr.it</i>
Life science	Multiscale modeling of nanostructured materials to be used as drug-delivery devices in cancer therapy	 	Giovanni Barcaro (+39 0503152455) <i>giovanni.barcaro@pi.ipcf.cnr.it</i>
Cultural heritage	Development of self-cleaning photocatalytic coatings for the protection and conservation of cultural heritage	 	Roberto Comparelli (+39 0805442027) <i>roberto.comparelli@cnr.it</i>

OTHER R&D ORGANIZATIONS

Ar3Digilab

The laboratory is equipped with instrumentation for the 3D reconstruction in the cultural heritage field
Contacts: Rosina Celeste Ponterio (+39 09039762201)

Electron Microscopy Lab	Facilities (TEM and SEM FEG equipped with EDX) for imaging, morphological and chemical characterization of materials, thin films and nanostructures at nano and micro scale Contacts: Roberto Comparelli (+39 0805442027) - roberto.comparelli@cnr.it
Laser Ablation Lab	The laboratory is equipped with a system for the preparation of nanostructured materials by laser ablation Contacts: Sebastiano Trusso (+39 09039762210)
High-performance computing center - Molecular Modelling Team MMT@CNR.PI	The laboratory is equipped with server/computing nodes, ethernet/infiniband switches and storage disks to perform high-performance multiscale modeling on a variety of systems of chemical and physical interest for the research activities of the Institute Contacts: Giovanni Barcaro (+39 0503152455) - giovanni.barcaro@pi.ipcf.cnr.it Luca Sementa (+39 0503152263) - luca.sementa@pi.ipcf.cnr.it Giuseppe Annino (+39 0503152249) - giuseppe.annino@pi.ipcf.cnr.it
Lab for physical and chemical characterization of nanomaterials and thin films	The laboratory is equipped with instrumentation for the optical and chemical-physical characterization (UV-Vis Abs, stationary and time resolved PL, absolute QY, FTIR, AFM, etc.) of nanoparticles, nanocomposites, hybrid materials and thin films Contacts: Marinella Striccoli (+39 08054420279) - m.striccoli@ba.ipcf.cnr.it
NanoLab	The laboratory is equipped with optical tweezer for the manipulation of micro- and nanomaterials Contacts: Onofrio Maragò (+39 0909762249)
Lab for the synthesis and characterization of polymer materials for functional applications and high performances	Contacts: Simona Bronco (+39 0503152519) - simona.bronco@pi.ipcf.cnr.it
Photocatalysis Lab: investigation of the photocatalytic properties of structured (nano)materials	The laboratory carries out photocatalytic tests with UV light or simulated sunlight on (nano) catalysts for applications in water purification (model dyes, pesticides, antibiotics), air (NO _x abatement), and for the abatement of pathogenic microorganisms in class I (e.g. E. coli, Enterococcus hirae, Bacillus Cereus, Candida Albicans) Contacts: Roberto Comparelli (+39 0805442027) - roberto.comparelli@cnr.it



ISTITUTO DI SCIENZE E TECNOLOGIE CHIMICHE GIULIO NATTA

SUSCHEM^{IT}



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)

via Alfonso Corti 12 - 20133 Milano (MI)

sito web: <http://www.scitec.cnr.it/en/>

CONTACTS

Dott. Salvatore IANNACE

+39 0223699476

DETAILED INFORMATION

Staff: 91 Researchers

18 Technologists

8 Structured Technicians

11 Administrative Technicians

Registered students:

Post Lauream Training: 30 Research fellows

Patents: 85

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Lignocellulose

Valorization of biomass through enzymatic processes



Gianluca Ottolina (+39 0228500021)
gianluca.ottolina@scitec.cnr.it

Biopolymers

Synthesis, characterization and processing technologies of polymers and composites from renewable resources



Fabio Bertini (+39 0223699356)
bertini@scitec.cnr.it

Hydrogen

Development of materials for hydrogen production (Steam Reforming; photo(electro)chemical splitting of water; alkaline electrolysis); photocatalysis



Vladimiro Dal Santo (+39 0250314401)
vladimiro.dalsanto@scitec.cnr.it

Functional polymers

Synthesis and characterization of functional polymers obtained with novel catalysts based on organometallic complexes



Giovanni Ricci (+39 0223699376)
ricci@scitec.cnr.it

Pollution

Solid inorganic catalysts for sustainable and selective oxidation of high added value chemicals; systems for decontamination of highly toxic and pollutant substances



Matteo Guidotti (+39 0250314428)
matteo.guidotti@scitec.cnr.it

Photovoltaic

Computational and synthetic methods for materials and devices for solar cells (perovskites, hybrids, organic)



Chiara Botta (+39 0223699734)
chiara.botta@scitec.cnr.it

Energy conversion

Design and synthesis of organic and organometallic compounds and their integration in energy conversion/storage devices



Gianluca Pozzi (+39 0223699361)
gianluca.pozzi@scitec.cnr.it

Health	Computational and omics-driven drug discovery, bioactive compounds, technologies for precision medicine, structure–function elucidation	  	Marina Cretich (+39 0228500042) <i>marina.cretich@cnr.it</i>
Biocatalysis	Enzymatic catalysis in organic solvents, synthesis of aroma and fragrance, industrial use of enzymes (textile, tanning, detergency etc)	  	Sergio Riva (+39 0228500025) <i>sergio.riva@scitec.cnr.it</i>
Cultural heritage	Non-invasive methodologies for the study of the degradation phenomena of materials in art works aimed at their conservation and protection	  	Laura Cartechini (+39 0755855645) <i>laura.cartechini@cnr.it</i>
Biophysic methodologies	Biophysic based methodologies for the advanced structural characterization of macromolecules and metabolites from renewable resources	  	Roberto Consonni (+39 0223699578) <i>consonni@scitec.cnr.it</i>
Recycling	Reconversion of (bio)plastics into monomers, oligomers, intermediates, and new materials with by using biocatalysis and chemical catalysis	  	Sergio Riva (+39 0228500025) <i>sergio.riva@scitec.cnr.it</i>
Biomass	Heterogeneous catalysis for biomass and agroindustrial wastes valorisation (oils and fats, oligosaccharidic fractions, lignocellulosic derived materials)	  	Federica Zaccheria (+39 0250314384) <i>federica.zaccheria@scitec.cnr.it</i>

OTHER R&D ORGANIZATIONS

NMR Laboratory	A series of advanced NMR equipment Contacts: Roberto Consonni - roberto.consonni@scitec.cnr.it
ISTeM – TEM and Nanotechnology LABS	Laboratory for TEM, characterization and synthesis for nanotechnologies Contacts: istem@scitec.cnr.it +39 0250995632 Web site: http://istemlab.scitec.cnr.it
LabCAT – Catalysis Lab	R&D lab for development of innovative heterogeneous catalysts for energy, green chemistry and industrial applications Contacts: Vladimiro Del Santo (+39 3921084494) - vladimiro.dalsanto@scitec.cnr.it Web site: http://labcat.scitec.cnr.it/

COLLABORATIONS WITH COMPANIES

- AB Medica S.p.A.
- AGRICOLA FORTE S..S
- Callegari S.r.l.
- CHIMITRADE S.p.A.
- ECU
- Enel S.p.A.
- Eni S.p.A.
- E.P. Sintesi
- HyDEP S.r.l.
- ICAP Gropu
- IGM RESINS ITALIA S.r.l.
- Indena S.p.A.
- Italmatch Chemicals S.p.A.
- Lamberti S.p.A.
- MTA S.p.A.
- Olon S.p.A.
- Prysmian Group S.p.A.
- Rigreen S.r.l.
- Sanidrink S.r.l.
- Sidam Group
- SLIDE

PUBBLICAZIONI

- Preda G., Aricò A., Botta C., Ravelli D., Merli D., Mattiello S., Beverina L., and Pasini D.; **"Activation of Solid-State Emission and Photostability through Molecular Confinement: The Case of Triptycene-Fused Quinacridone Dyes"**, Org. Lett. 2023, 25, 35, 6490–6494.
- Benayas B., Morales J., Gori A., Strada A., Gagni, P., Frigerio R., Egea C., Armisen P., Cretich M., Yanez-Mo M., **"Proof of concept of using a membrane-sensing peptide for sEVs affinity-based isolation"**, Front. Bioeng. Biotechnol., 11 August 2023, Sec. Nanobiotechnology.
- Amari F. A. A. , Sangiorgio S., Pargoletti E., Rabuffetti M., Zaccheria F., Usuelli F., Quaranta V., Speranza G. and Cappelletti G.; **"Chemically vs Enzymatically Synthesized Polyglycerol-Based Esters: A Comparison between Their Surfactancy"**, ACS Omega 2023, 8, 29, 26405–2641.
- Lambert F., Danten Y., Gatti C., Bocquet B., Franco A. A., and Frayret C., **"Carbonyl-Based Redox-Active Compounds as Organic Electrodes for Batteries: Escape from Middle–High Redox Potentials and Further Improvement?"**, J. Phys. Chem. A 2023, 127, 24, 5104–511.
- Chiarcos R., Laus M., Sparnacci K., Po R., Biagini P., Tritto I., Boggioni L., Losio S., **"Investigating the effect of different catalytic systems on chain structure and end groups of CO₂-based polycarbonates by MALDI-TOF mass spectrometry"**, European Polymer Journal, Volume 192, 23 June 2023, 112058.
- Ardini B., Manzoni C., Squeo B., Villafiorita-Monteleone F., Grassi P., Pasini M., Bollani M. and Virgili T., **"Spectral Imaging of UV-Blocking Carbon Dot-Based Coatings for Food Packaging Applications"**, Coatings 2023, 13(4).
- Leone G., Palucci B., Zanchin G., Vignali A., Ricci G., and Bertini F., **"Dynamically Cross-Linked Polyolefins via Hydrogen Bonds: Tough yet Soft Thermoplastic Elastomers with High Elastic Recovery"**, ACS Appl. Polym. Mater. 2022, 4, 5, 3770–3778.



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Istituto di Chimica Biomolecolare (ICB)
 Via Campi Flegrei 34 - 80078 Pozzuoli (NA)
 sito web: <http://www.icb.cnr.it>

CONTACTS

Dott. Angelo FONTANA
 +39 0818675018

DETAILED INFORMATION

Staff: 1 Full Professor
 4 Associate Professors
 10 First Investigators
 53 Researchers
 5 Technologists
 23 Structured Technicians
 11 Administrative Technicians
 1 General Service

Registered students: 20

Post Lauream Training: 15 enrolled in Doctoral programs
 20 Research fellows

Patents: 7

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Chemical ecology	Chemical ecology	 	   	Ernesto Mollo (+39 0818675312) <i>ernesto.mollo@icb.cnr.it</i>
Organic synthesis	Organic Synthesis	 	   	Pietro Spanu (+39 0792841221) <i>pietro.spanu@cnr.it</i>
Omics	Omics methods for life science	 	   	Andrea Motta (+39 0818675228) <i>andrea.motta@icb.cnr.it</i>
Sintesi peptidica	Peptide synthesis	 	   	Barbara Biondi (+39 0498275254) <i>barbara.biondi@cnr.it</i>
Supramolecular chemistry	Supramolecular Chemistry	 	   	Grazia Consoli (+39 0957338319) <i>grazia.consoli@icb.cnr.it</i>
Drug discovery	Drug Discovery	 	   	Emiliano Manzo (+39 0818675310) <i>emiliano.manzo@icb.cnr.it</i>
Fermentation	Fermentation and Biotrasformation	 	   	Annarita Poli (+39 0818675311) <i>apoli@icb.cnr.it</i>
Molecular pharmacology	Molecular Pharmacology	 	   	Alessia Ligresti (+39 0818675093) <i>alessia.ligresti@icb.cnr.it</i>

Pharmaceutical chemistry	Pharmaceutical Chemistry	 	   	Genoveffa Nuzzo (+390818675166)
Pharmaceutical biotechnology	Pharmaceutical biotechnology	 	   	Giuliana d'Ippolito (+39 0818675075) <i>gdippolito@icb.cnr.it</i>
Computational chemistry	Computational Chemistry	 	   	Pietro Amodeo (+39 0818675072) <i>pietro.amodeo@icb.cnr.it</i>
Green Hydrogen	Hydrogen and Bio-Hydrogen	 	   	Elisabetta Alberico (+39 0792841206) <i>elisabetta.alberico@icb.cnr.it</i>
Analytical chemistry	Chemical methods	 	   	Adele Cutignano (+39 0818675313) <i>adele.cutignano@icb.cnr.it</i>
Biofuels	Biofuel and sustainable biocatalytic process	 	   	Carmelo Drago (+39 0957338350) <i>carmelo.drago@cnr.it</i>
Chemical biology	Chemical Biology	 	   	Carmela Gallo (+39 0818675096) <i>cgallo@icb.cnr.it</i>
Biocatalysis	Biocatalysis	 	   	Nicola D'Antona (+39 0957338342) <i>nicola.dantona@icb.cnr.it</i>
Green chemistry	Sustainable chemical reactions and processes	 	   	Maurizio Solinas (+39 0792841219) <i>maurizio.solinas@icb.cnr.it</i>
Biochemistry	Biochemistry	 	   	Paolo Ruzza (+39 0498275282) <i>paolo.ruzza@icb.cnr.it</i>
Bioinorganic chemistry	Organometallic Chemistry	 	   	Daniele Sanna (+39 0792841207) <i>daniele.sanna@icb.cnr.it</i>
Natural products	Chemistry of natural substances. Functional natural products	 	   	Edoardo Napoli (+39 0957338346) <i>edoardo.napoli@icb.cnr.it</i>
Organic molecules	Structural elucidation of small organic molecules	 	   	Maria Letizia Ciavatta (+39 0818675243) <i>letizia.ciavatta@icb.cnr.it</i>
Glycochemistry	Glycochemistry and Glycobiology	 	   	Fabrizio Chiodo (+39 081985018) <i>fabrizio.chiodo@icb.cnr.it</i>
Agrifood	Chemistry of molecules for the agro-food	 	   	Giuseppe Granata (+39 0957338318) <i>giuseppe.granata@cnr.it</i>
Neuroscience	Neuroscience	 	   	Luigia Cristino (+39 0818675134) <i>luigia.cristino@icb.cnr.it</i>

OTHER R&D ORGANIZATIONS

**Laboratory of Cell and Molecular
Analysis by Mass Spectrometry**

The structure is the product of the collaboration of the Institute of Biomolecular Chemistry and the Department of Biology of the University of Naples Federico II to carry out research and teaching activities of excellence in bio-organic chemistry, chemical biology, chemistry of natural products, biology, food chemistry, biopharmaceutical and cosmetics
Contacts: Angelo Fontana (+39 081 8675018) - afontana@icb.cnr.it ; angelo.fontana@unina.it

**Nuclear Magnetic Resonance
Platform**

The Nuclear Magnetic Resonance Platform is positioned as the support of choice in NMR spectroscopic analysis support in the determination of molecular structure, dynamics and kinetics of reaction and purity of compounds for chemical research in "Health and Life Sciences" (synthesis, identification and characterization of new biologically active organic molecules), for "Green Chemistry - Bioeconomy" (new green molecules, products and processes) or as a technique for metabolomics analysis for applications in the biomedical field
Contacts: Andrea Motta (+39 0819675026) - amotta@icb.cnr.it
Web site: <https://www.icb.cnr.it/ricerca/piattaforme-tecnologiche-e-infrastrutture-di-ricerca/>

**Joint International Research Unit
(UMI)**

The Joint International Research Unit (UMI) is a bilateral research unit between the Italian National Research Council (CNR) and the Université Laval of Quebec. The UMI is aimed at strengthening the scientific and technological cooperation between Université Laval and the CNR through exchanges of students and professors in the framework of pioneering bilateral research projects.
Contacts:
Vincenzo Di Marzo (+39 0818675024) - vincenzo.dimarzo@icb.cnr.it



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Institute for the Chemistry of Organometallic Compounds (ICCOM)

Via Madonna del Piano 10 - 50019 Sesto Fiorentino (FI)

sito web: <http://www.iccom.cnr.it/en/home-2/>

CONTACTS

Dott. Claudio SANGREGORIO
+39 0555225280

DETAILED INFORMATION

Staff: 71 Researchers
15 Structured Technicians
2 Technologists
4 Administrative Technicians

Registered students:

Post Lauream Training: 11 enrolled in doctoral programs in Industrial Chemistry and Chemistry

12 Research fellows

4 Grant holders

Patents: 87

<https://publications.cnr.it/search/f/c3RydXR0dXJlY25yX3MtaS1zLW06IkdQ09NLCBjc3RpdHV0byBkaSBjaGltaWNhIGRlaSBjb21wb3N0aSBvcmdhbm8gbWV0YWxsaWNpIlg.dGlwb19zLWktczoiQnJldmV0dG8gZGkgW52ZW56aW9uZSBpbmR1c3RyaWFsZSI>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Analytical spectrometry

Analytical methodology for trace elements determination



Emanuela Pitzalis (+39 0503152558)
emanuela.pitzalis@pi.iccom.cnr.it

Electrocatalysis

Electrocatalysis for O₂, CO₂ and N₂ conversion to valuable products



Manuela Bevilacqua (+39 0405583941)
manuela.bevilacqua@pi.iccom.cnr.it

Solar cells

Design and synthesis of organic compounds as light-absorbing and charge transport materials in new generation photovoltaic cells, also for indoor applications



Gianna Reginato (+39 0555225255)
gianna.reginato@iccom.cnr.it

Electrocatalysis

(Electro) catalytic reduction of CO₂ in liquid or gaseous fuels, alcohols and chemical compounds



Jonathan Filippi (+39 0555225228)
jonathan.filippi@iccom.cnr.it

Biopolymers

Synthesis of biobased polycarbonates and synthesis of polyols from vegetable oils



Caterina Fusco (+39 0805442068)
fusco@ba.iccom.cnr.it

Nanotechnologies

Organic, inorganic and hybrid polymeric materials with functional properties. Synthesis, characterization and post-functionalization. Nanotechnologies for multifunctional packaging



Elisa Passaglia
elisa.passaglia@pi.iccom.cnr.it

Green Hydrogen

Electrocatalysis and photocatalysis for applications in the energy sector, particularly in the sector of fuel cells and green hydrogen production by electrolysis



Francesco Vizza (+39 0555225286)
francesco.vizza@pi.iccom.cnr.it

NMR	Structural and dynamic characterization of synthetic and natural polymers by means of solid state NMR	 	   	Silvia Pizzanelli (+39 0503152549) <i>silvia.pizzanelli@pi.iccom.cnr.it</i>
Green Hydrogen	Hydrogen chemistry and technology: production, storage and use in fuel cells	 	   	Hamish Miller (+39 0555225201) <i>hamish.miller@iccom.cnr.it</i>
Archives	Volatile compounds trapped in solids for the control of biodeteriogens in paper archives and libraries	 	   	Andrea Ienco (+39 0555225282) <i>andrea.ienco@cnr.it</i>
Carbon capture	Carbon dioxide chemistry and technology: processes for the capture and valorization of CO ₂ from flue gases (CCUS) or directly from the air (DAC)	 	   	Francesco Barzagli (+39 0555225298) <i>francesco.barzagli@iccom.cnr.it</i>
Catalytic depolymerisation	Selective catalytic depolymerization of polyesters, polycarbonates and polyamides	 	   	Carmen Moreno-Marrodán (+39 0555225219) <i>carmen.moreno@iccom.cnr.it</i>
2D materials	Advanced multifunctional 2D materials	 	   	Maria Caporali (+39 0555225249) <i>maria.caporali@iccom.cnr.it</i>
Analytical spectroscopy	Advanced analytical and spectroscopic techniques for environment, health and conservation of artistic and cultural heritage	 	   	Stefano Legnaioli (+39 0503152221) <i>stefano.legnaioli@pi.iccom.cnr.it</i>
Solar concentrators	Design e sintesi di nuovi fluorfori organici da utilizzare in concentratori solari luminescenti per il fotovoltaico integrato in edifici (BIPV)	 	   	Massimo Calamante (+39 0554573587) <i>mcalamante@iccom.cnr.it</i>
Sustainable catalysis	New sustainable chemical processes with high efficiency and selectivity through the optimization of already existing catalytic and stoichiometric processes and design and implementation of new processes	 	   	Pierluigi Barbaro (+39 0555225287) <i>pierluigi.barbaro@iccom.cnr.it</i>
Exhausted batteries	Sustainable processes for the recovery of critical materials (Li, Co, Ni, Cu, etc.) from end-of-life lithium batteries through hydro- and solvometallurgical processes	 	   	Andrea Marchionni (+39 0555225206) <i>andrea.marchionni@iccom.cnr.it</i>
Catalysis	Catalytic processes in aqueous phase;hydrogen storage by reversible hydrogenation of CO ₂ to formic acid and methanol	 	   	Luca Gonsalvi (+39 0555225251) <i>l.gonsalvi@iccom.cnr.it</i>
NMR spectroscopy	Solid state NMR methods for pharmaceutical applications	 	   	Elisa Carignani (+39 0503152083) <i>elisa.carignani@pi.iccom.cnr.it</i>
NMR spectroscopy	Characterization of materials for the energy transition (optoelectronics, fuel cells, ...) and sustainability by means of Solid State NMR spectroscopy	 	   	Silvia Borsacchi (+39 0503153052) <i>silvia.borsacchi@pi.iccom.cnr.it</i>
Heterogeneous catalysis	Design of nanostructured metal catalysts and their use for processes for fine chemicals and hydrogen production	 	   	Claudio Evangelisti (+39 0503152345) <i>claudio.evangelisti@cnr.it</i>
Nanomateriali magnetici	Novel nanostructured magnetic materials for the realization of rare-earth free permanent magnets, for catalysis, and biomedicine	 	   	Claudio Sangregorio (+39 0555225280) <i>csangregorio@iccom.cnr.it</i>

Sustainable synthesis	Green chemistry: use of sustainable and eco-compatible solvents and C-H activation processes for the synthesis of molecules with applications in photovoltaics and organic electronics	    	Alessandro Mordini (+39 0554573555) <i>alessandro.mordini@iccom.cnr.it</i>
Bioanalytical methodologies	Spectroscopic and separative analytical and bioanalytical methodologies for the study of metabolism in cells and biofluids and for the characterization of materials and biomaterials	    	Emilia Bramanti (+39 0503152293) <i>emilia.bramanti@pi.iccom.cnr.it</i>
Metal-free catalysis	Metal-free catalytic processes to reduce the environmental impact of the release of exhausted catalysts	    	Giuliano Giambastiani (+39 0555225288) <i>giuliano.giambastiani@iccom.cnr.it</i>
Photocatalysis	Design and synthesis of organic dyes and organometallic catalysts towards hydrogen production via photocatalytic or photoelectrochemical processes	    	Lorenzo Zani (+39 0555225245) <i>lorenzo.zani@iccom.cnr.it</i>
Computational chemistry	Theoretical and computational chemistry for predictive modeling	    	Fabrizio Santoro (+39 0503152458) <i>fabrizio.santoro@pi.iccom.cnr.it</i>
NMR spectroscopy	Characterization of solid porous materials by solid state NMR spectroscopy and NMR relaxometry	    	Lucia Calucci (+39 0503152517) <i>lucia.calucci@pi.iccom.cnr.it</i>

OTHER R&D ORGANIZATIONS

Ce.M.E. - Centro di Microscopie Elettroniche "Laura Bonzi

Center for Electronic microscopy characterization and nano-manipulation (FIB-SEM, HRTEM).
Contacts: Alessandro Lavacchi (+39 0555225250) - alessandro.lavacchi@iccom.cnr.it
Web site: <http://www.ceme.cnr.it/>

COLLABORATIONS WITH COMPANIES

- ALESCO S.r.l.
- Altair Chimica S.p.A.
- Belenos Clean Power
- Cicci Research S.r.l.
- CISA S.p.A.
- Cobat
- Colorobbia Italia S.p.A.
- Danger & Safety S.r.l.
- Dipharma Francis S.r.l.
- EDInnovation S.r.l.
- Endostart
- ENECOM S.r.l.
- ENEL GREEN POWER S.p.A.
- ERREDUE S.p.A.
- Faggi Enrico S.p.A.
- FORETHINKING S.r.l.
- Greenswitch S.r.l.
- Gruppo Menarini
- I&S S.r.l.
- International Tin S.r.l.
- Italmatch Chemicals S.p.A., Sede di Arese
- Laboratori Archa S.r.l.
- Leonardo S.p.A.
- LMPE S.r.l.
- MAE S.p.A.
- Makros S.r.l.
- Nemesys energy
- Scapigliato S.r.l.
- Solvay Specialty Polymers S.p.A.
- Sotacarbo S.r.l.
- Stelar
- Worgas

PUBBLICAZIONI

- Mirshokraee, Seyed Ariana; Muhyuddin, Mohsin; Lorenzi, Roberto; Tseberlidis, Giorgio; Lo Vecchio, Carmelo; Baglio, Vincenzo; Berretti, Enrico; Lavacchi, Alessandro; Santoro, Carlo; **Litchi-derived platinum group metal-free electrocatalysts for oxygen reduction reaction and hydrogen evolution reaction in alkaline media**; SusMat 2023, 3, 248-262 (IF = 28,4).
- Berretti, Enrico; Osmieri, Luigi; Baglio, Vincenzo; Miller, Hamish A.; Filippi, Jonathan; Vizza, Francesco; Santamaria, Monica; Specchia, Stefania; Santoro, Carlo; Lavacchi, Alessandro; **Direct Alcohol Fuel Cells: A Comparative Review of Acidic and Alkaline Systems**; Electrochemical Energy Reviews 2023, 6, art. no. 30 (IF = 31,3).
- Perez Schmidt, P., Pagano, K., Lenardi, C., Penconi, M., Ferrando, R.M., Evangelisti, C., Lay, L., Ragona, L., Marelli, M., Polito, L.; **Photo-Induced Microfluidic Production of Ultrasmall Glyco Gold Nanoparticles**; Angewandte Chemie Int. Ed. 2023, 62, art. no. e202210140 (IF = 16,6).
- Huang J.; Sementa L.; Liu Z.; Barcaro G.; Feng M.; Liu E.; Jiao L.; Xu M.; Leshchev D.; Lee S.-J.; Li M.; Wan C.; Zhu E.; Liu Y.; Peng B.; Duan X.; Goddard W.A.; Fortunelli A.; Jia Q.; Huang Y.; **Experimental Sabatier plot for predictive design of active and stable Pt-alloy oxygen reduction reaction catalysts**; Nature Catalysis 2022, 5, 513-523 (IF= 40,706).
- Serrano G.; Poggini L.; Cucinotta G.; Sorrentino A.L.; Giaconi N.; Cortigiani B.; Longo D.; Otero E.; Saintavit P.; Caneschi A.; Mannini M.; Sessoli R.; **Magnetic molecules as local sensors of topological hysteresis of superconductors**; Nature Communications 2022, 13, art. no. 3838 (IF = 17,694).
- Gabbani A.; Sangregorio C.; Tandon B.; Nag A.; Gurioli M.; Pineider F.; **Magnetoplasmonics beyond Metals: Ultrahigh Sensing Performance in Transparent Conductive Oxide Nanocrystals**; Nano Letters 2022, 22, 9036-9044 (IF = 12,262).
- Pagliaro M.V.; Wen C.; Sa B.; Liu B.; Bellini M.; Bartoli F.; Sahoo S.; Singh R.K.; Alpay S.P.; Miller H.A.; Dekel D.R.; **Improving Alkaline Hydrogen Oxidation Activity of Palladium through Interactions with Transition-Metal Oxides**; ACS Catalysis 2022, 12, 10894-10904 (IF = 13,700).

MORE INFO

CNR industrial doctorates

- <https://www.cnr.it/it/dottorati-imprese>
- <https://www.cnr.it/it/archivio-dottorati-industriali>



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Institute of Science, Technology and Sustainability for Ceramics (ISSMC)
 Via Granarolo 64 - 48018 Faenza (RA)
 sito web: <http://www.issmc.cnr.it/en>

CONTACTS

Dott.ssa Alessandra SANSON
 +39 0546699753

DETAILED INFORMATION

Staff: 9 Full Professors

11 Associate Professors

21 Researchers

5 Technologists

7 Structured Technicians

6 Administrative Technicians

4 General Services

Registered students:

Post Lauream Training: 12 enrolled in doctoral programs

15 Research fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Photovoltaic	Fabrication and characterization of organic dye solar cells (DSSC)		   	Alex Sangiorgi (+39 0546699732) alex.sangiorgi@issmc.cnr.it
Circular economy	Valorization of food industry by-products into multifunctional ceramics		   	Michele Iafisco (+39 0546699730) michele.iafisco@issmc.cnr.it
Fibre-reinforced composites	New sustainable fiber-reinforced composites with inorganic matrix		   	Annalisa Natali Murri (+39 0546699788) annalisa.natalimurri@issmc.cnr.it
Fluid treatment	Porous geopolymers as adsorbents for fluid treatments		   	Elettra Papa (+39 0546699788) elettra.papa@issmc.cnr.it
Solar fuels	Development of materials for eletrodes and photo-electrodes for solar fuels production		   	Nicola Sangiorgi (+39 0546699732) nicola.sangiorgi@issmcc.cnr.it
Catalysts	Processes for catalysts development for the production of hydrogen (steam reforming, biomass gasification, etc.)		   	Angela Gondolini (+39 0546699743) angela.gondolini@issmc.cnr.it
Big data	Multi criteria optimisation tools for supporting the design of advanced materials		   	Davide Gardini (+39 0546699749) davide.gardini@issmc.cnr.it
Biomass	Thermochemical processes for green production of chemicals from biomass		   	Francesco Miccio (+39 0546699774) francesco.miccio@cnr.it

SSbD	Rationale and criteria for the implementation of SSbD approach to the advanced material production	  	Anna Luisa Costa (+39 0546699718) <i>anna.costa@issmc.cnr.it</i>
Geopolymers	Chemically bonded ceramics and inorganic polymers – geopolymers. Waste valorization through a sustainable process of chemical consolidation	  	Valentina Medri (+39 0546699751) <i>valentina.medri@issmc.cnr.it</i>
Solid batteries	Development of ceramic-based solid state batteries	  	Elisa Mercadelli (+39 0546699743) <i>elisa.mercadelli@issmc.cnr.it</i>
SOFC-SOEC	Development of devices for the energy production and storage of hydrogen (SOFC-SOEC)	  	Angela Gondolini (+39 0546699743) <i>angela.gondolini@issmc.cnr.it</i>
Additive manufacturing	Development and optimization of AM (inkjet printing and micro-extrusion) processes to produce ceramic, polymeric and their hybrid products	  	Alex Sangiorgi (+39 0546699732) <i>alex.sangiorgi@issmc.cnr.it</i>
Regenerative medicine	Development of bioactive ceramic and hybrid implants for the regeneration of bone, osteochondral and skin tissues	  	Simone Sprio (+39 0546699760) <i>simone.sprio@issmc.cnr.it</i>
Nanomedicine	Development of biocompatible and bioactive nanoparticles as carrier of bioactive molecules	  	Anna Tampieri (+39 0546699759) <i>anna.tampieri@issmc.cnr.it</i>
Ceramic membranes	Development of ceramic membranes for gas separations (H ₂ , O ₂ e CO ₂)	  	Elisa Mercadelli (+39 0546699743) <i>elisa.mercadelli@issmc.cnr.it</i>
Micro/nano plastics	Colloidal and physicochemical characterisation of micro/nano plastics (MNP) in environmental and biological matrices. Development of new methods for their traceability.	  	Simona Ortelli (+39 0546699729) <i>simona.ortelli@issmc.cnr.it</i>
Blue deal	Valorisation of marine resources for the protection of environment	  	Magda Blosi (+39 0546699718) <i>magda.blosi@issmc.cnr.it</i>
Piezoelectric materials	Development of ceramic-based piezoelectric materials and devices	  	Elisa Mercadelli (+39 0546699743) <i>elisa.mercadelli@issmc.cnr.it</i>
Electrorheology	Study and development of electrorheological fluids (ERFs) for applications in electromechanical and haptic devices	  	Davide Gardini (+39 0546699749) <i>davide.gardini@issmc.cnr.it</i>

OTHER R&D ORGANIZATIONS

NANO-SSbD-Lab	Laboratory for the design and production of nanostructured materials for the protection of human and environmental health, accordingly to SSbD approach. Contacts: Anna Luisa Costa (+39 0546699718) - anna.costa@istec.cnr.it Web site: https://www.istec.cnr.it/en/research/lines-of-research/nanotechnology-and-nanosafety/
RHEOCOL Lab	Rheological and colloidal properties laboratory for the characterization of nano and microdispersed systems Contacts: Davide Gardini (+39 0546699749) - davide.gardini@istec.cnr.it Web site: https://www.istec.cnr.it/en/research/technological-laboratories/colloidal-property-laboratory-of-interface/
SHAPE-Lab	Shaping Lab for ceramic materials for energetics (3D printing, ink-jet, spin coating, etc.) Contacts: Alessandra Sanson (+39 0546699742) - alessandra.sanson@istec.cnr.it Web site: https://www.istec.cnr.it/en/research/technological-laboratories/3d-printers-laboratory/

COLLABORATIONS WITH COMPANIES

- Aurel S.p.A.
- Curti Costruzioni Meccaniche S.p.A.
- Euroarce S.r.l.
- Finceramica
- Florim S.p.A. S.B.
- Gitoma S.r.l.
- GreenBone Ortho S.p.A.
- Hydea S.p.A.
- Industrie Bitossi S.p.A.
- Industrie Ceramiche Piemme S.p.A.
- ITT Italia S.r.l.
- Kalikem S.r.l.
- Marazzi Group S.r.l.
- Meccanotecnica Umbra s.p.A.
- NDG
- Novabell S.p.A.
- Panariagroup Industrie Ceramiche S.p.A.
- Plumestars S.r.l.
- Projecta Engineering S.r.l.
- Rosati Arte
- SAAti S.p.A.
- Sacmi Imola S.C.
- SICER S.p.A.
- Smalticeram Unicer S.p.A.
- Smaltochimica S.r.l.
- System ceramics S.p.A.
- SMEG S.p.A.

PUBBLICAZIONI

- Blosi, M., Brigliadori, A., Zanoni, I., Ortelli, S., Albonetti, S., & Costa, A. L. (2022); **Chlorella vulgaris meets TiO₂ NPs: effective sorbent/photocatalytic hybrid materials for water treatment application**; Journal of environmental management, 304, 114187.
- Costa, A. L., Blosi, M., Brigliadori, A., Zanoni, I., Ortelli, S., Simeone, F. C., & Gardini, D. (2022); **Eco design for Ag-based solutions against SARS-CoV-2 and E. coli**; Environmental Science: Nano, 9(11), 4295-430.
- R. Bendoni, F. Miccio, V. Medri, P. Benito, A. Vaccari, E. Landi; **Geopolymer composites for the catalytic cleaning of tar in biomass-derived gas**; Renewable Energy, 131 (2019) 1107-1116.
- A. Adamiano, S. Scialla, F. Carella, M. Casella, S. Camerini, A. Quarta, A. Muntiu, F. Ferrari, A. Vitali, M. Iafisco, C. Piccirillo; **Simultaneous extraction of calcium phosphates and proteins from fish bones. Innovative valorisation of food by-products**; J Cleaner Prod 2023 385: 135656. doi: 10.1016/j.jclepro.2022.135656.
- E. Quarta, M. Chiappi, A. Adamiano, A. Tampieri, W. Wang, T.D. Tetley, F. Buttini, F. Sonvico, D. Catalucci, P. Colombo, M. Iafisco, L. Degli Esposti; **Inhalable Microparticles Embedding Biocompatible Magnetic Iron-Doped Hydroxyapatite Nanoparticles**; J Funct Biomater 2023 14(4):189. doi: 10.3390/jfb14040189.
- A. Natali Murri, V. Medri, E. Papa, L. Laghi, C. Mingazzini, E. Landi; Porous geopolymer insulating core from a metakaolin/biomass ash composite; Environments, 4 (2017) 86, <https://doi.org/10.3390/environments4040086>.
- Bartoletti, A. Sangiorgi*, A. Gondolini, E. Mercadelli, S. Casadio, S. Garcia-Gonzalez, M. Morales, E. Jiménez-Piqué, A. Sanson; **Dispersant- and solvent-free pastes for UV-assisted micro-extrusion of porous proton conductive membrane supports**; Journal of The European Ceramic Society 43, 11, (2023) 4844-4853.
- J. Yus*, Z. Gonzalez, A. Javier Sanchez-Herencia, A. Sangiorgi, A. Sanson, C. Galassi, B. Ferrari; **High photocatalytic efficiency of inkjet printed patterns by formulation of eco-friendly TiO₂-based inks**; Open Ceramics 8, (2021), 100197.

MORE INFO

The Institute at the moment holds an industrial PhD issued by Bologna University and 3 more are financed for the XXXIX cycle for the PhD programme in Materials Science and Technologies of the Parma University.



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Istituto per lo Studio dei Materiali Nanostrutturati (ISMN)
 Strada Provinciale 35 d, n. 9 - 00010 Montelibretti (RM)
 sito web: <http://www.ismn.cnr.it>

CONTACTS

Dott. Michele MUCCINI
 +39 0690672484

DETAILED INFORMATION

Staff: 63 Researchers
 6 Technologists
 12 Structured Technicians
 15 Administrative Technicians
Registered students:
Post Lauream Training: 7 Research fellows
Patents: 7

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Bioeconomy	Sustainable processes for the extraction and the conversion of biomolecules and biomaterials from agrifood and forestal waste	 	   	Rosaria Ciriminna (+39 0916809369) <i>rosaria.ciriminna@cnr.it</i>
Green chemistry	Sol-gel microencapsulation for the production of multifunctional sustainable materials	 	   	Rosaria Ciriminna (+39 0916809369) <i>rosaria.ciriminna@cnr.it</i>
Hydrogen	Innovative materials for green hydrogen production	 	   	Mario Pagliaro (+39 0916809370) <i>mario.pagliaro@cnr.it</i>
H2	Capture and valorization of CO2 for sustainable production of H2 and e-fuels from biogas	 	   	Leonarda Francesca Liotta (+39 0916809371) <i>leonarda.liotta@cnr.it</i>
Environmental catalysis	Catalytic abatement of NO and N2O-Preparation, characterization and catalytic activity of mixed oxides-based systems	 	   	Giuseppe Fierro (+39 3381705583) <i>giuseppe.fierro@cnr.it</i>
Sustainable materials	Development of eco-friendly, functional and innovative materials for environmental protection and remediation, and for sustainable applications	 	   	Maria Rosaria Plutino (+39 3929076004) <i>rosaria.plutino@cnr.it</i>
Green chemistry	Produzione e applicazione di nanomateriali nella conversione di biomassa in prodotti sostenibili. Processi ecosostenibili	 	   	Maria Luisa Testa (+39 0916809253) <i>marialuisa.testa@cnr.it</i>

Sustainable preservation	Development of smart ecosustainable materials with a tailored protective action for the safe and long-term conservation of cultural heritage. The recovery and reuse of waste materials (i.e. polysaccharides and plastics)	    	Gabriella Di Carlo (+39 0690672214) <i>gabriella.dicarlo@cnr.it</i>
Heterogeneous catalysis	Preparation, characterization and study of nanostructured materials active for catalytic reactions in energy and environmental fields	    	Maria Cristina Campa (+39 0649913376) <i>mariacristina.campa@cnr.it</i>
Ecosustainable materials	Innovation and eco-sustainability in the field of the protection of industrial materials and the Conservation of Cultural Heritage	    	Maria Pia Casaletto (+39 0916809378) <i>mariapia.casaleto@cnr.it</i>
Solar energy	Utilizzo dell'energia solare per processi fotocatalitici innovativi di interesse della chimica fine e del settore delle vernici	    	Mario Pagliaro (+39 0916809370) <i>mario.pagliaro@cnr.it</i>
Sustainable materials	Sustainable materials and synthesis methodologies for clean energy production and environmental remediation	    	Francesca Deganello (+39 0916809387) <i>francesca.deganello@cnr.it</i>



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali
Institute for Organic Synthesis and Photoreactivity (ISOF)

Via Gobetti 101 - 40129 Bologna (BO)

sito web: <https://www.isof.cnr.it/>

CONTACTS

Prof. Vincenzo PALERMO
 +39 0516399773

direzione@isof.cnr.it

DETAILED INFORMATION

Staff: 7 Full Professors

7 Associate Professors

22 Researchers

4 Technologists

6 Structured Technicians

2 Administrative Technicians

Registered students:

Post Lauream Training: 27 Research fellows

Patents: 48 Some examples of patents are: nanoparticles as drug-delivery vehicles; production of all-carbon conductive paths attached on flexible substrate in order to obtain RFID antennas, or interconnects, or other applications; production of water-based solutions of PLA for alogen-free packaging; purification of bee wax using UV light and radicals; microfiltration in fibers for removal of contaminants of water; microfluidic patch for separating specific species in biological fluids and related electrochemical sensing device.

Go to CNR patent archive for a complete list of all ISOF patents: <https://www.cnr.it/it/catalogo-brevetti>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Organic photovoltaics

Characterization of new organic materials for electronics, especially in organic photovoltaics, and study of mobility



Francesca Tinti (+39 0516399829)
francesca.tinti@isof.cnr.it

Electrochemistry

Electrochemistry of conjugated polymers for energy, biological and sensor applications



Alberto Zanelli (+39 0516399855)
alberto.zanelli@isof.cnr.it

Medical imaging

Optoelectronic device for bone tissue analysis



Massimo Cocchi (+39 0516399818)
massimo.cocchi@isof.cnr.it

Chemical analysis

Chemical analysis of surfaces using X-rays photoelectron spectroscopy (XPS)



Alessandro Kovtun (+39 0516398437)
alessandro.kovtun@isof.cnr.it

Biopolymers

Conductive biopolymers for optoelectronic devices



Massimo Cocchi (+39 0516399818)
massimo.cocchi@isof.cnr.it

Biopolymers	Natural polymers extraction and nanofibers and nanoparticles preparation for pharmaceutical and cosmetic applications	    	Giovanna Sotgiu (+39 0516399777) <i>giovanna.sotgiu@isof.cnr.it</i>
Ecosustainable materials	Nanocomposites and 2D/3D scaffolds preparation starting from food and textile wastes for applications in biomedical, diagnostic and technological sectors	    	Tamara Posati (+39 0516399766) <i>tamara.posati@isof.cnr.it</i>
Selective transport	Design and development of (nano)systems for the selective delivery of anti-cancer drugs to the tumor tissues	    	Greta Varchi (+39 0516398283) <i>greta.varchi@isof.cnr.it</i>
Organic semiconductors	Functional p-conjugated molecular materials for electronics and photonics applications	    	Manuela Melucci (+39 0516398272) <i>manuela.melucci@isof.cnr.it</i>
Porous composites	Chemically tailored graphenes and their polymeric 3D hybrid structures (adsorptive membranes and filters) for environmental remediation	    	Manuela Melucci (+39 0516398271) <i>manuela.melucci@isof.cnr.it</i>
Nano-composites	Addition of graphene and nano-materials to thermoset or thermoplastic polymers for aerospace, automotive or industrial applications	    	Vincenzo Palermo (+39 0516399773) <i>palermo@isof.cnr.it</i>
Epigenetic drugs	Development of bioactive molecules capable of inhibiting specific epigenetic targets for the treatment of solid tumours	    	Greta Varchi (+39 0516398283) <i>greta.varchi@isof.cnr.it</i>
Molecular systems	Synthesis and development of (supra-)molecular systems activated by external stimuli for applications in energy conversion, drug delivery and functional materials	    	Jessica Groppi (+39 0516398326) <i>jessica.groppi@isof.cnr.it</i>

COLLABORATIONS WITH COMPANIES

- Airbus S.A.S.
- Applied Polymers Materials
- ENI S.p.A.
- Graphene-XT
- Kerline S.r.l.
- Lipinutragen S.r.l.
- Meditekology S.r.l.
- Nanesa S.r.l.
- Stellantis N.V.

PUBBLICAZIONI

- **Polymer solar cells with active layer thickness compatible with scalable fabrication processes: a meta-analysis** (2023) Advanced Materials, 35 (8), art. no. 2210146. Joint publication with Eni S.p.A., Via G. Fauser 4, Novara, 28100, Italy; Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, 02139, MA, United States.
- **Tuneable conductivity at extreme electric fields in zno tetrapod-silicone composites for high-voltage power cable insulation** (2022) Scientific Reports, 12 (1), art. no. 6035. Joint publication with Hitachi Energy Research, Västerås, 72178, Sweden.
- **Graphene and related materials in hierarchical fiber composites: production techniques and key industrial benefits** (2020), Composites Science and Technology, 185, 107848. Joint publication with CRF, Centro Ricerche FIAT, Strada Torino 50, Orbassano, Torino, 10043, Italy; Airbus Operations, S.L., Getafe, 28906, Spain; Nanesa S.r.l., Via del Gavardello 52c, Arezzo, 52100, Italy; Avanzare Innovacion Tecnologica S.L, Avenida Lentiscars 4-6, Navarrete, 26370, La Rioja, Spain.
- **Application of graphene-based flexible antennas in consumer electronic devices** (2018) Materials Today, 21 (3), pp. 223 - 230. Joint publication with STMicroelectronics, Stradale Primosele, Catania, 50 95121, Italy; Nokia Technologies, Broers Building, Cambridge, CB3 0FA, United Kingdom.
- **Small plastic debris in sediments from the central Adriatic sea: types, occurrence and distribution** (2017) Marine Pollution Bulletin, 124 (1), pp. 435 - 440. Joint publication with Advanced Polymer Materials, Via G. Saragat 9, Ferrara, 44122, Italy; CESI, via Nino Bixio 39, Piacenza, 29121, Italy; TERNA, V.le E. Galbani 70, Rome, 00156, Italy.

MORE INFO

More than 2100 scientific articles on peer-reviewed international journals have been published at ISOF in the last 20 years, with an average 90 articles/year and a citation h-index =103 (Source: SCOPUS; June 2023).

Another excellence of ISOF is its long-lasting engagement in scientific dissemination activities and communication. ISOF researchers have ideated and successfully promoted several National and EU projects targeting the establishing scientific cultural values in younger generations, participated in several editions of the European researchers' night and published several books and articles in public media to increase the general public's awareness of key problems of our age. Such publications have collected several awards.

Besides dissemination to the scientific and public communities, ISOF has an excellent track record of technology transfer to industries, with long-lasting research contracts and collaborations with key industries like ENI, FIAT/Stellantis, AIRBUS etc

In the last years, the vocation of ISOF for research on sustainability has been strengthened, while keeping also a strong research activity in the fields of new materials to improve human health, with the final goal of supporting the transition of our country and our society to a healthier and more sustainable way of life.



GENERAL INFORMATION

CNR - Dipartimento Scienze Chimiche e Tecnologie dei Materiali

Institute of Crystallography (IC)

Via Amendola 122/O - 70126 Bari (BA)

sito web: <http://www.ic.cnr.it>

CONTACTS

Dr. Cinzia GIANNINI

+39 0805929167

DETAILED INFORMATION

Staff: 57 Researchers

7 Technologists

6 Structured Technicians

13 Administrative Technicians

Registered students:

Post Lauream Training: 7 Research fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Ageing

Characterization of the biological features of candidate compounds by using dedicated cellular models examined by the means of High-content (HCS) and high-throughput screening (HTS) approaches, towards the identification of new therapeutical approaches to be used in aging-related pathologies



Marianna Flora Tomasello (+39 0957338443)
mariannaflorea.tomasello@ic.cnr.it

Crystallisation

Crystallization techniques for the separation of biopharmaceutical products such as antibodies in the post-production stages. Use of immobilized enzymes in crystalline form for semi-artificial photosynthesis and for the conversion of CO₂ into chemical compounds



Rocco Caliandro (+39 0805929150)
rocco.caliandro@ic.cnr.it

Biosensors

Characterization and implementation of biological processes for the production of biosensors, bioenergy and fine chemicals



Giuseppina Rea (+39 0690672631)
giuseppina.rea@ic.cnr.it

Methodologies

Characterization, through the development and application of advanced diffraction methods, of molecules of pharmaceutical interest



Angela Altomare (+39 0805929155)
angela.altomare@ic.cnr.it

Drug design

Design and synthesis of molecules with potential biological activity in the pharmacological and diagnostic fields



Michele Saviano (+39 0823274757)
michele.saviano@ic.cnr.it

Crystallography

Advanced characterization with diffraction/imaging techniques of organic and inorganic materials for technological applications



Peptides	Design, synthesis and characterization of derivatives of natural molecules or peptide / peptidomimetic sequences and their functionalization with bioactive scaffolds for the realization of new systems with biological elements (receptors, proteins, metal ions) molecular recognition ability and mechanisms modulation for the restoration of cellular homeostasis altered by pathological processes	  	Giuseppe Pappalardo (+39 095733842) <i>giuseppe.pappalardo@ic.cnr.it</i>
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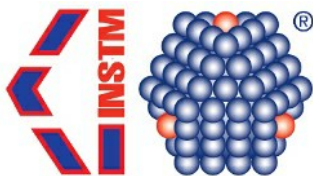
OTHER R&D ORGANIZATIONS

2Cryst-Lab	Laboratory is devoted mainly to the preparation of biological samples before performing measurements through x-ray, such as diffraction from crystals (MX) or Small/ Wide Angle Scattering (SAXS, WAXS), at the instrumentations of our institute and / or synchrotron facilities. Preparation consists of purification and, if necessary, subsequent crystallization. In addition, the laboratory is used as a support for other laboratories, both for the preparation of samples in the nano-material sector (XMIL@B) and for the crystallization of small molecules. In addition, it also carries out the activity of synthesis of materials (mainly based on phosphates) in the liquid and / or solid phase for use in the cultural heritage and biomedical sectors. Contacts: Dritan Siliqi (+39 0805929164) – dritan.siliqi@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/bio-crystallography-preparation-laboratory/
Molecular analysis and biosensoristic	The laboratory is dedicated to the quantitative analysis of molecular recognition events carried out through the application of PCR and Real-Time PCR techniques for the determination of differential gene expression from different types of samples, and electrochemical techniques for the development of sensors / biosensors. for use in the agro-environmental and medical sectors. Contacts: Giuseppina Rea (+39 0690672631) - giuseppina.rea@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/molucular-analysis-and-biosensoristic/
Biophysical Characterization	The Biophysical Characterization Laboratory houses a range of equipment for the analysis of the biophysical properties of proteins as well as intermolecular interactions. Techniques available include: UV-visible spectrophotometry; Dynamic Light Scattering for molecular size and polydispersity characterization; Differential Scanning Fluorimetry to track protein thermal stability and to qualitatively study protein-ligand interaction in HT format; Isothermal titration calorimetry by a Malvern MicroCal iTC200 to deliver direct, label-free in solution measurement of all binding parameters (binding constants (KD), reaction stoichiometry (n), enthalpy (ΔH) and entropy (ΔS)), providing a complete thermodynamic profile of the molecular interaction between binding partners in their native states; Grating Coupled Interferometry by GCI Creoptix Wave, an innovative technique developed for the high-sensitivity kinetics and affinity analysis (KD, kon, koff) of label-free molecular interactions with improved sensitivity levels respect to SPR. Contacts: Sonia Covaceuszach (+39 0403757520) - sonia.covaceuszach@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/biophysical-characterization/
Algal Growth	The laboratory allows for the growth of different algal strains of fresh and marine water sources, as well as their physiological characterization by absorption and fluorescence spectroscopy through main parameters as growth rate, cell count, microscopical observation, analysis of the main photosynthetic pigment content, photosynthetic activity. This activity enables the selection of novel biological recognition components for the development of biosensors for agro-environmental monitoring, as well as new genetic variants of the algae suitable for bioremediation applications. Finally, these studies help to produce novel functional materials and estimate their performance propensity towards cultural heritage and green building, in relation to the durability requirement in the presence of colonizing microorganisms (observations under an optical microscope) and its non-toxicity (algal vitality). Contacts: Viviana Scognamiglio (+39 0690672479) - viviana.scognamiglio@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/algal-growth/
Photosynthesis	Research is mainly focused on: i) studies of adaptation and acclimation of photochemical reactions toward biotic and abiotic stress factors; ii) unraveling the correlation between structure and functionality of pigment-protein complexes; iii) development of biological assays based on photosynthetic activity (whole cells, extracts and macromolecular assemblies) for the detection of environmental pollutants; studies on the interaction of nanomaterials and microalgae. The laboratory is equipped to perform analyses on the efficiency of the primary photosynthetic reactions and photosynthetic yield of unicellular phototrophs and higher plants. Main technics exploited in the laboratory are based on chlorophyll a fluorescence spectroscopy and polarographic detection of oxygen production or consumption rate. Contacts: Giuseppina Rea (+39 0690672631) - giuseppina.rea@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/photosynthesis/
INSIDEL@b	Laboratory dedicated to the application of computational methods to understand, characterize and design chemical systems in the context of drug discovery and predictive toxicology. Research activities focus on: i) structure-based and ligand-based drug design; ii) development of algorithms for bioactivity and toxicity prediction; iii) application of molecular dynamics simulations on complex biological systems. This computational activity is fully integrated with structural biology and medicinal chemistry experiments Contacts: Giuseppe Mangiatordi (+39 0805929158) - giuseppe.mangiatordi@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/insidelb-in-silico-molecular-design-laboratory-2/

Protein expression and purification laboratory	The protein expression and purification laboratory provides highly pure protein samples suitable for structural studies. It employs traditional and Restriction free cloning techniques to construct expression plasmids, using a wide range of bacterial expression vectors to improve protein solubility. In case of insoluble proteins, refolding protocols can be routinely optimized. The lab specializes in parallel small-scale screening in multiple bacteria strains to optimize protein quality and in scaling-up to 10L of culture to obtain milligrams of recombinant protein, using thermostatic and refrigerated shaking incubators. Large capacity refrigerated centrifuges, a high speed refrigerated centrifuge and a Sonicator allow to obtain clear extracts. Protein purification is achieved combining multiple steps of different chromatographic techniques (AC, IEX, HIC, SEC) by a FPLC AKTA PURE 25 system. A dedicated cold room is available in case of temperature sensitive targets. Contacts: Alessandro Pesaresi (+39 0403757520) – alessandro.pesaresi@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/protein-expression-and-purification-laboratory/
Mass Spectrometry lab	Laboratory dedicated to complementary mass spectrometry techniques (High-Resolution Accurate-Mass Orbitrap system, connect to Ultra-High Performance Liquid Chromatography and a MALDI-TOF spectrometer), that allow the identification and characterization of wide spectrum of compounds, from small molecules to large polymers, and that reach accuracy (nanomolar), sensitivity and resolution suitable for many applications. Contacts: Giulia Grasso (+39 0957338432) – giulia.grasso@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/mass-spectrometry
Thermodynamic Lab	The Thermodynamics laboratory is equipped with the following instruments: Differential Scanning NanoCalorimeter TA Instruments; Isothermal Titration NanoCalorimeter TA Instruments; Metrohm Autolab 86465 potentiostat; Metrohm Titrando 905 titrator. Contacts: Danilo Milardi (+39 0957338438) – danilo.milardi@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/thermodynamic/
RINT2500 RIGAKU	X-ray diffractometer using a 18kW rotating anode with copper target and a horizontal $2\theta/\theta$ goniometer (independent or coupled) with a range of measure from 4 to 145 degrees (in 2θ geometry). The diffractometer is equipped with an asymmetric Johansson Ge(111) crystal on the incident beam to select the monochromatic Cu Kα 1 radiation ($\lambda = 1.54056 \text{ \AA}$). The diffractometer is provided with two detectors: 1) NaI scintillator counter; 2) Silicon strip D/teX Ultra detector. The measurements are executed at room temperature in Debye Scherrer geometry by introducing the sample in a Lindemann glass capillary (capillary size: 0.1mm $\varnothing$ – 2.0 mm $\varnothing$), which is mounted on the axis of the diffractometer. To reduce the effect of possible preferred orientation, the capillary is rotated during measurement to improve the randomization of the orientations of the individual crystallites. Contacts: Rosanna Rizzi (+39 0805929157) – rosanna.rizzi@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/x-ray-diffractometer-rint2500-rigaku/
Synthesis laboratory	Two microwave-assisted peptide synthesizers (Liberty, CEM) are operating at the IC synthesis laboratory in Catania, capable of satisfying the growing demand for synthetic peptides. Microwave-assisted solid-phase peptide synthesis (MW-SPPS) is a very high-speed, high-efficiency technology widely used for research, recently also available on a kilo scale. MW-SPPS is advantageous in terms of yield, purity, time savings and solvent consumption. The reaction temperature in the mono-modal cavity, monitored by an internal fiber optic sensor, makes the procedure highly reproducible. MW-SPPS can be a reliable technological support for the rapid production of difficult peptide sequences and peptide conjugates, with an incomparable quality. Contacts: Giuseppe Pappalardo (+39 0957338428) – giuseppe.pappalardo@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/synthesis-laboratory/
To.Sca.Lab	Experimental and computational laboratory aiming at reconstructing structural, microstructural and dynamic behavior of nanocrystalline, partially ordered and disordered materials at different length scales (ranging from atomic resolution up to the mm size), and to correlate it with the material functional properties. Contacts: Antonietta Guagliardi (+39 0312386635) – antonella.guagliardi@ic.cnr.it Web site: http://toscalab.uninsubria.it
X-RAY Microimaging Laboratory (XMI-L@b)	Imaging diffraction facility where it is possible to collect low and high scattering angle data in transmission mode (SAXS / WAXS) or in reflection mode (GISAXS / GIWAXS). It is used for molecular and atomic scale analysis of fabrics, natural or engineered, thin films, nanostructured surfaces. Contacts: Davide Altamura (+39 0805929163) – davide.altamura@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/x-ray-microimaging-laboratory-xmi-lb/
XRD1	Hard X-ray diffraction beamline, equipped with Huber goniometer (k geometry), fully controllable remotely, coupled to a two-dimensional hybrid Dectris Pilatus 2M detector. The beamline hosts experiments of single crystal diffraction on small molecules and proteins, diffraction from powders or surfaces (in grazing incidence) and physics of high pressures. Contacts: Luisa Barba (+39 0403757524) – luisa.barba@ic.cnr.it Web site: https://www.ic.cnr.it/en/laboratorio/beamline-xrd1elettra/

PUBBLICAZIONI

www.ic.cnr.it/pubblicazioni



SUSCHEM^{IT}



GENERAL INFORMATION

National Interuniversity Consortium of Materials Science and Technology - INSTM

Via Giuseppe Giusti 9 - 50121 Firenze (FI)
sito web: <https://www.instm.it/en/instm.aspx>

CONTACTS

Prof. Federica BONDIOLI (President)
+39 055233871

Prof. Andrea CANESCHI (Director)
segreteria@instm.it (Secretariat)

DETAILED INFORMATION

Staff:

2 Full Professors
6 Researchers
1 Journalist
11 Administrative Technicians

Registered students: 422

Post Lauream Training: 50 Research fellows
29 fellows

Patents: 36

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Life science

Approaches for the prevention and treatment of bacterial and viral diseases, Development of solutions for disabilities and improvement of social life, Development of biomedical systems based on artificial intelligence (AI), Innovative therapeutic approaches, Innovative regenerative medicine approaches, Advanced diagnostic systems, Patient-Specific Medical Devices, E-health and home therapy systems, Advanced computational approaches for life sciences



Silvia Faré (+39 055233871)
direzione@instm.it

Food science

Food preservation and storage solutions, New materials for substrates for primary production, New sources for food development, Advanced nutraceuticals, development and testing of molecules, Development of food biotechnology, Technologies and new materials for packaging, Quality and food safety, valorization of raw materials and food waste products, environmental and energy sustainability, advanced computational approaches for food sciences



Silvia Faré (+39 055233871)
direzione@instm.it

Energy	Solar radiation Conversion, Electrochemical accumulators and batteries, Low temperatures Electrochemical systems, High temperatures Electrochemical systems, Production of fuels and energy carriers, Heat storage systems, Components with high mechanical and corrosion resistance, High conductivity materials electric with magnetic properties, Materials for separation, storage and process control, Production, replacement, reduction and recovery of critical materials, Advanced computational approaches for the ecological transition	  	Francesco Basile (+39 055233871) <i>direzione@instm.it</i>
Made in Italy	Biodegradable and recyclable materials and products, Innovative and high technological materials, Natural materials for jewelry and fashion industries, Enhancement of Made in Italy supply chains, Treatment and transformation of natural and synthetic materials for the furniture industry, Materials for the manufacturing industry, Integration of nanotechnologies in production processes, New transformation processes of materials for industrial uses, Innovative materials for design, Advanced computational approaches for Made in Italy	  	Paolo Fino (+39 055233871) <i>direzione@instm.it</i>
Sustainable mobility	Lightweight materials, Electronics and sensors for mobility, On-board electrical and thermal storage, Vehicle power technologies, New sustainable materials, Advanced computational approaches for the ecological transition, Magnets and engines	  	Elisabetta Di Bartolomeo (+39 055233871) <i>direzione@instm.it</i>
Advanced manufacturing	Smart Materials, Flexible Manufacturing Technologies, Hybrid Manufacturing Technologies, Critical Materials Manufacturing Technologies, Hybrid Materials, Development and Production of Metamaterials, Materials and Techniques for Micromanufacturing, Bio-based Materials for Advanced Manufacturing Techniques, Advanced manufacturing methods for material recovery and recycling, Advanced computational approaches for advanced manufacturing	  	Gianluca Cicala (+39 055233871) <i>direzione@instm.it</i>
Aerospace	High temperature metallic materials, Metallic lightweight materials, Advanced metallic materials for structural applications, Advanced ceramic materials and composites, Technopolymers and polymer matrix composites, Glasses for special applications, Functional materials, Advanced computational approaches for aerospace	  	Paolo Fino (+39 055233871) <i>direzione@instm.it</i>
Green economy	Recovery of metals and critical elements, Recycling of materials, Biodegradable materials and products, Life Cycle Assessment (LCA), Carbon footprint and Cost-Benefit Analysis (CBA), Advanced computational approaches for the green economy, Biodegradation and composting	  	Elisabetta Di Bartolomeo (+39 055233871) <i>direzione@instm.it</i>
Circular economy	Circular chemistry approaches for molecules and materials, Eco-design for reduced environmental impact and recycling at the end of life, Quantification of circularity, Valorization of biomass waste, Nanotechnologies for the development of eco-sustainable materials and products, Advanced computational approaches for the circular economy	  	Silvia Gross (+39 055233871) <i>direzione@instm.it</i>

Building preservation

Self-healing materials, Inorganic fiber-reinforced composites for structural reinforcement, High-performance fiber-reinforced concrete, Use of composite material bars in reinforced concrete, Supplementary cementing materials, Corrosion monitoring, Alternative binders to portland cement with low environmental impact, Use of materials from recycling to produce concrete, Advanced computational approaches for materials and building conservation



Luigi Coppola (+39 055233871)
direzione@instm.it

Cultural heritage

Inclusive fruition of cultural heritage, fruition of underwater cultural heritage, Management, valorisation and fruition, Monitoring, Consolidation and protection, Cleaning strategies for cultural heritage, Diagnostics and risk prevention, Digital ecosystem for tourism and cultural promotion, Advanced computational approaches for cultural heritage



Stefana Milioto (+39 055233871)
direzione@instm.it

OTHER R&D ORGANIZATIONS

BIOLab (Laboratory for Bioactive polymer materials for biomedical and environmental applications)

This laboratory focuses specifically on the study and synthesis of biodegradable and biocompatible polymer materials for use in areas such as food packaging and catalytic resin formulation, as well as biomedical and pharmaceutical applications, for instance, as matrices for controlled-release pharmaceutical delivery, or as hydrogels in tissue engineering.

Contacts: Dario Puppi (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

CASPE (Laboratory of Catalysis for Sustainable Production and Energy)

CASPE is dedicated to the development of catalysts, catalytic processes and technologies for applications in environmental protection, the reduction of greenhouse gases and the development of cleaner alternatives to chemical manufacturing processes to reduce their environmental impact.

Contacts: Siglinda Perathoner (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

Centre of Reference for Controlled porosity materials

This laboratory concentrates its research activities on the preparation and characterisation of mesoporous materials created using supramolecular assembly, ceramic-based hierarchically porous materials, carbon-based nanotubes and porous carbons and silicon. Among its activities, it also represents a point of contact between university- and industry-driven research, a role that is facilitated by its internationally renowned services, know-how and capabilities.

Contacts: Plinio Innocenzi (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

Centre of Reference for Technologies for the transformation of polymer and composite materials

This is a relatively broad field that, as well as covering materials transformation as its title suggests, also studies the use of innovative technologies to develop new polymer systems, characterising the macromolecular systems used as well as the resultant products

Contacts: Giuseppe Mensitieri (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

Centre of Reference for Nanosized materials for microelectronics and related sectors

The laboratory investigates the synthesis of various types of nanostructured systems like innovative thin film materials, new low environmental impact molecules for use as vapour phase precursors, and special shaped materials for use in leading edge applications such as nanotubes.

Contacts: Maria Elena Fragalà (+39 0552338712/23) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

Centre of Reference for Semicrystalline polymeric materials

The laboratory focuses on the synthesis of semi-crystalline polymers (mainly hydrocarbons) and the characterisation of the physical properties of polymer materials. It also analyses and develops the structure and morphology of new polymers for appropriate industrial sectors (semiconductive and conductive materials for electronics, photochromic materials for optics and electro-optic modulator materials for opto-electronics)

Contacts: Gaetano Guerra (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

Centre of Reference for Surfaces and nanostructured interphases

Large surface extension materials: synthesis, characterisation and modelling. Their particular research focus is on the synthesis, characterisation and modelling of nanostructured materials with highly developed surfaces, and their interaction with gases and liquids

Contacts: Silvia Bordiga (+39 055233871) - direzione@instm.it

Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

CRIMSON (Laboratory for modelling and simulation of molecular organisations and nanosystems)	It develops techniques for calculations linking the molecular properties of functional materials with their more visible aspects and performance in the field, when subjected to the conditions of their real working environments. These include the temperatures, pressures, and where appropriate, the applied fields to which they will be exposed, as well as any surface constrictions or nanometric-scale phenomena that may be applied Contacts: Claudio Zannoni (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
GISEL (National Centre of Reference for Electrochemical Energy Storage Systems)	Is the first and only national center in the field of research and development of advanced materials for electrochemical energy storage technologies Contacts: Claudio Gerbaldi (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
LAMM (Molecular Magnetism Laboratory)	LAMM uses magnetic techniques and magnetic resonance to investigate molecular and nano magnets. It also works with external public and private owned academic and industrial laboratories, offering state-of-the-art instruments for magnetic characterisation as well as the measurement of magnetic systems using electronic and nuclear magnetic resonance Contacts: Roberta Sessoli (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
LASCAMM (Laboratory for the synthesis and characterisation of organometallic molecular materials)	This laboratory focuses on the synthesis of new materials for low-threshold organic lasers, emitting diodes, optical switches, variable optical filters and polarisers Contacts: Iolinda Aiello (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
LINCE (Laboratory for ceramic materials technology and engineering)	This is the centre of excellence for ceramic materials. Its research focuses on conventional ceramic materials for use in the construction industry, ceramic-based engineering materials for mechanical and thermo-mechanical applications, and production of materials with high temperature wear resistance, high tenacity at high temperatures, and even superplastic properties Contacts: Laura Montanaro (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
LITS (Surface treatment engineering laboratory)	LITS' primary focus is investigation, development and modelling of surface treatments for high technology structural materials of coatings Contacts: Teodoro Valente (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
NIPLAB (Laboratory for nanocomposites and multifunctional polymeric hybrid materials)	This laboratory studies the conventional structural composite materials, to develop and characterise carbon-based nano-additives to increase the mechanical resistance of polymer nanocomposites, and to synthesise new hybrid materials for applications in sectors such as biomedicine Contacts: Jose M. Kenny (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
PREMIO (Laboratory for the preparation of innovative materials with optimised chemico-physical properties)	PREMIO carries out theoretical modelling, synthesis and characterisation of materials for various sectors and applications. This centre is unique in that it has the capabilities, equipment and instrumentation necessary to develop such materials in bulk Contacts: Lorenzo Malavasi (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx
SKIES-VILLAGE (Science, Knowledge and Innovation for Earth and Space)	Virtual Italian Laboratory for Large Scale Applications in a Geographically-distributed Environment. This laboratory is developing a virtual laboratory as the backbone of a high-performance computational grid to be distributed across the country whose purpose will be to solve certain classes of particularly complex computational problems concerning chemistry and materials science Contacts: Vincenzo Barone (+39 055233871) - direzione@instm.it Web site: https://www.instm.it/en/research/excellence_to_the_power_of_16.aspx

COLLABORATIONS WITH COMPANIES

- Acea S.p.A.
- Baker Hughes S.r.l.
- Eni S.p.A.

PUBBLICAZIONI

- **"Damp heat–stable perovskite solar cells with tailored-dimensionality 2D/3D heterojunctions"**, Randi Azmi et al., SCIENCE, 376, 2022, pp. 73–77. DOI: 10.1126/science.abm5784.
- **"A multifunctional chemical toolbox to engineer carbon dots for biomedical and energy applications"**, Luka Đorđević et al., Nature Nanotechnology, 17, 2022, pp. 112–130. DOI:10.1038/s41565-021-01051-7.
- **"Single-Atom (Iron-Based) Catalysts: Synthesis and Applications"**, Baljeet Singh et al., Chem. Rev., 121, 2021, pp. 13620–13697. DOI: 10.1021/acs.chemrev.1c00158.
- **"A comprehensive review on the nanocomposites loaded with chitosan nanoparticles for food packaging"**, Farhad Garavand et al., CRITICAL REVIEWS IN FOOD SCIENCE AND NUTRITION, 62, 2021, pp. 1383–1416. DOI: 10.1080/10408398.2020.1843133.
- **"Transition metal-catalysed molecular n-doping of organic semiconductors"**, Han Guo et al., Nature, 599, 2021, pp. 67–73. DOI: 10.1038/s41586-021-03942-0.
- **"A Complete Ab Initio View of Orbach and Raman Spin-Lattice Relaxation in a Dysprosium Coordination Compound"**, Briganti Matteo et al., Journal of the American Chemical Society, 143, 2021, pp. 13633–13645. DOI: 10.1021/jacs.1c05068.
- **"Integrated energy conversion and storage devices: Interfacing solar cells, batteries and supercapacitors"**, Fagiolari Lucia et al., Energy Storage materials, 51, 2022, pp. 400–434. DOI: 10.1016/j.ensm.2022.06.051.

MORE INFO

Technology transfer partners:

- EUREKA Venture SGR S.p.A.
- MATERIAS S.r.l.
- Mi. To Tech S.r.l.
- Techint Compagnia Tecnica Internazionale S.p.A.



**POLITECNICO
MILANO 1863**

**DIPARTIMENTO DI
INGEGNERIA CIVILE E AMBIENTALE**



GENERAL INFORMATION

Politecnico di Milano

Department of Civil and Environmental Engineering

Piazza Leonardo da Vinci 32 – 20133 Milano (MI)

sito web: <https://www.dica.polimi.it/about-us/?lang=en>

CONTACTS

Prof. Attilio FRANGI

+39 0223994213

DETAILED INFORMATION

Staff: 34 Full Professors

54 Associate Professors

36 Researchers

17 Structured Technicians

22 Administrative Technicians

2 General Services

Registered students:

Post Lauream Training: 87 enrolled in doctoral programs in Environmental and Infrastructure Engineering

72 enrolled in doctoral programs in Structural, Seismic and Geotechnical Engineering

80 Research fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Remediation

Soil and groundwater electrode-based remediation



Sabrina Saponaro (+39 0223996432)
sabrina.saponaro@polimi.it

Biotechnology

Innovative biotechnologies for efficient and sustainable wastewater treatment



Andrea Turolla (+39 0223996417)
andrea.turolla@polimi.it

Circular economy

Recovery of fertilizers and biostimulants from waste streams



Andrea Turolla (+39 0223996417)
andrea.turolla@polimi.it

Biotechnology

Bioelectrochemical remediation



Elena Sezenna (+39 0223996405)
elena.sezenna@polimi.it

Risk analysis

Risk assessment for human health and the environment related to: drinking water and wastewater, food, reclaimed wastewater for reuse



Manuela Antonelli (+39 0223996407)
manuela.antonelli@polimi.it

Trattamento acque

Removal of micropollutants (e.g. PFAS) from drinking water and wastewater: optimization and modeling of advanced treatment processes



Manuela Antonelli (+39 0223996407)
manuela.antonelli@polimi.it

Waste treatment	Mass and energy balances of waste management systems (material recycling, biological treatments, waste-to-energy plants)	 	   	Mario Grosso (+39 0223996415) <i>mario.grosso@polimi.it</i>
Biofuels	Production of biomethane from hydrogen and waste CO ₂ by anaerobic microorganisms	 	   	Francesca Malpei (+39 0223996434) <i>francesca.malpei@polimi.it</i>
Social LCA	Development of the social LCA methodology for the evaluation of the social impacts of waste management systems	 	   	Lucia Rigamonti (+39 0223994249) <i>lucia.rigamonti@polimi.it</i>
Biotechnology	Bioremediation of wastewater via microalgae/bacteria consortia	 	   	Elena Ficara (+39 0223996240) <i>elena.ficara@polimi.it</i>
Drinking water	Management of drinking water distribution networks: chemical and microbiological stability, release from materials in contact	 	   	Manuela Antonelli (+39 0223996407) <i>manuela.antonelli@polimi.it</i>
Atmospheric emissions	Stack emissions and removal efficiencies of gaseous and particulate pollutants from residential and industrial activities	 	   	Stefano Cernuschi (+39 0223996411) <i>stefano.cernuschi@polimi.it</i>
Biotechnology	Volatile fatty acid production from waste sludge and algal biomass fermentation	 	   	Elena Ficara (+39 0223996240) <i>elena.ficara@polimi.it</i>
Micropollutants	Predictive models based on molecular descriptors, treatment plant characteristics, and operational parameters for predicting micropollutant removal	 	   	Arianna Azzellino (+39 0223996432) <i>arianna.azzellino@polimi.it</i>
Microplastics	Degradation and removal of microplastics in wastewater and sludge	 	   	Francesca Malpei (+39 0223996434) <i>francesca.malpei@polimi.it</i>
LCA	Methodological developments of the life cycle assessment (LCA) for the evaluation of the environmental impacts of products and processes	 	   	Lucia Rigamonti (+39 0223994249) <i>lucia.rigamonti@polimi.it</i>
Recovery	Environmental evaluation of the integration and synergies between material and energy recovery from waste (e.g. recovery of metals from waste incineration bottom ash)	 	   	Lucia Rigamonti (+39 0223994249) <i>lucia.rigamonti@polimi.it</i>
Biofuels	Anaerobic digestion process optimization through co-digestion, pre-treatments and mathematical modelling	 	   	Arianna Catenacci (+39 0223994350) <i>arianna.catenacci@polimi.it</i>
Biodegradability	Aerobic degradation analysis of packaging materials	 	   	Giovanni Dolci (+39 0223994350) <i>giovanni.dolci@polimi.it</i>
LCA assessment	Application of the LCA methodology for the evaluation of waste, water and soil treatment technologies, and potentially sustainable products	 	   	Lucia Rigamonti (+39 0223994249) <i>lucia.rigamonti@polimi.it</i>
LCSA	Development of the LCSA (Life Cycle Sustainability Assessment) methodology for the assessment of environmental, social, and economic impacts	 	   	Lucia Rigamonti (+39 0223994249) <i>lucia.rigamonti@polimi.it</i>

Micropollutants	Data-driven source apportionment methods of micropollutants	  	Data-driven source apportionment methods of micropollutants (+39 0223996431) <i>arianna.azzellino@polimi.it</i>
Circular economy	Nutrient recovery from sewage sludge and derived products via wet chemical extraction	  	Roberto Canziani (+39 0223996410) <i>roberto.canziani@polimi.it</i>
Remediation	Soil and groundwater treatability by physical, chemical or biological technologies	  	Elena Sezenna (+39 0223996405) <i>elena.sezenna@polimi.it</i>
Waste management	Waste prevention, reuse and collection	  	Mario Grosso (+39 0223996415) <i>mario.grosso@polimi.it</i>
Renewable energies	Environmental assessments of renewable energy (wind, photovoltaic, agrivoltaic)	  	Mario Grosso (+39 0223996415) <i>mario.grosso@polimi.it</i>
Circular economy	Recovery of high-value bio-based compounds (proteins, biopolymers) from waste streams	  	Andrea Turolla (+39 0223996417) <i>andrea.turolla@polimi.it</i>
Waste management	Waste management in developing countries and international cooperation scenarios	  	Mario Grosso (+39 0223996415) <i>mario.grosso@polimi.it</i>
Water quality	Advanced monitoring of drinking water and wastewater quality (fluorescence, flow cytometry, neural networks, adaptive optimization, etc.)	  	Manuela Antonelli (+39 0223996407) <i>manuela.antonelli@polimi.it</i>

OTHER R&D ORGANIZATIONS

Fabbrica della Bioenergia (A. Rozzi Laboratory)

Bioenergy Factory is a knowledge center with three main action lines (research, service, training), aimed at promoting the development of bioenergy facilities, ensuring the achievement of maximum performance in terms of biomass treated and producible energy, while respecting the territorial vocation

Contacts: Arianna Guerreschi (+39 0372567767) - info@fabbricabioenergia.it

Laboratorio (+39 0372567769) - laboratorio@fabbricabioenergia.it

Web site: https://www.fabbricabioenergia.polimi.it/index.php?option=com_content&view=featured&Itemid=102&lang=en

LEAP - Laboratory for Energy and Environment Piacenza

Research center within the field of energy and environmental systems, with activities located within scientific research studies and consultancy, and to organization of professional training courses and scientific events in four main areas of interest: waste to value, low carbon technologies, smart energy systems, emissions and air quality

Contacts: Marina Bacis (+39 0523357711/579774) - info.leap@polimi.it

Web site: <http://www.leap.polimi.it>



**Politecnico
di Torino**



GENERAL INFORMATION

Politecnico di Torino

Department of Applied Science and Technology (DISAT)

Corso Duca degli Abruzzi 24 - 10129 Torino (TO)

sito web: <http://www.disat.polito.it>

CONTACTS

Prof. Debora FINO

+39 0110904618/4793

CREST Group: Catalytic Reaction Engineering for Sustainable Technologies

http://www.disat.polito.it/it/la_ricerca/gruppi_di_ricerca/crest

DETAILED INFORMATION

Staff: 69 Full Professors

65 Associate Professors

80 Researchers

10 Structured Technicians

23 Administrative Technicians

8 General Services

Registered students: 850 (Academic year 2021/2022)

Post Lauream Training: 75 enrolled in doctoral programs in Chemical Engineering

96 enrolled in doctoral programs in Material Science and Technology

42 enrolled in doctoral programs in Physics

90 Research fellows

30 fellows

Patents: 146

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Biorefinery

Aqueous Phase Reforming of organic compounds diluted in water solution and autothermal reforming of biogas, for the production of renewable H₂ production.
Valorization of lignin and lignocellulosic residuals by catalytic, biological and enzymatic processes. Selective hydrogenation of hexose and pentose sugars.
Conversion of animal and vegetable fats to fuel. Life Cycle Assessment (LCA)



Raffaele Pirone (+39 0110904580)
raffaele.pirone@polito.it

CCU

Photo/electro-catalytic conversion of CO₂ to high-value chemicals or fuels (syngas, H₂, methane, alcohols, etc).
Advanced oxidative processes (AOP) for wastewater treatments or transformation into useful chemicals and their integration with CO₂ reduction processes into multifunctional systems. CO₂ capture with absorbents and micro- and mesoporous materials. Desert soils quality improvement by using organic matter as fertilizer.
Thermochemical catalytic processes (e.g. power to gas) and biological processes (anaerobic or electrochemical) for bioplastics and biofuels production from CO₂ and syngas. Modelling and processes simulation and Life Cycle Assessment (LCA)



Nunzio Russo (+39 0110904710)
nunzio.russo@polito.it

Catalysts	Development of catalysts for the abatement of pollutants. Study and optimization of novel catalytic and biological processes for exploitation, valorization and reuse of wastes. Limitation of the environmental impact of production processes. Fundamental and applied research on heterogeneous catalysts, photo-catalysts and electro-catalysts	  	Debora Fino (+39 0110904710) <i>debora.fino@polito.it</i>
Agroindustry	Study of processes and sustainable technologies for monitoring quality and safety of agri-food products (foodomics). Quality and safety of agri-food products through the monitoring of indicators. Nutri-metabolomics: Study of human and food metabolic interaction to verify the food claims or to improve the food practices. Development and application of chemometric tools to automate the production process, monitoring and control or for food processing purpose	  	Francesco Geobaldo (+39 0110904633 / 0110904562) <i>francesco.geobaldo@polito.it</i>
Plant security	Development of experimental methods for the measurement of the deflagrating parameters of powder and layers of dust clouds. Development of risk assessment methods for explosive atmospheres, development of mitigation methods of the explosion hazard. Development of fire risk assessment methods in industrial and civil buildings installations. Risk assessment of the processes of production of biofuels	  	Luca Marmo (+39 0110904697 / 0110904697) <i>luca.marmo@polito.it</i>

OTHER R&D ORGANIZATIONS

CO2 Circle Lab (CCL)	The CCL infrastructure promotes an articulated variety of innovative technologies for the capture, accumulation and use of carbon dioxide emissions of anthropogenic origin (Carbon Capture Utilization and Storage - CCUS). CCL therefore focuses on the development of biotechnological, electrochemical and thermochemical processes, based on Renewable Energy Sources (RES), for the formation of products with high added value from CO ₂ , with sustainable process management. Furthermore, CCL develops CCUS processes in strong integration with energy storage systems: hubs of integrated FER-accumulation-CCUS systems (power-to-chemicals, P2C protocols); hub between the main energy networks (power-to-gas (P2G) and gas-to-power (G2P) protocols) Contacts: Fabrizio Pirri (+39 0110907355) - fabrizio.pirri@polito.it Web site: https://co2circlelab.eu/
Solar fuels laboratory	Laboratory for the development of photo/bio/electro-catalytic technologies for the conversion of CO ₂ into sustainable products Web site: https://www.disat.polito.it/the_department/internal_structures/department_labs/laboratori_area_ingegneria_chimica/solar_fuels_laboratory
Anaerobic fermentation laboratory (FERMAN)	Laboratory for the development of biotechnological processes for the transformation of waste into biofuels and biomolecules Web site: https://www.disat.polito.it/the_department/internal_structures/department_labs/laboratori_area_ingegneria_chimica/anaerobic_fermentation_laboratory_ferman
Biorefinery processes laboratory	Laboratory for the development of sustainable catalytic technologies for the production of fuels and chemical compounds through biorefinery processes Web site: https://www.disat.polito.it/the_department/internal_structures/department_labs/laboratori_area_ingegneria_chimica/biorefinery_processes_laboratory
"DISAT Excellent Departments" project	The Department of Applied Science and Technology (DISAT) is the reference structure of the Polytechnic of Turin in the cultural areas that study the foundations of matter and energy, their transformation, and related engineering applications. Through the "Departments of Excellence" project, DISAT has equipped itself with a center of excellence for ionic, electronic, optical and atomic force microscopy, an integral spectroscopic instrument Contacts: Debora Fino (+39 0110904710 , +39 0110904738) - debora.fino@polito.it Web site: http://www.disat.polito.it/it/focus/progetto_dipartimenti_di_eccellenza

COLLABORATIONS WITH COMPANIES

- ACEA
- Danieli
- Eni
- Ferrero
- General Motors Global Propulsion Systems
- Lavazza
- Technip Energies
- Versalis

https://www.disat.polito.it/it/la_ricerca/progetti_di_ricerca_finanziati

PUBBLICAZIONI

Publications available at the Institutional Repository PORTO@IRIS: <https://iris.polito.it/>

MORE INFO

Full list of research groups at DISAT:

https://www.disat.polito.it/it/la_ricerca/gruppi_di_ricerca



SAPIENZA
UNIVERSITÀ DI ROMA

GENERAL INFORMATION

Sapienza Università di Roma

Department of Chemistry

Piazzale Aldo Moro 5 - 00185 Roma (RM)

sito web: <https://www.chem.uniroma1.it/en>

CONTACTS

Prof. Luciano GALANTINI

+39 0649693269

Research contact: Raffaella Gianferri - chimicaricerca@uniroma1.it

DETAILED INFORMATION

Staff: 11 Full Professors

36 Associate Professors

28 Researchers

10 Structured Technicians

11 Administrative Technicians

5 General Services

Registered students: 2,581 (Academic year 2022/2023)

Post Lauream Training: 66 enrolled in doctoral programs in Chemical Science

2 enrolled in doctoral programs in Mathematical Modelling for Engineering, Electromagnetism, Nanoscience

4 enrolled in doctoral programs in Chemical processes for industry and the environment

24 enrolled in II level Master in Characterisation and technologies for the remediation of polluted sites

19 enrolled in II level Master in Forensic analytical methodologies

9 enrolled in II level Master in Scientific investigation techniques in the food sector

25 Research fellows

2 fellows

Patents: 37

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

 PROCESSES

 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

R&D ACTIVITIES DETAIL

Multi-stimulus polymers

Meccanismi di reazione di interesse chimico o biochimico e sintesi di nuovi copolimeri metacrilici multi-stimolo sensibili



Patrizia Gentili (+39 0649913396)
patrizia.gentili@uniroma1.it

Biomaterials

Molecules from biological precursors for the preparation of nanostructured biomaterials



Luciano Galantini (+39 0649913687)
luciano.galantini@uniroma1.it

Homogeneous catalysis

C-H functionalization by echocompatible Supramolecular catalysts



Stefano Di Stefano (+39 0649913057)
stefano.distefano@uniroma1.it

Materials

Functionalized nanomaterials for applications in nanomedicine optoelectronics and sensing



Ilaria Fratoddi (+39 0649913182)
ilaria.fratoddi@uniroma1.it

Remediation	Combined chemical-physical and biological processes for the sustainable remediation of contaminated groundwater	  	Marco Petrangeli Papini (+39 0649913948) <i>marco.petrangelipapini@uniroma1.it</i>
Bioactive compounds	Asymmetric synthesis of natural products and new compounds with antiviral and anticancer activity	  	Paolo Lupattelli (+39 0649913077) <i>paolo.lupattelli@uniroma1.it</i>
Circular economy	Treatment of e-wastes	  	Francesca Pagnanelli (+39 0649913367) <i>francesca.pagnanelli@uniroma1.it</i>
Materials	Solid state materials characterization for eco-sustainable processes	  	Ida Pettiti (+39 0649913378) <i>ida.pettiti@uniroma1.it</i>
Sustainable chemistry	Nonheme iron complexes: efficient and selective catalysts for sustainable oxidative processes	  	Osvaldo Lanzalunga (+39 0649913711) <i>osvaldo.lanzalunga@uniroma1.it</i>
Circular economy	Extraction and characterization of polyhydroxialkanoates from microbial mixed cultures	  	Andrea Martinelli (+39 0649913950) <i>andrea.martinelli@uniroma1.it</i>
Green solvents	Development of "green" extractive methods by supercritical fluids to extract bioactive molecules and biopolymers to biological matrices	  	Cleofe Palocci (+39 0649913317) <i>cleofe.palocci@uniroma1.it</i>
Circular economy	Heavy metal removal by biomasses (biosorption)	  	Francesca Pagnanelli (+39 0649913367) <i>francesca.pagnanelli@uniroma1.it</i>
Remediation	New sorbent materials and neoteric solvents for environmental and bioanalytical applications	  	Alessandra Gentili (+39 0649913230) <i>alessandra.gentili@uniroma1.it</i>
Remediation	Microalgae cultivation for the production of fine chemicals	  	Pietro Altimari (+39 0649913368) <i>pietro.altimari@uniroma1.it</i>
Energy	Solar radiation for the production of energy	  	Danilo Dini (+39 0649913986) <i>danilo.dini@uniroma1.it</i>
Heterogeneous catalysis	Eco-sustainable processes for the abatement of polluting gases and for production of hydrogen by heterogeneous catalysis	  	Daniela Pietrogiaconi (+39 0644913304) <i>daniela.pietrogiaconi@uniroma1.it</i>
Nanomaterials	Bio and nanomaterials for the delivery of nucleic acids for human cancer control	  	Cleofe Palocci (+39 0649913317) <i>cleofe.palocci@uniroma1.it</i>
Solar energy	Electrochemical devices for energy production and storage (batteries, fuel cells and electrolyzers for the production of hydrogen)	  	Maria Assunta Navarra (+39 0649913711) <i>mariassunta.navarra@uniroma1.it</i>
Materials	Bio-based polymers for biomedical and environmental applications	  	Iolanda Francolini (+39 0649913162) <i>iolanda.francolini@uniroma1.it</i>

OTHER R&D ORGANIZATIONS

Scientific calculation cluster 6DOT	6DOT is a computing platform that has 4 computing nodes, with the following configuration: 2 Intel SKL-ST4116 12C 2.1GHz; 4 16Gb DDR4; 2 NVIDIA GeForce GTX 1080Ti. The Cluster is accessible from the front-end node through the ssh protocol. The calculations are managed with a Torque / Maui-based queuing system that optimizes the available resources at best. The available development packages are: gcc, g ++, gfortran, Intel / 13.1.1, pgf / 16.1, openmpi / gcc, openmpi / icc Contacts: Marco D'Abramo - cluster6dot.chimica@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/cluster-per-il-calcolo-scientifico
Nuclear Magnetic Resonance spectroscopy (NMR) laboratories	The NMR instrumentation of the service uses a superconducting magnet at 9.4 T (400 MHz for the proton) with specific measuring heads (carbon and hydrogen) and multinuclear heads for all nuclei with resonance frequencies between that of phosphorus 31 and that of the silver 109, has the most advanced type of software and hardware and is able to perform the most modern multidimensional, homonuclear and inverse heteronuclear experiments also in relation to the presence of an efficient magnetic field gradient generation system Contacts: Francesca Leonelli (+39 0649913197) - francesca.leonelli@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/risonanza-magnetica-nucleare
Elementary Analysis Laboratory	The elemental analyzer, EA 1110 CHNS-O, is an equipment that allows the determination of the percentage of C, H, N and S in organic, inorganic solid or liquid samples (non-volatile liquids, oils). The analytical method of determination consists in: combustion of the sample (1000 ° C) followed by catalytic oxidation and reduction processes; separation of the gases produced in a gas-chromatographic column and analysis of the same with a thermal conductivity detector; signal processing and determination of the percentage of elements present in the sample with the EAGER 200 program Contacts: Maria Pia Donzello (+39 0649913330) - mariapia.donzello@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/analisi-elementare
Single Crystal X-ray Diffraction Laboratory (XRD)	The Xcalibur O diffractometer operates with a 4-circle goniometer in kappa geometry. It is equipped with a Spellman DF60N3 X-ray generator, an Opal CCD detector, a video microscope and fiber optic lighting. Work with CrysAlisPro software packag3 Contacts: Gustavo Portalone (+39 0649913106) - gustavo.portalone@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/diffrazione-raggi-x-da-cristallo-singolo
Porosimetry Laboratory for the characterization of micro- and meso-porous solids	Micrometrics 3FLEX (Surface Characterization Analyzer - porosimeter) with automatic physisorption and chemisorption analyzer for the characterization of micro- and meso-porous solids, both crystalline and amorphous, of inorganic, organic nature or with mixed organic-inorganic structure Contacts: Ida Pettiti (+39 0649913378) - ida.pettiti@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/porosimetria
Photoemission Spectroscopy Laboratory (XPS)	Integrated X-ray photoemission apparatus and photoemission spectroscopy Contacts: Andrea Giacomo Marrani (+39 0649913316) - andrea.marrani@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/spettroscopia-di-fotoemissione
Raman Spectroscopy Laboratory	Raman spectroscopy is based on the phenomenon of inelastic diffusion of electromagnetic radiation due to interaction with the vibrational and rotational motions of a molecule (Raman effect). The spectrum of light scattered by materials illuminated by a coherent and monochromatic radiation (laser) depends only on the vibrations of the chemical bonds that make up the compound under examination, allowing to obtain information on the chemical composition, the molecular structure and the intermolecular interactions. It is a non-invasive, non-destructive technique and is of fundamental interest in various fields of materials science and cultural heritage Contacts: Andrea Giacomo Marrani (+39 0649913316) - andrea.marrani@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/attrezzature-e-strumentazione/spettroscopia-raman
MSLab	UHPLC-MS/MS system with hybrid triple quadrupole-linear ion trap analyzer 6500 QTRAP Plus and Selex Ion technology (differential mobility). The analytical system is suitable for the analysis of complex liquid samples, the instrumentation is based on ultra-high performance liquid chromatography, which consent the separation of analytes, coupled with mass spectrometry for their detection. The system is characterized by ultra-high sensitivity for the detection of trace analytes. Contacts: Roberta Curini (+39 0649913559) - roberta.curini@uniroma1.it
NSC_Lab	The activities of NSC_Lab (Nanosynthesis and characterization laboratory) focus on innovative and nanostructured materials with the final aim of developing knowledge-based materials for advanced technological applications. In particular, our approach integrates the advanced synthesis methods and characterizations for organometallic complexes and rigid rod polymers, nanostructured polymers, and functionalized metal nanoparticles, for applications in optoelectronics, sensors, nanomedicine and biotechnology. Keywords: nanosynthesis, metal nanoparticles, functionalized nanopolymers, nanocomposites Contacts: Ilaria Fratoddi (+39 0649913182) - ilaria.fratoddi@uniroma1.it Web site: https://research.uniroma1.it/laboratorio/163862/#0
Sapienza NMLab	The Metabolomics Laboratory based on NMR (Nuclear Magnetic Resonance) spectroscopy of the Sapienza University (NMLab) is an integrated system of equipment and knowledge mainly dedicated to metabolomic analysis. Its nerve center is the high-resolution NMR spectrometer JNM-ECZ 600R, equipped with a 14.09 Tesla magnet, autosampler and cryoprobe Contacts: Federico Marini - nmlab.sapienza@uniroma1.it Web site: https://www.chem.uniroma1.it/nmlab/home
SAXSLab Sapienza	SAXSLab Sapienza is a structural characterization laboratory by Xenocs XEUS 2.0 X-ray diffractometer. The instrument allows measurements of Small Angle X-Ray Scattering (SAXS), Wide Angle X-ray Scattering (WAXS) and Grazing Incidence Small Angle Scattering (GISAXS). These techniques are widely applicable for the characterization of matter at the nano and meso-scale Contacts: Luciano Galantini (+39 0649913687) - saxslabsapienza@uniroma1.it Web site: https://www.chem.uniroma1.it/ricerca/saxslab

COLLABORATIONS WITH COMPANIES

- Analytical Solutions S.r.l.
- D-Art S.r.l.
- Eco Recycling S.r.l.
- RePET S.r.l.
- Trireme S.r.l.

MORE INFO

The Chemistry Department has numerous research collaborations with Italian and foreign companies. These include those for the implementation of Research, Development and Innovation Projects of potential interest to companies in Lazio (on FESR funds European Regional Development Fund 2014-2020 POR). Furthermore, it participates in the DTC Lazio, Center of Excellence of the Technological District of Culture of the Lazio Region. Some of the PhD scholarships in Chemical Sciences are financed by the Lazio Region as innovation doctorates in collaboration with companies



GENERAL INFORMATION

Scuola Normale Superiore

Faculty of Sciences

Piazza dei Cavalieri 7 - 56126 Pisa (PI)

sito web: <https://www.sns.it/en/faculty-sciences>

CONTACTS

Prof. Luigi AMBROSIO

+39 050509255

DETAILED INFORMATION

Staff: 16 Full Professors

10 Associate Professors

14 Researchers

222 Structured and Administrative Technicians

Registered students: 167 (Academic year 2021/2022)

Post Lauream Training: 21 enrolled in Doctorates in Methods and models for molecular sciences; astrochemistry

67 Research fellows

Patents: 24

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Photocatalysis

Modeling design of photocatalytic materials to produce renewable energy and/or to degrade environmental pollutants



Nicola Tasinato (+39 0509783)
nicola.tasinato@sns.it

Global warming

Quantification of the environmental impact of anthropogenic greenhouse gases by evaluation of their radiative forcing and atmospheric reactivity



Nicola Tasinato (+39 0509783)
nicola.tasinato@sns.it

OTHER R&D ORGANIZATIONS

The Ennio De Giorgi Mathematical Research Centre

Contacts: Andrea Malchiodi - andrea.malchiodi@sns.it

Web site: <https://www.sns.it/en/ennio-de-giorgi-mathematical-research-centre>

The "Carlo Azeglio Ciampi" Institute of Advanced Studies

Contacts: Mario Pianta - mario.pianta@sns.it

Web site: <https://www.sns.it/en/carlo-azeglio-ciampi-institute-advanced-studies>

Biology Laboratory

Contacts: Antonino Cattaneo - antonino.cattaneo@sns.it

Web site: <https://www.sns.it/it/laboratorio-di-biologia>

DocStAr Laboratory

Contacts: Flavio Fergonzi - flavio.fergonzi@sns.it

Web site: <https://www.sns.it/en/laboratorio-di-documentazione-storico-artistica-docstar>

NEST Laboratory

Contacts: Fabio Beltram - fabio.beltram@sns.it
Web site: <https://www.sns.it/en/nest-laboratory>

SAET Laboratory

Contacts: Anna Magnetto - anna.magnetto@sns.it
Web site: <https://www.sns.it/en/laboratorio-di-storia-archeologia-epigrafia-tradizione-dellantico-saet>

SMART Laboratory

Contacts: Vincenzo Barone - vincenzo.barone@sns.it
Web site: <https://www.sns.it/en/laboratorio-strategie-multidisciplinari-applicate-alla-ricerca-e-alla-tecnologia-smart>



GENERAL INFORMATION

Tecnopole of the Università di Ferrara

Terra&Acqua Tech Laboratory

Via Luigi Borsari 46 - 44121 Ferrara (FE)

sito web: <https://www.tat.tecnopolo.fe.it/>

CONTACTS

Prof. Luisa PASTI

+39 0532455346

Laboratory afferent to the Tecnopolo of Ferrara, connected to the Departments of: Chemistry and Pharmaceutical Sciences, Physics and Earth Sciences, Engineering, Life Sciences and Biotechnology

<https://www.tecnopolo.fe.it/laboratori/>

DETAILED INFORMATION

Staff: 13 Full Professors

17 Associate Professors

14 Researchers

2 Structured Technicians

2 Administrative Technicians

Registered students:

Post Lauream Training: 13 Research fellows

Patents: 5



Università Ca' Foscari Venezia



Dipartimento di Scienze Molecolari e Nanosistemi

GENERAL INFORMATION

Ca' Foscari University Venice

Department of Molecular Sciences and Nanosystems

Via Torino 155 - 30172 Venezia (VE)

sito web: <https://www.unive.it/pag/28233>

CONTACTS

Prof. Maurizio SELVA

+39 0412348687

DETAILED INFORMATION

Staff: 16 Full Professors

22 Associate Professors

16 Researchers

13 Structured Technicians

11 Administrative Technicians

1 General Services

Registered students: 486 (Academic year 2022/2023)

Post Lauream Training: 22 enrolled in doctorates in Chemistry

31 enrolled in doctorates in Bio and Nanomaterials

18 Research fellows

8 fellows

Patents: 21 Patent Summary

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Cultural heritage

Development of heterogeneous catalysts and formulation of materials for applications in cultural heritage



Federica Menegazzo (+39 0412348551)
fmenegaz@unive.it

Micellar catalysis

Catalysis (micellar, supramolecular, homogeneous and heterogeneous), green chemistry, hydrogen peroxide activation, synthesis of APIs in water



Alessandro Scarso (+39 0412348569)
alesca@unive.it

Nanomaterial characterisation

Synthesis and structural characterization (by way of TEM, SEM, XRD) of nanomaterials (Perovskites, Quantum dots and Carbon Dots)



Patrizia Canton (+39 0412346790)
cantonpa@unive.it

Sustainable polymers

Development of sustainable high-performance polymeric and nanostructured materials from renewable resources for biomedical and environmental applications



Matteo Gigli (+39 0412348655)
matteo.gigli@unive.it

Glass

Study of the environment - glass surface interaction



Elti Cattaruzza (Elti Cattaruzza)
cattaruz@unive.it

Metal drugs	Synthesis of organometallic compounds of transition metals to be used as anticancer agents				Fabiano Visentin (+39 04 12348571) <i>fvisen@unive.it</i>
Ionic liquids	Ionic liquids, carbon dots, waste valorization, green chemistry, green solvents				Alvise Perosa (+39 04 12348958) <i>alvise@unive.it</i>
Fine chemicals	Preparation of new active catalysts in aqueous environment and their use for the synthesis of fine chemicals				Stefano Paganelli (+39 04 12348592) <i>spag@unive.it</i>
Organic synthesis	Organic synthesis for pharmaceutical intermediates and supramolecular chemistry				Fabrizio Fabris (+39 04 12348908) <i>farisfa@unive.it</i>
Sustainable chemistry	Organic synthesis, green chemistry, upgrading of platform chemicals				Giulia Fiorani (+39 04 12348486) <i>giulia.fiorani@unive.it</i>
Green synthesis	Green organic syntheses, dimethylcarbonate, polymeric biofilms, valorization of agro-food waste				Maurizio Selva (+39 04 12348679) <i>selva@unive.it</i>
Nanocomposites	Biopolymer-based nanocomposites for biomedical and environmental applications				Massimo Sgarzi (+39 04 12348566) <i>massimo.sgarzi@unive.it</i>
Catalysts	Synthesis and characterization of new catalytic systems for eco-sustainable industrial reactions				Lucio Ronchin (+39 04 12348626) <i>ronchin@unive.it</i>
Sustainable processes	Development of sustainable processes and formulation of materials for industrial applications (catalytic processes, nutraceutical pharmaceutical cosmetics)				Michela Signoretto (+39 04 12348650) <i>miky@unive.it</i>
Infrared spectroscopy	Study of infrared spectra of gaseous compounds				Paolo Stoppa (+39 04 12348513) <i>stoppa@unive.it</i>
Biopharmaceuticals	Development and production of peptides and proteins for pharmaceutical and biotechnological applications				Alessandro Angelini (+39 04 12348600) <i>alessandro.angelini@unive.it</i>
Smart polymers	Eco-sustainable synthesis of polymers for innovative, "high performance" and "smart" materials				Andrea Vavasori (+39 04 12348577) <i>vavasori@unive.it</i>
Lignocellulosic materials	Valorization of lignocellulosic waste materials, lignin and tannins: structural analysis and product and materials development				Claudia Crestini (+39 04 13248546) <i>claudia.crestini@unive.it</i>
Spectroscopy	Spectroscopic Techniques and Computational Modeling of Molecular, Supramolecular and Periodic Systems				Andrea Pietropolli Charmet (+39 04 12348541) <i>jacpnike@unive.it</i>
Biomedical applications	Synthesis and characterization of materials for biomedical applications				Pietro Riello (+39 04 12348518) <i>riellop@unive.it</i>
Nanomaterials	Development of 0-3-D nanomaterials for environmental and energy-related applications. Innovative added-value materials from valorization of agro-industrial				Elisa Moretti (+39 04 12346745) <i>elisa.moretti@unive.it</i>

Luminescent complexes	Synthesis and characterization of transition metal and lanthanide luminescent complexes for advanced technology	  	Marco Bortoluzzi (+39 0412348651) <i>markos@unive.it</i>
Sustainable materials	Upcycling of agro-industrial, fossil based plastic waste for the production of materials with high added value for the manufacturing industry	  	Valentina Beghetto (+39 0412348928) <i>beghetto@unive.it</i>
Waste valorisation	Development of materials and Hi-Tech solutions for the productions of energy and chemicals from the upgrade of wastes	  	Elena Ghedini (+39 0412348552) <i>ghedina@unive.it</i>

OTHER R&D ORGANIZATIONS

Center for Scientific Instrumentation Services of the University (CSA)

The CSA is the Center for the acquisition, management and enhancement of the Ca' Foscari scientific equipment. Among its objectives, the Center has that of competing, also in collaboration with public and private partnerships, for the acquisition of funds specifically dedicated to highly complex, innovative and multidisciplinary equipment. Furthermore, it designs and manages technological platforms available to internal and external users of the university, capable of integrating different skills and producing highly qualified research and services in favor of the territory

Contacts: Claudia Crestini - claudia.crestini@unive.it

Web site: <https://www.unive.it/pag/27859/>

COLLABORATIONS WITH COMPANIES

- Bio4Dreams
- Biofuture Medicine
- Braskem
- Cheers2life S.r.l.
- Clariant S.p.A.
- Crossing S.r.l.
- ENI Versalis S.p.A.
- Eurovo - Evobiotix
- Fidia Farmaceutici S.p.A.
- Nuova Ompi S.r.l.
- Rete Ribes Nest
- Rigoni di Asiago
- SG Stevanato Group
- Unifarco S.p.A.
- UniSve
- Ve Nice S.r.l.
- Veneto Green Cluster

PUBBLICAZIONI

- S.Pluda, Y.Mazzocato, A.. Angelini (2021), "**Peptide-based inhibitors of ADAM and ADAMTS metalloproteinases**", *Frontiers in Molecular Biosciences*. 8, 703715
- G. Pintori, E. Cattaruzza, "**XPS/ESCA on glass surfaces: a useful tool for ancient and modern materials**", *Opt. Mater. X* 13 (2022) 100108 (40pp)
- G. Pintori, S. Panighello, O. Pinato, E. Cattaruzza, "**Insights on surface analysis techniques to study glass primary packaging**", *Int. J. Appl. Glass Sci.* 14 (2023) 468–479
- "**Agri-Food Wastes for Bioplastics: European Prospective on Possible Applications in Their Second Life for a Circular Economy**", *Crossing S.r.l.*
- "**Plastics today: Key challenges and EU strategies towards carbon neutrality: A review**", *CrossingS.r.l.*

MORE INFO

- Partner searches for joint PhDs in Sustainable Chemistry
- Partner research for joint PhDs in Science and Technology of Bio and Nanomaterials
- Partner searches for national and international cooperative projects



GENERAL INFORMATION

Università degli Studi del Piemonte Orientale

Department for the Sustainable Development and Ecological Transition (DISSTE)

Piazza S. Eusebio 5 - 13100 Vercelli (VC)

sito web: <https://www.disste.uniupo.it/en>

CONTACTS

Prof.ssa Roberta LOMBARDI

+39 0131283887

DETAILED INFORMATION

Staff: 12 Full Professors

20 Associate Professors

14 Researchers

3 Structured Technicians

15 Administrative Technicians

5 General Services

Registered students: 275 (AY 2022/2023)

Post Lauream Training: 20 enrolled in doctoral programs in Chemistry & Biology

11 Research fellows

9 fellows

Patents: 12

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Energy materials

Hierarchical porous catalytic supports for green chemistry



Enrica Gianotti (+39 0131360251)
enrica.gianotti@uniupo.it

Polymer recycle

Development and application of methods for the characterization of polymeric materials of various nature (post-consumer HDPE, polyurethanes) subjected to recycling and/or valorisation processes



Eleonora Conterosito
eleonora.conterosito@uniupo.it

Materials

Extraction of critical raw materials (i.e. Rare Earth Elements) from waste from Electrical and Electronic Waste (RAEE) and photonic devices



Flavia Artizzu (+39 0131360252)
flavia.artizzu@uniupo.it

Waste recovery

Analytical methods for the evaluation of the composition of agrifood waste towards recovery and valorisation



Maurizio Aceto (+39 0131360265)
maurizio.aceto@uniupo.it

Circular economy

Recovery of raw materials from cells and batteries, valorisation of materials from the disposal of exhausted photovoltaics, physical and chemical processes with low environmental impact for the separation and extraction of ions and compounds of interest through the use of bio-based complexing agents



Elisabetta Gabano (+39 0131360263)
elisabetta.gabano@uniupo.it

Circular economy	Materials recovery from cereal waste. Strategies for the reuse and revalue of biogenic mineral materials. Strategies for the reuse of concrete demolition waste (CDW). Materials for the recovery and separation of pollutants (heavy metals, pesticides, drugs) from waste streams. Synthesis of functional (nano)materials with low energetic and environmental impact. Determination of plastic contaminants in organic waste and biomasses	    	Enrico Boccaleri (+39 0131360264) <i>enrico.boccaleri@uniupo.it</i>
Energy materials	Processes and materials for the preparation of membranes for gas separation (N ₂ / CO ₂ / CH ₄). Processes and materials for energy production with low environmental impact. Study of metal alloy surfaces for biomedical applications. Materials and processes for gas storage (CH ₄ , H ₂ and CO ₂)	    	Giorgio Gatti <i>giorgio.gatti@uniupo.it</i>
Sustainable polymers	Second life processes for PlasmIX (PHOENIX). Green processes and materials for the chemical valorisation of plastic waste	    	Valentina Gianotti (+39 0131360271) <i>valentina.gianotti@uniupo.it</i>
Reversible polymers	Development of reversible polymer networks for industrial applications	    	Chiara Ivaldi <i>chiara.ivaldi@uniupo.it</i>

OTHER R&D ORGANIZATIONS

UP04Sustainability

Interdepartmental Centre UP04Sustainability: Environment, Economy, Society and Education
Contacts: Enrico Boccaleri (+39 0131360264) - enrico.boccaleri@uniupo.it

COLLABORATIONS WITH COMPANIES

- 3P
- CNVV
- Metlac
- RaeeMan
- Sermag
- Tecno CM
- UVEX Cagi

GENERAL INFORMATION

Università degli Studi del Piemonte Orientale
Department of Pharmaceutical Sciences (DSF)

Largo Donegani 2/3 – 28100 Novara (NO)
sito web: <http://www.dsf.uniupo.it/en>

CONTACTS

Prof. Armando GENAZZANI
+39 0321375827

DETAILED INFORMATION

Staff: 11 Full Professors
23 Associate Professors
17 Researchers
8 Structured Technicians
14 Administrative Technicians

Registered students: 1,316 (Academic year 2023/2024)

Post Lauream Training: 34 enrolled in Doctorate in "Drug Innovation"

18 enrolled in II level Master in Regulatory affairs and market access in the pharmaceutical and biotechnology fields

15 Research fellows

6 Fellows

Patents: 6 <https://s.uniupo.it/zxtqk>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Up-Cycled Ingredients

Isolation and valorisation of prebiotic oligosaccharides from food industry byproducts



Matteo Bordiga (+39 0321375873)
matteo.bordiga@uniupo.it

Recycling

Development of pharmaceutical and cosmetic products using sericin recovered from byproducts of silk textile processing



Elia Bari (+39 0321375725)
elia.bari@uniupo.it

Chelators

Chelating agents and complexes. Contrast agents. Fine chemicals and APIs from renewable sources. Development of green chemical processes



Giovanni Battista Giovenzana (+39 0321375846)
giovannibattista.giovenzana@uniupo.it

Green chemistry

Plant-derived added-value products for pharmaceutical, nutritional, cosmetic and agricultural use



Diego Caprioglio (+39 0321375843)
diego.caprioglio@uniupo.it

Recycling

Pharmaceutical development of milk exosomes, isolated from byproducts of the dairy industry, as drug delivery systems



Maria Luisa Torre (+39 0321375728)
marialuisa.torre@uniupo.it

Renewable materials

Synthesis of new bioactive compounds from secondary metabolites deriving from industrial wastes



Alberto Minassi (+39 0321375843)
alberto.minassi@uniupo.it

Multi-component reactions

Multi-component reactions (MCRs) and micellar catalysis for the synthesis of fine chemicals and Active Pharmaceutical Ingredients (APIs)



Gian Cesare Tron (+39 0321375857)
giancesare.tron@uniupo.it

Pharmaceutical technology	Advanced technology in the production of modified-release drug dosage forms	    	Franco Pattarino (+39 0321375863) <i>franco.pattarino@uniupo.it</i>
Natural products	Isolation and characterization of natural products from plant for pharmaceutical, nutritional, agricultural and cosmetic applications	    	Federica Pollastro (+39 0321375744) <i>federica.pollastro@uniupo.it</i>
Up-Cycled Ingredients	Formulation of food ingredients rich in fibres from plant materials and food byproducts	    	Jean Daniel Coïsson (+39 0321375773) <i>jeandaniel.coïsson@uniupo.it</i>
Up-Cycled Ingredients	Isolation, characterisation and formulation of pigments and dyes from agri-food byproducts and alternative sources	    	Marco Arlorio (+39 0321375772) <i>marco.arlorio@uniupo.it</i>
Up-Cycled Ingredients	Production and characterization of innovative food ingredients using enzymatic processes and concentration systems	    	Fabiano Travaglia (+39 0321375876) <i>fabiano.travaglia@uniupo.it</i>
Sustainable technologies	Spray drying in the cosmetic field as a sustainable and time-saving process to produce powdered materials starting from liquid feedstocks	    	Lorella Giovannelli (+39 0321375865) <i>lorella.giovannelli@uniupo.it</i>
Sustainable processes	Synthesis of bioactive molecules with low-impact chemo-enzymatic methods. Synthesis of high added value chemicals from natural sources	    	Luigi Panza (+39 0321375845) <i>luigi.panza@uniupo.it</i>
Green formulations	Formulation development and production of microparticle systems for pharmaceutical and nutraceutical application using sustainable excipients and technologies	    	Lorena Segale (+39 0321375862) <i>lorena.segale@uniupo.it</i>
Up-Cycled Ingredients	Extraction and formulation of polyphenols with antioxidant properties from agri-food byproducts	    	Monica Locatelli (+39 0321375774) <i>monica.locatelli@uniupo.it</i>
Materials chemistry	Luminescent and/or multifunctional (nano)materials for sensing, diagnosis and theranostic. Heterogeneous catalysis	    	Ivana Miletto (+39 0321375747) <i>ivana.miletto@uniupo.it</i>
Drug discovery	Accelerated drug discovery and development relying on click chemistry and multicomponent reactions	    	Tracey Pirali (+39 0321375853) <i>tracey.pirali@uniupo.it</i>

OTHER R&D ORGANIZATIONS

UP04Sustainability

Interdepartmental Center

Contacts:

Director: Enrico Boccaleri.

Contact person for the Department:

Giovanni Battista Giovenzana (+39 0321375846) - giovannibattista.giovenzana@uniupo.it

Web site: <https://www.uniupo.it/it/ricerca/centri-di-ricerca-e-infrastrutture/centri-interdipartimentali/centro-interdipartimentale-upo4sustainability-environment-economy-society-and-education>

COLLABORATIONS WITH COMPANIES

- Adipogen
- Bracco S.p.A.
- CAGE Chemical S.r.l.
- Canvasalus S.r.l.
- Costantino S.p.A.
- Ice Pharma S.p.A.
- Extrasynthese
- Linnea
- Mil Mil 76 S.p.A.
- Millbo S.r.l.
- Novamont S.p.A.
- Novi Elah Dufour S.p.A.
- Paglieri S.p.A.
- Procemsa S.p.A.
- Procos S.p.A.
- Roelmi HPC S.r.l.
- Skye Bioscience
- Zschimmer & Schwarz S.p.A.

PUBBLICAZIONI

- Blandino, M., Locatelli, M., Gazzola, A., Coisson, J.D., Giacosa, S., Travaglia, F., Bordiga, M., Reyneri, A., Rolle, L., Arlorio, M., 2015, "**Hull-less barley pearling fractions: Nutritional properties and their effect on the functional and technological quality in bread-making**", J. Cereal Sci. 65, 48–56.
- Brunelli, F., Aprile, S., Russo, C., Giustiniano, M., Tron, G.C., 2022, "**In-water synthesis of isocyanides under micellar conditions**", Green Chem. 24, 7022–7028.
- Jaouhari, Y., Travaglia, F., Giovannelli, L., Picco, A., Oz, E., Oz, F., Bordiga, M., 2023, "**From Industrial Food Waste to Bioactive Ingredients: A Review on the Sustainable Management and Transformation of Plant-Derived Food Waste**", Foods 12, 2183.
- Miletto, I., Gionco, C., Paganini, M.C., Cerrato, E., Marchese, L., Gianotti, E., 2022, "**Red Upconverter Nanocrystals Functionalized with Verteporfin for Photodynamic Therapy Triggered by Upconversion**", Int. J. Mol. Sci. 23, 6951.
- Orlandi, G., Faragò, S., Menato, S., Sorlini, M., Butti, F., Mocchi, M., Donelli, I., Catenacci, L., Sorrenti, M.L., Croce, S., Segale, L., Torre, M.L., Perteghella, S., 2020, "**Eco-sustainable silk sericin from by-product of textile industry can be employed for cosmetic, dermatology and drug delivery**", J. Chem. Technol. Biotechnol. 95, 2549–2560.
- Salamone, S., Waltl, L., Pompignan, A., Grassi, G., Chianese, G., Koeberle, A., Pollastro, F., 2022, "**Phytochemical Characterization of Cannabis sativa L. Chemotype V Reveals Three New Dihydrophenanthrenoids That Favorably Reprogram Lipid Mediator Biosynthesis in Macrophages**", Plants 11, 2130.
- Travagin, F., Lattuada, L., Giovenzana, G.B., 2021, "**AAZTA: The rise of mesocyclic chelating agents for metal coordination in medicine**", Coord. Chem. Rev. 438, 213908.

GENERAL INFORMATION

Università degli Studi del Piemonte Orientale
Department of Science and Technological Innovation

Viale T. Michel 11 – 15121 Alessandria (AL)

sito web: <http://www.disit.uniupo.it>

CONTACTS

Prof. Leonardo MARCHESE

+39 0131360393

DETAILED INFORMATION

Staff: 17 Full Professors

32 Associate Professors

19 Researchers

2 Technologists

12 Structured Technicians

31 Administrative Technicians

Registered students: 3,451 (Academic year 2022/2023)

Post Lauream Training: 29 enrolled in doctoral programs in Chemistry & Biology

11 Research fellows

Patents: 27 <https://www.knowledge-share.eu/proprietario/universita-del-piemonte-orientale/>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Materials	Materials for the recovery of pollutants. Solids and processes for the oxidative decomposition of toxic molecules		Chiara Bisio chiara.bisio@uniupo.it
Innovative cements	Design and development of new cement systems produced with sustainable process and with reduced carbon footprint		Geo Paul geo.paul@uniupo.it
Organic chemistry	Synthesis of polydentate chelators for the stable complexation of metal ions of interest for MRI and nuclear medicine (PET/SPECT/ α -therapy) applications		Lorenzo Tei lorenzo.tei@uniupo.it
Self-assembling systems	Investigation of self-assembling systems		Katia Sparnacci katia.sparnacci@uniupo.it
Metabolomics	NMR applied to the metabolomic studies		Daniela Lalli daniela.lalli@uniupo.it
Medical diagnostics	Design of new paramagnetic metal chelates and nanosystems ad potential MRI and theranostic probes		Mauro Botta mauro.botta@uniupo.it
New drugs	Synthesis and chemical-biological characterization of prodrugs with antiproliferative activity		Mauro Ravera mauro.ravera@uniupo.it
Computational chemistry	Development and application of computational techniques applied to materials chemistry		Maurizio Cossi maurizio.cossi@uniupo.it

Metals recovery	Green processes and materials for the recovery of metals from aqueous solutions	  	Fabio Carniato <i>fabio.carniato@uniupo.it</i>
Sustainable materials	Processes and materials for gas adsorption. Innovative coatings for magnesium-based light alloys	  	Marco Milanesio <i>marco.milanesio@uniupo.it</i>
Innovative polymers	Development of polymers and copolymers for microelectronics and their characterization	  	Michele Laus <i>michele.laus@uniupo.it</i>
Gas storage	Processes and materials for energy production with low environmental impact. Materials and processes for gas storage (CH ₄ , H ₂ and CO ₂)	  	Leonardo Marchese <i>leonardo.marchese@uniupo.it</i>

OTHER R&D ORGANIZATIONS

CUSA	Interdepartmental Center for research and training on asbestos and health impact issues: university centers for asbestos studies Contacts: cusa@uniupo.it
Nano-SisTEMI	Interdisciplinary Center for Nanosciences and Technological Development of Innovative Materials (nano-Systems) Contacts: Leonardo Marchese - leonardo.marchese@uniupo.it
PRISMA	Magnetic Resonance Platform dedicated to Nuclear Magnetic Resonance (NMR) techniques Contacts: Mauro Botta - mauro.botta@uniupo.it Web site: https://www.prisma.uniupo.it/
UP04Sustainability	Interdepartmental Centre UP04Sustainability: Environment, Economy, Society and Education Contacts: Enrico Boccaleri (+39 0131360264) - enrico.boccaleri@uniupo.it

COLLABORATIONS WITH COMPANIES

- Basalti Orvieto S.r.l.
- Bracco Imaging S.p.A.
- CDG s.r.l.
- Galstaff Multiresine S.p.A.
- GAMBIT S.r.l.
- Gurit Italy s.r.l.
- Rubicon Biotechnology
- Società Serica Trudel S.p.A.
- Solvay S.p.A.
- Stelar S.r.l.
- Wamgroup S.p.A.
- Wintershall Dea AG

PUBBLICAZIONI

- Chem. Sci., 2021, 12, 11138–11145
- Journal of Physical Chemistry C, 2021, 125, 9261–9272
- European Polymer Journal, 2023, 192, 112058
- Toxics, 2022, 10, 103



GENERAL INFORMATION

Università degli Studi della Basilicata

Department of Sciences

Viale dell'Ateneo Lucano 10 – 85100 Potenza (PZ)

sito web: <http://scienze.unibas.it/site/home.html>

CONTACTS

Prof. Roberto TEGHIL

+ 39 0971205513 - 5768

DETAILED INFORMATION

Staff: 10 Full Professors

32 Associate Professors

26 Researchers

15 Structured Technicians

7 Administrative Technicians

Registered students: 483 (Academic year 2022/2023)

Post Lauream Training: 38 enrolled in doctoral programs in Sciences

Patents: - <https://ricerca.unibas.it/site/home/trasferimento-tecnologico/articolo23010530.html>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Catalysis	Design, synthesis of noble metal complexes for sustainable catalysis applications	    	Annalisa Mariconda (+39 0971205932) annalisa.mariconda@unibas.it
Photocatalysis	Theoretical and computational study of charge localization and charge transfer in innovative materials for third-generation photovoltaics and photocatalytic applications	    	Francesco Ambrosio francesco.ambrosio@unibas.it
Electrochemical sensors	Development and characterization of innovative electrochemical sensors for the detection of compounds of biological and food interest	    	Rosanna Ciriello (+39 0971205944) rosanna.ciriello@unibas.it
Self-repairing materials	Design and synthesis of copolymers in the development of self-healing composite materials	    	Annalisa Mariconda (+39 0971205932) annalisa.mariconda@unibas.it
Eco-friendly materials	Design and synthesis of microfibrillar electrospun innovative materials inspired by nature	    	Brigida Bochicchio (+39 0971205481) brigida.bochicchio@unibas.it
Mass spectrometry	Development of analytical methods for the determination of metabolites in food and environmental samples by LC-UV and high-resolution mass spectrometry	    	Giuliana Bianco (+39 0971205451) giuliana.bianco@unibas.it
Chiral molecules	Spectroscopic and computational methodologies for the stereochemical analysis of chiral molecules and stereoselective synthesis of drugs and biopesticides	    	Stefano Superchi (+39 0971206098) stefano.superchi@unibas.it

Biomaterials

Design development and characterization of biomimetic scaffolds from (poly)peptides and derivatives for biomedical applications



Antionietta Pepe (+39 0971205486)
antionietta.pepe@unibas.it

Organic photovoltaics

Synthesis and characterization of new molecular systems to be used in the fields of optoelectronics, organic photovoltaics and in the environmental field



Sandra Belviso (+39 0971205937)
sandra.belviso@unibas.it

COLLABORATIONS WITH COMPANIES

- ALMACABIO S.r.l.
- BIOINNOVA s.r.l.s.
- Dompé farmaceutici S.p.A.
- Eni S.p.A.
- GIVAD S.r.l.
- Lucart S.p.A.
- SAIPEM S.p.A.
- SHELL Italia
- TOTAL ENERGIES Italia

PUBBLICAZIONI

- Onzo A, Acquavia MA, Pascale R, Iannece P, Gaeta C, Lelario F, Ciriello R, Tesoro C, Bianco G, Di Capua A. **Untargeted metabolomic analysis by ultra-high-resolution mass spectrometry for the profiling of new Italian wine varieties.** Anal Bioanal Chem. 2022 Nov;414(27):7805-7812. doi: 10.1007/s00216-022-04314-x. Epub 2022 Sep 19. PMID: 36121471.
- M.-B. Coltelli, L. Panariello, A. Vannozzi, V. Gigante, A. Gagliardini, P. Morganti, P. Cinelli, A. Lazzeri, A. De Bonise, P. Falabella, **Chitin and Its Derivatives: Nanostructured Materials from Different Marine and Terrestrial Sources**, Chemical Engineering Transactions. 93 (2022) 295-300. doi:10.3303/CET2293050.
- Radice RP, Fiorentino R, De Luca M, Limongi AR, Viviano E, Bermano G, Martelli G. **An innovative protocol to select the best growth phase for astaxanthin biosynthesis in *H. pluvialis*.** Biotechnol Rep (Amst). 2021 Jun 18;31:e00655. doi: 10.1016/j.btre.2021.e00655. PMID: 34258244; PMCID: PMC8253952.
- Tesoro C, Ciriello R, Lelario F, Di Capua A, Pascale R, Bianco G, Dell'Agli M, Piazza S, Guerrieri A, Scrano L, Bufo SA, Acquavia MA. **Development and Validation of a Reversed-Phase HPLC Method with UV Detection for the Determination of L-Dopa in *Vicia faba* L. Broad Beans.** Molecules. 2022 Nov 2;27(21):7468. doi: 10.3390/molecules27217468. PMID: 36364292; PMCID: PMC9654252.
- Lela L, Russo D, De Biasio F, Gorgoglione D, Ostuni A, Ponticelli M, Milella L. ***Solanum aethiopicum* L. from the Basilicata Region Prevents Lipid Absorption, Fat Accumulation, Oxidative Stress, and Inflammation in OA-Treated HepG2 and Caco-2 Cell Lines.** Plants (Basel). 2023 Aug 3;12(15):2859. doi: 10.3390/plants12152859. PMID: 37571013; PMCID: PMC10421219.

MORE INFO

Joint PhDs:

- Bando XXXVIII ciclo

ALLEGATO 1/c Corso di Dottorato di ricerca: SCIENZE XXXVIII CICLO – a.a. 2022-2023

<https://portale.unibas.it/site/home/didattica/dottorati-di-ricerca/articolo10238.html>

- Bando dottorati XXXIX ciclo

ALLEGATO 1/c Corso di Dottorato di ricerca: SCIENZE XXXIX CICLO – a.a. 2023-2024

<https://portale.unibas.it/site/home/didattica/dottorati-di-ricerca/articolo11228.html>



GENERAL INFORMATION

Università degli Studi dell'Aquila

Department of Industrial and Information Engineering and Economics (DIIIE)

Piazzale Ernesto Pontieri 1 - 67100 Monteluco di Roio (AQ)

sito web: <http://diiie.univaq.it/>

CONTACTS

Prof. Walter D'AMBROGIO

+39 0862434838 (Didactic secretariat)

DETAILED INFORMATION

Staff: 45 Full Professors

33 Associate Professors

41 Researchers

17 Structured Technicians

11 Administrative Technicians

Registered students: 5,264 (Academic year 2022/2023)**Post Lauream Training:** 50 enrolled in Doctorate in Industrial and Information Engineering and Economics**Patents:** 61

DATASHEET ICONS

PRODUCTS

PROPRIETARY SEARCH

PROCESSES

THIRD PARTY RESEARCH

SERVICES

TECHNOLOGIES

R&D ACTIVITIES DETAIL

Chemical plants

Study and experimentation of processes for the treatment of industrial and civil wastewater aimed at the removal and/or degradation of pollutants, the recovery of by-products and the saving and reuse of water, with a view to a circular economy. Analysis of chemical industrial processes using dedicated software (Aspen Plus, SuperPro Designer) and design of chemical equipment. Analysis of economic, environmental sustainability and safety aspects of chemical industrial processes. study and modeling of accident scenarios (pollutant dispersion, fire and explosion) and risk analysis of chemical industrial plants



Marina Prisciandaro (+39 0862434241)
marina.prisciandaro@univaq.it

CRM

Recovery of Rare Earths, precious and base metals from WEEE, spent batteries, industrial wastes, permanent magnets, solar panels and industrial tailing with circular economy approach by integrated hydrometallurgical operations



Francesco Vegliò (+39 0862434223)
francesco.veglio@univaq.it

Nanoparticles

Development of innovative, sustainable, scalable and energy-efficient synthesis methods for the production of nanoparticles of metal oxides and hydroxides. Chemical-physical and microstructural characterization of the nanoparticles. Application of nanoparticles in construction, biomedical and environmental remediation



Giuliana Taglieri (+39 0862434234)
giuliana.taglieri@univaq.it

Sustainability	Recovery of tungsten, vanadium and titanium oxide from spent DeNO _x catalysts, used for stationary applications like power plants, in which the carrier is made up of TiO ₂ , that represents the majority of the material, and thus has to be converted into valuable materials like photocatalysts or pigments for ceramics and paints. Processes for efficient treatment of produced water (PW), through: adsorption of metals by synthetic zeolites produced by spent FCCCs, characterized by a low concentration of the two rare earth elements (cerium and lanthanum); integrated biological processes to remove organic compounds, for example microalgae that represent the last frontier for the degradation of the organic matter contained in wastewater	  	Francesco Ferella (+39 0862434238) <i>francesco.ferella@univaq.it</i>
Gasification	Biomass gasification for the production of a rich hydrogen gas	  	Andrea Di Carlo (+39 0862434245) <i>andrea.dicarlo1@univaq.it</i>
Hydrothermal processes	Hydrothermal processes of agroindustrial waste valorization. Optimization of hydrothermal carbonization (HTC) reactors integrated with biorefineries. Separation and recovery of high value-added products from HTC process waters. Bioconversion processes and engineering of biochemical reactions	  	Alberto Gallifuoco (+39 0862434208) <i>alberto.gallifuoco@univaq.it</i>
Wastewater treatment	Urban and industrial wastewater treatment. Integrated processes for reducing water consumption and development of Zero Liquid Discharge	  	Nicolò Maria Ippolito (+39 0862434239) <i>nicolomaria.ippolito@univaq.it</i>
Green engineering	Catalysis, Fluidization, CO ₂ -capture, Chemical looping, Biomass thermochemical conversion, green fuels (syngas, H ₂ , CH ₄ , greendiesel)	  	Katia Gallucci (+39 0862434213) <i>katia.gallucci@univaq.it</i>

COLLABORATIONS WITH COMPANIES

List of collaborations

PUBBLICAZIONI

- <https://doi.org/10.1016/j.rser.2019.02.029>
- <https://doi.org/10.3390/su11010113>
- <https://doi.org/10.1016/j.biortech.2021.126514>
- <https://doi.org/10.1016/j.ijhydene.2023.03.439>
- <https://doi.org/10.1016/j.renene.2019.10.121>
- <https://doi.org/10.1016/j.jece.2019.103171>
- <https://doi.org/10.3390/nano13172458>



DSFC
Dipartimento
di Scienze Fisiche
e Chimiche

SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi dell'Aquila
Department of Physical and Chemical Sciences
Via Vetoio (Coppito 1) - 67100 Coppito (AQ)
sito web: <https://dsfc.univaq.it/en/>

CONTACTS

Prof. Luca LOZZI
+39 0862433030

DETAILED INFORMATION

Staff: 16 Full Professors
30 Associate Professors
20 Researchers
11 Structured Technicians
6 Administrative Technicians
Registered students: 376 (Academic year 2022/2023)
Post Lauream Training: 40 enrolled in Doctoral programs
15 Research fellows
2 fellows
Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Trattamento acque

Synthesis and characterization of adsorbent materials for the treatment of water contaminated with organic xenobiotics and heavy metals



Fabrizio Ruggieri (+39 0862433782)
fabrizio.ruggieri@univaq.it

Mass spectrometry

Mass spectrometric based analysis of complex matrices



Samantha Reale (+39 0862433776)
samantha.reale@univaq.it

Zeoliti

Synthesis and characterization of zeolitic catalysts for green chemistry processes



Alfredo Aloise (+39 0862433702)
alfredo.aloise@univaq.it

Electrosynthesis

Development of new synthetic methods using non-metallic catalysis and electrocatalysis to produce biopharmacologically interesting heterocycles



Laura Palombi (+39 0862433007)
laura.palombi@univaq.it

Nanotubes

Growth and characterisation of organic and inorganic nanomaterials (nanotubes, nanofibers, nanoparticles) for sensors and photocatalysis



Luca Lozzi (+39 0862433030)
luca.lozzi@univaq.it

Ceramics	Relaxometry, diffusometry and NMR spectroscopy for the chemical-physical characterization of cellulosic and ceramic materials, high porosity stones and mortars		  	Cinzia Casieri (+39 0862433052) <i>cinzia.casieri@aquila.infn.it</i>
Process innovation	Innovation and chemistry applied to industrial processes, organic synthesis, and asymmetric catalysis		  	Armando Carlone (+39 0862433036) <i>armando.carlone@univaq.it</i>
Trattamento acque	Development of magneto-liposomal formulations for treatment of waste water		  	Luisa Giansanti (+39 0862433028) <i>luisa.giansanti@univaq.it</i>
Catalysis with gold	Development of alternative methodologies of organic synthesis		  	Antonio Arcadi (+39 0862433774) <i>antonio.arcadi@univaq.it</i>
Inorganic catalysis	Heterogeneization of active homogeneous catalysts or biocatalysts, on organic/inorganic hybrid matrices and their use in reactions for the production of high-added value products		  	Marcello Crucianelli (+39 3386545864) <i>marcello.crucianelli@univaq.it</i>
Artificial photosynthesis	Study of the catalytic mechanisms of metal oxides for artificial photosynthesis through computational techniques		  	Leonardo Guidoni (+39 3386546554) <i>leonardo.guidoni@univaq.it</i>
Organometallic catalysts	Synthesis, characterization and study of the catalytic performances of innovative organometallic complexes		  	Andrea Di Giuseppe (+39 0862433312) <i>andrea.digiuseppe@univaq.it</i>
Green chemistry	Synthesis and design of fine chemicals according to the principles of green chemistry		  	Leucio Rossi (+39 0862434246) <i>leucio.rossi@univaq.it</i>
Computational chemistry	Quantum-classical simulations: applications to biological systems		  	Isabella Daidone (+39 0862433754) <i>isabella.daidone@univaq.it</i>
Chemimetry	Development of chemometric methods for the analysis of complex matrices		  	Alessandra Biancolillo (+39 0862433004) <i>alessandra.biancolillo@univaq.it</i>
Inorganic materials	Syntheses, structural and spectroscopic characterization of inorganic and hybrid materials for heterogeneous catalysis		  	Andrea Lazzarini (+39 0862433757) <i>andrea.lazzarini@univaq.it</i>
Computational chemistry	Application of electronic structure calculations for the study of reactivity of inorganic and organic systems		  	Massimiliano Aschi (+39 0862433775) <i>massimiliano.aschi@univaq.it</i>
CO2 reuse	Asymmetric Catalysis with small organic molecules, Activation of Carbon Dioxide for the synthesis of fine chemicals, C-H activation via transition metal catalysis		  	Fabio Pesciaioli <i>fabio.pesciaioli@univaq.it</i>
Food analysis	Characterisation and traceability of foods by instrumental analytical methods and chemometrics		  	Angelo Antonio D'Archivio (+39 0862433777) <i>angeloantonio.darchivio@univaq.it</i>
Sistemi nanostrutturati	New nanostructured systems for applications in the field of bioconversions, food packaging and Cultural Heritage		  	Nicoletta Spreti (+39 0862433760) <i>nicoletta.spreti@univaq.it</i>



OTHER R&D ORGANIZATIONS

Microscopy Centre

Laboratory with optical and electronic microscopies and FTIR spectroscopy and microscopy

Contacts: Maria Giammatteo (+39 0862434061) - maria.giammatteo@univaq.it**Web site:** <https://microscopie.univaq.it/index.php?id=2775&L=1>

COLLABORATIONS WITH COMPANIES

- Dipharma Francis S.r.l.
- Dompè Farmaceutici S.p.A.
- Fater S.p.A.
- Hortus Novus S.r.l.
- Indena S.p.A.
- LFoundry S.r.l.
- Versalis S.p.A.

PUBBLICAZIONI

- V. Nori, F. Della Penna, E. Cocco, S. Mantegazza, G. Razzetti, G. Quattrocchi, F. Pesciaoli, A. Carlone, "A Sustainable and Catalytic Synthesis of Dibenzosuberone", ChemCatChem, 2023, e202300642. (in collaborazione con Dipharma Francis).
- P. Nepal, S. Kalapugama, M. Shevlin, J. R. Naber, L.-C. Campeau, C. Pezzetta, A. Carlone, C. J. Cobley, S. H. Bergens, "Polycationic Rh–JosiPhos Polymers Supported on Phosphotungstic Acid/Al₂O₃ by Multiple Electrostatic Attractions", ACS Catal., 2022, 12, 2034–2044. (in collaborazione con Merck e Dr. Reddy's).
- A. Carlone, C. J. Cobley, L. Bernardi, P. McCormack, T. Warr, S. Oruganti, "Asymmetric organocatalysis and continuous chemistry for an efficient and cost competitive process to pregabalin", Org. Process Res. Dev., 2021, 25, 12, 2795–2805 (in collaborazione con Dr. Reddy's).

MORE INFO

Five doctoral scholarships co-financed with companies are in place



GENERAL INFORMATION

Università degli Studi dell'Insubria

Department of Theoretical and Applied Sciences (DiSTA)

Via J.H. Dunant 3 - 21100 Varese (VA)

sito web: <https://www.uninsubria.it/siti-tematici-o-federati/siti-dei-dipartimenti/dipartimento-di-scienze-teoriche-e-applicate-dista>

CONTACTS

Prof. Mauro FERRARI

+39 0332421393

DETAILED INFORMATION

Staff: 13 Full Professors

19 Associate Professors

16 Researchers

3 Structured Technicians

9 Administrative Technicians

Registered students: 1.569 (Academic year 2021/2022)

Post Lauream Training: 19 enrolled in doctoral programs in Computer Science and the Mathematics of Computation

8 Research fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Sensors

New analytical instrumentation and new materials for the environmental analysis and sensor design



Carlo Dossi (+39 0312386235)
carlo.dossi@uninsubria.it

Chemimetry

In silico alternatives to animal testing and computational methods for chemistry and the environment



Ester Papa (+39 0332421552)
ester.papa@uninsubria.it

PUBBLICAZIONI

- Gibertini E., Liberale F., Dossi C. et al., "**Algae-derived hard carbon anodes for Na-ion batteries**", J Appl Electrochem 51, 1665–1673 (2021)
- Dossi C., Monticelli D., et al., "**Exploiting Chemistry to Improve Performance of Screen-Printed**", Bismuth Film Electrodes (SP-BiFE), Biosensors 6(3),38 (2016)
- Chirico N., Sangion A., Gramatica P., Casartelli I., Papa E., "**QSARINS-Chem standalone version: A new platform-independent software to profile chemicals for physico-chemical properties, fate, and toxicity**", Journal of Computational Chemistry, 2021, 42(20), pp. 1452–1460
- Banjare P., Singh J., Papa E., Roy P.P., "**Aquatic toxicity prediction of diverse pesticides on two algal species using QSTR modeling approach**", Environmental Science and Pollution Research, 2023, 30(4), pp. 10599–1061



GENERAL INFORMATION

Università degli Studi dell'Insubria
Department of Biotechnology and Life Sciences (DBSV)
Via J.H. Dunant 3 - 21100 Varese (VA)
sito web: <http://www.uninsubria.it>

CONTACTS

Prof. Luigi VALDATTA
+39 0332421392

DETAILED INFORMATION

Staff: 17 Full Professors
33 Associate Professors
20 Researchers
17 Structured Technicians
11 Administrative Technicians
Registered students: 1,144 (Academic year 2022/2023)
Post Lauream Training: 28 enrolled in Doctorate in Life Sciences and Biotechnology
28 Research fellows
18 Fellows
Patents: 1

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

 PROCESSES

 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

R&D ACTIVITIES DETAIL

Protein engineering	Plastic degradation (PET) by enzymatic treatment using engineered enzymes: bioplastics from proteins recovered from insect larvae grown on wastes	 	   	Gianluca Molla (+39 0332412414) gianluca.molla@uninsubria.it
Lignin	Lignin degradation by enzymatic treatment; system biocatalysis of molecules from lignin depolymerization	 	   	Elena Rosini (+39 0332421518) elena.rosini@uninsubria.it
Recombinant proteins	Production of recombinant proteins for biocatalysis and other applications (vaccines)	 	   	Luciano Piubelli (+39 0332421308) luciano.piubelli@uninsubria.it
Chitin	Identification, production, and characterisation of chitinases and chitin deacetylases for chitin transformation/valorisation and as biopesticides	 	   	Francesca Berini (+39 0332421332) f.berini@uninsubria.it
Microbial fermentations	Production of antibiotics and other bioactive molecules from fermentation of microbial strains	 	   	Flavia Marinelli (+39 0332421546) flavia.marinelli@uninsubria.it
Biocatalysis	Chemoenzymatic processes for the valorization of lignin: toolbox of ligninolytic enzymes	 	   	Loredano Pollegioni (+39 0332421506) loredano.pollegioni@uninsubria.it
Sustainable polymers	Identification and catalytic transformation of bio-based building-blocks, industrial wastes and carbon dioxide for the synthesis of polymers and high added-value products	 	   	Francesco Della Monica (+39 0332421310) f.dellamonica@uninsubria.it



COLLABORATIONS WITH COMPANIES

- BioC-CheM Solutions S.r.l.
- Gnosis by Lesaffre
- Hyperion Pharms S.r.l.
- Isagro S.p.A.
- IWT S.r.l.
- Prometeon Tire Group S.r.l.
- Techniplast S.p.A.
- Vibram S.p.a.

PUBBLICAZIONI

- Yushchuk O., Vior N.M., Andreo-Vidal A., Berini F., Rückert C., Busche T., Binda E., Kalinowski J., Truman AW, Marinelli F., "**Genomic-led discovery of a novel glycopeptide antibiotic by *Nonomuraea coxensis***", DSM 45129, ACS Chem Biol. 2021.16(5):915-928
- Berini F., Casartelli M., Montali A., Reguzzoni M., Tettamanti G., Marinelli F., "**Metagenome-sourced microbial chitinases as potential insecticide proteins**", Front Microbiol. 2019. 10:1358
- Santoro O., Malacarne M.C., Sarcone F., Scapinello L., Pragliola S., Caruso E., Orlandi V.T., Izzo L., "**Inherently antimicrobial P(MMA-ran-DMAEMA) copolymers sensitive to photodynamic therapy: a double bactericidal effect**", Int J Mol Sci. 2023. 24:4340
- Maquilón C., Brandolese A., Alter C., Hövelmann C.H., Della Monica F., Kleij A.W., "**Renewable beta-element eBased cyclic carbonates for the preparation of oligo(hydroxyurethane)s**", ChemSusChem 2022. 15:e2022011
- Pirillo V., Orlando M., Battaglia C., Pollegioni L., Molla G., "**Efficient polyethylene terephthalate degradation at moderate temperature: a protein engineering study of LC-cutinase highlights the key role of residue 243**", FEBS Journal, 2023. 290(12):3185-3202
- Molinari F., Pollegioni L., Rosini E., "**Whole-cell bioconversion of renewable biomasses-related aromatics to cis,cis-muconic acid**", ACS Sustain Chem Eng. 2023. 11(6):2476-2485
- Ballestri M., Marras E., Caruso E., Bolognese F., Malacarne M.C., Martella E., Tubertini E., Gariboldi M.B., Varchi G., "**Free and poly-methyl-methacrylate-bounded BODIPYs: Photodynamic and antimigratory effects in 2D and 3D cancer models**", Cancers, 2023. 15 (92):1-21



GENERAL INFORMATION

Università degli Studi di Bari Aldo Moro

Department of Chemistry

Via Edoardo Orabona 4 - 70126 Bari (BA)

sito web: http://https://www.uniba.it/en?set_language=en

CONTACTS

Prof. Gerardo PALAZZO

+39 0805442028

Prof.ssa Lucia D'Accolti (Delegate 3rd mission) - +39 3954442068

DETAILED INFORMATION

Staff: 14 Full Professors

25 Associate Professors

23 Researchers

2 Structured Technicians

16 Administrative Technicians

Registered students: 400 (Academic year 2023/2024)

Post Lauream Training: 40 enrolled in Doctorates in Chemical and Molecular Sciences

14 Research fellows

Patents: 6 [More information](#)

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Biofuels	Valorization of steel slag in the development of catalytic systems for biofuels	 	   	Michele Casiello (+39 3200883359) michele.casiello@uniba.it
Bioplastics	Innovative materials from wastes	 	   	Lucia D'Accolti (+39 0805442068) lucia.daccolti@uniba.it
Nanosystems	Preparation and characterization of lipid and/or polymer-based nanosystems for biomedical and environmental applications	 	   	Lucia Catucci (+39 0805442055) lucia.catucci@uniba.it
Organic chemistry	Study and development of innovative and sustainable synthetic methodologies in ionic solvents of natural origin	 	   	Antonio Salomone antonio.salomone@uniba.it
Lipidomics	Characterization of lipid molecules in biological or food matrices by mass spectrometry	 	   	Ilario Losito (+39 0805442506) ilario.losito@uniba.it
Hybrid materials	Preparation of hybrid organic and biomimetic materials, based on microalgae, for environmental bioremediation and tissue engineering	 	   	Danilo Vona danilo.vona@uniba.it
Renewable energies	Development of catalysts for water splitting, fuel cells, batteries and solar cells	 	   	Antonella Milella (+39 3803617260) antonella.milella@uniba.it

Proteomics	Study of proteins in biological, food and industrially relevant matrices by mass spectrometry	  	Cosima Damiana Calvano (+39 0805442018) <i>cosimadamiana.calvano@uniba.it</i>
Materials	Design and characterization of perovskite based solar cells	  	Andrea Listorti (+39 0805442009) <i>andrea.listorti@uniba.it</i>
Hydrogels	Hydrogels derived from biopolymers used for drug delivery	  	Cosma Pinalysa (+39 0805443443) <i>pinalysa.cosma@uniba.it</i>
NIR processes	Synthesis and characterization of NIR absorbing organic dyes	  	Maria Annunziata Capozzi (+39 0805442076) <i>maria.capozzi@uniba.it</i>
Materials	Synthesis and advanced analytical characterization of (nano)materials for applications in food, health, and cultural heritage	  	Rosaria Anna Picca (+39 0805442115) <i>rosaria.picca@uniba.it</i>
Biomaterials	Use of biocompatible thermoresponsive matrices, functionalized for the controlled release of drugs in proximity to the organ/tissue in pathological conditions	  	Emiliano Altamura (+39 3200612884) <i>emiliano.altamura@uniba.it</i>
Decarbonization	Development of processes and catalytic systems for photoreduction of CO ₂	  	Lucia D'Accolti (+39 0805442068) <i>lucia.daccolti@uniba.it</i>
Biopolymers	Dissolution of biopolymers in natural solvents and formation of fibers (formulation and mechanical and structural characterization)	  	Luigi Gentile (+39 0805442033) <i>luigi.gentile@uniba.it</i>
Carbon recycle	Development of innovative processes for carbon recycling to energy products	  	Angela Dibenedetto (+39 0805443606) <i>angela.dibenedetto@uniba.it</i>
Circular economy	New strategies of Biofuel and lubricant fluid production from organic urban wastes	  	Pietro Cotugno <i>pietro.cotugno@uniba.it</i>
Bioreactors	Construction of compartmentalized lipid systems engineered with membrane and/or hydrophilic enzymes as micrometric bioreactors for the synthesis of biomolecules	  	Fabio Mavelli (+39 3395616402) <i>fabio.mavelli@uniba.it</i>
Protective coatings	Hydrophobic, anti-corrosion, barrier coatings for food packaging	  	Francesco Fracassi (+39 3477595161) <i>francesco.fracassi@uniba.it</i>
Nanoantimicrobials	Development of antimicrobial nanomaterials through eco-compatible processes and their industrial applications	  	Nicola Cioffi (+39 0805442020) <i>nicola.cioffi@uniba.it</i>
Biomaterials	Synthesis of synthetic nanocrystalline hydroxyapatite-based biomaterials for the local delivery of antitumor drugs	  	Nicola Margiotta (+39 0805442759) <i>nicola.margiotta@uniba.it</i>
Biomass	Development of innovative processes for the valorization of residual biomass	  	Francesco Nocito (+39 0805442086) <i>francesco.nocito@uniba.it</i>
Fuel gel	Formulation of gel systems for combustion	  	Luigi Gentile (+39 0805442033) <i>luigi.gentile@uniba.it</i>

LCA	Studies are underway to calculate the environmental impact of the life cycle of products such as, for example, protective facial masks and community masks, obtained by assembling different types of non-woven fabrics and evaluating different sanitization techniques, to develop the best strategies for reducing of the environmental burden	  	Pasquale Giungato <i>pasquale.giungato@uniba.it</i>
Water remediation	Removal of pollutants from water by using natural materials. Recycling of these materials by desorption or photocatalytic processes	  	Cosma Pinalysa (+39 0805443443)
Bio-hybrid materials	Development, through sustainable synthetic strategies, of organic and bio-hybrid materials for electronics, optoelectronics, photonics and biomedicine	  	Gianluca Maria Farinola <i>gianlucamaria.farinola@uniba.it</i>
Carbon recovery	Chemical utilization of carbon dioxide. CO2 and carbonic acid diesters as succedaneous of phosgene. Chemical recycling of waste plastics	  	Eugenio Quaranta (+39 0805442093) <i>eugenio.quaranta@uniba.it</i>
Circular economy	Chitosan and alginate to develop functional patches/masks in cosmetics and biomedicine	  	Jennifer Gubitosa (+39 0805443443) <i>jennifer.gubitosa@uniba.it</i>
Green formulations	Sustainable process for homecare and healthcare	  	Gerardo Palazzo (+39 0805442028) <i>gerardo.palazzo@uniba.it</i>
Artificial cells	Semi-synthetic approach to the implementation of artificial cells for health application and bioremediation	  	Fabio Mavelli (+39 3395616402) <i>fabio.mavelli@uniba.it</i>
Artificial photosynthesis	Synthetic biology approach for the reconstitution of systems capable of transducing light energy into chemical energy	  	Emiliano Altamura (+39 3200612884) <i>emiliano.altamura@uniba.it</i>
Mass spectrometry	Development of methods based on mass spectrometry for the analysis of biomolecules, bioactive compounds, food allergens	  	Tommaso Cataldi (+39 0805442015) <i>tommaso.cataldi@uniba.it</i>
Agro-food waste	Use of food wastes as multifunctional materials	  	Vito Rizzi
Green chemistry	Synthesis of molecular multifunctional materials based on inert free radicals. Valorization of lignin derived from agri-food wastes	  	Davide Blasi <i>davide.blasi@uniba.it</i>
Organic chemistry	Development of new eco-sustainable methods in organic synthesis	  	Antonio Monopoli <i>antonio.monopoli@uniba.it</i>
Top chemicals	Valorization of waste materials for the production of chemical derivatives with high added value	  	Angelo Nacci (+39 0805442499) <i>angelo.nacci@uniba.it</i>
Water remediation	Development of catalysts for the reduction of organic pollutants in water	  	Antonella Milella (+39 3803617260) <i>antonella.milella@uniba.it</i>
Biomaterials	Bioactive coatings, antibacterial and/or non-fouling surfaces, drug release systems, cell activation, sterilization	  	Pietro Favia (+39 3403668024) <i>pietro.favia@uniba.it</i>

Plasmas	Surface treatments to improve the adhesion and nanostructuring of materials	 	   	Francesco Fracassi (+39 3477595161) <i>francesco.fracassi@uniba.it</i>
Advanced materials	Design and manufacture of inorganic and hybrid nanomaterials with size-dependent properties enabling original functions or improving the performance of systems and devices for environmental, biomedical and energy applications	 	   	Maria Lucia Curri (+39 3475330660) <i>marialucia.curri@uniba.it</i>
Sustainability	Development of a sustainable process for the production of PLA and lactic acid-based materials	 	   	Maria Annunziata Capozzi (+39 0805442076) <i>maria.capozzi@uniba.it</i>
Circular economy	Synthesis and characterization of green synthesized gold nanoparticles. Applications in nanomedicine	 	   	Vito Rizzi (+39 0805443443) <i>vito.rizzi@uniba.it</i>
Cosmetic	Development and physico-chemical characterization of potential cosmetic ingredients	 	   	Jennifer Gubitosa (+39 0805443443) <i>jennifer.gubitosa@uniba.it</i>
Active release	Release of active agents (drugs, RNA, phenols) from supramolecular structured systems (vesicular phases/LNPs/polymeric systems)	 	   	Luigi Gentile (+39 0805442033) <i>luigi.gentile@uniba.it</i>
Packaging	Development and characterization of food packaging systems biopolymers-based	 	   	Jennifer Gubitosa (+39 0805443443) <i>jennifer.gubitosa@uniba.it</i>
Organic chemistry	Organometallic synthesis of functional molecular materials	 	   	Angela Punzi <i>angela.punzi@uniba.it</i>
Sostanze naturali	Extraction and purification of natural substances as building blocks for the synthesis of biopolymers	 	   	Vincenzo De Leo (+39 0805442055) <i>vincenzo.deleo@uniba.it</i>
Circular economy	Valorization of industrial catalytic wastes in organic synthesis	 	   	Roberta Ragni <i>roberta.ragni@uniba.it</i>
Sustainability	Biomass degradation by white-rot fungi to produce organic molecules for industrial and environmental applications	 	   	Maria Annunziata Capozzi (+39 0805442076) <i>maria.capozzi@uniba.it</i>
Materials	Design and study of systems for the conversion of light energy into high value-added chemical species containing metal halide perovskites	 	   	Andrea Listorti (+39 0805442009) <i>andrea.listorti@uniba.it</i>
Immunotherapy	Activation of biological liquids for anti-cancer applications	 	   	Pietro Favia (+39 3403668024) <i>pietro.favia@uniba.it</i>
Bioactive molecules	Synthesis and structural characterization of sulfinyl compounds and chiral aminobenzylnaphthols	 	   	Maria Annunziata Capozzi (+39 0805442076) <i>maria.capozzi@uniba.it</i>
Sustainable agriculture	Active coatings of seeds and substrates for agriculture	 	   	Pietro Favia (+39 3403668024) <i>pietro.favia@uniba.it</i>

OTHER R&D ORGANIZATIONS

SMART Inter-department Research Centre	Development of analytical methods based on advanced mass spectrometry techniques for application in research or third-party analyses Contacts: Ilario Losito (+39 0805442406) - ilario.losito@uniba.it Web site: https://www.uniba.it/it/ricerca/centri-interdipartimentali/smart
Interdepartmental Center on Environmental Methodologies and Technologies - METEA	The Center includes several departments of Bari University with the aim to develop new methodologies and technologies for environmental protection Contacts: Eugenio Quaranta - secretariat.metea@uniba.it
Interuniversity Consortium on Chemical Reactivity and Catalysis - CIRCC	The CIRCC includes 17 Universities with the aim to develop new chemical reactions, new catalytic systems, and their possible industrial application Contacts: Angela Dibenedetto (+39 0805442429) - angela.dibenedetto@uniba.it ; circc@uniba.it Web site: https://www.circc.it/en/home

COLLABORATIONS WITH COMPANIES

Agreements

PUBBLICAZIONI

- J. of In. B. 2021, 215, 111334 (DOI: 10.1016/j.jinorgbio.2020.111334).
- J. Mater. Chem. B, 2020, 8, 2792 (DOI: 10.1039/d0tb00390e).
- J. Mater. Chem. A, 2016, 4, 17163-17170.
- Journal of Chromatography A Volume 1639, 22 February 2021, 461920, <https://doi.org/10.1016/j.chroma.2021.461920>.
- **"Seel slag as low-cost catalyst for artificial photosynthesis to convert CO₂ and water into hydrogen and methanol"**, Sci Rep 12, 11378 (2022).
- Molecules 2017, 22(2), 333; (DOI: 10.3390/molecules22020333).
- (2022) Cell Hypertrophy: A "Biophysical Roadblock" to Reversing Kidney Injury. Front. Cell Dev. Biol. 10:854998 (DOI: 10.3389/fcell.2022.854998).



GENERAL INFORMATION

Università degli Studi di Brescia

Department of Civil, Environmental, Architectural Engineering and Mathematics (DICATAM)

Via Branze 43 - 25123 Brescia (BS)

sito web: <https://www.unibs.it/en/university/organisation/departments/dicam>

CONTACTS

Prof. Giorgio BERTANZA

+39 0303711201

DETAILED INFORMATION

Staff: 19 Full Professors

39 Associate Professors

25 Researchers

8 Structured Technicians

11 Administrative Technicians

Registered students: 1,200 (Academic year 2022/2023)

Post Lauream Training: 58 enrolled in doctoral programs in Civil and Environmental Engineering, International cooperation and Mathematics

28 Research fellows

19 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

CCS

Approaches to increase the carbon sequestration in soil, to reduce the GHG emission and the water contamination in herbaceous and tree crops



Laura Giagnoni
laura.giagnoni@unibs.it

Bioeconomy

Strategies for the economic sustainability of agri-food systems: innovation, business models, consumer preferences, management of environmental resources



Vera Ventura
vera.ventura@unibs.it

Electroactive polymers

Modelling electroactive polymers including mobile charged species with applications in actuation, sensing, and energy harvesting



Lorenzo Bardella (+39 0303711238)
lorenzo.bardella@unibs.it

Batteries

Recovery of critical materials from spent Li-ion batteries



Mentore Vaccari (+39 0303711300)
mentore.vaccari@unibs.it

LCA

Application of the Life Cycle Assessment methodology to model production systems, evaluate environmental impacts and detect mitigation strategies such technologies and management strategies



Giulia Ferronato
giulia.ferronato@unibs.it

Biodiversity

Development and application of scientific approaches to the study of the (positive and/or negative) impacts of organisms on human health and economy



Gianni Gilioli
gianni.gilioli@unibs.it

Circular economy	Catalytic treatment of emissions from stationary and mobile sources	  	Nancy Artioli (+39 3403207518) <i>nancy.artioli@unibs.it</i>
Ecological transition	Systemic and innovative approach to study herbaceous and tree crops through multidisciplinary studies and applying Agriculture 4.0 technologies and precision farming	  	Isabella Ghigleno <i>isabella.ghigleno@unibs.it</i>
Nutrients	Stripping of nitrogen from digestate of livestock manure: optimization of process and energy performance	  	Alessandro Abbà (+39 0303711303) <i>alessandro.abba@unibs.it</i>
Circular economy	Quantitative evaluation of nitrogen excretion, GHG and ammonia emissions in livestock sector	  	Valentina Caprarulo <i>valentina.caprarulo@unibs.it</i>
Remediation	Development of innovative processes for the treatment of contaminated land	  	Mentore Vaccari (+39 0303711300) <i>mentore.vaccari@unibs.it</i>
Industrial symbiosis	Modelling material flows and performance indicators	  	Marta Domini (+39 0303711301) <i>marta.domini@unibs.it</i>
Circular economy	Release of pollutants from recycled materials used for environmental applications and in the construction sector	  	Sabrina Sorlini (+39 0303711299) <i>sabrina.sorlini@unibs.it</i>
Circular economy	Use of agricultural waste for environmental reclamation activities	  	Mentore Vaccari (+39 0303711300) <i>mentore.vaccari@unibs.it</i>
Hydrogen	Production of green H ₂ from seawater through an innovative high-temperature electrolyzer with integration into the power-to-methanol process (PROMETH2eus project)	  	Nancy Artioli (+39 3403207518) <i>nancy.artioli@unibs.it</i>
Sustainability	Evaluation of fertility in agricultural, urban and forest soils in response to agricultural practices and contamination	  	Laura Giagnoni <i>laura.giagnoni@unibs.it</i>
Biodiversity	Evaluation of biodiversity in response to sustainable management of agroecosystems	  	Sumer Alali <i>sumer.alali@unibs.it</i>
Sustainability	An innovative bioassay based approach to assess environmental sustainability of liquid, solid and gaseous emissions	  	Giorgio Bertanza (+39 0303711201) <i>giorgio.bertanza@unibs.it</i>

OTHER R&D ORGANIZATIONS

ARH - Agrofood Research Hub

Agrofood Research Hub is a multidisciplinary research group that works to promote sustainable production in agriculture, environmental health and socio-economic enhancement of the agri-food sector. The aim of the laboratory is to support actors in various capacities operating in the field of agricultural production and agro-food processing in the path towards the ecological transition, developing projects that promote innovation and quality, for the benefit of society, business and territory. Agrofood Research Hub consists of 7 hubs that provide expertise on: Resources and data management protocols; Land use, production, weather-climatology, biological parameters; Models and systems to support decisions; Online tool; Instruments for scientific research; Methodologies and equipment for chemical, physical and microbiological analysis of environmental matrices (soil, water, air), plants and animals

Contacts: agrofood@unibs.it
Web site: <https://agrofood-en.unibs.it/>

CEEP – Catalysis for Energy and Environmental Protection

The CEEP lab - Catalysis for Energy and Environmental Protection - laboratory is engaged in the development of catalytic processes for sustainable energy production and post-treatment technologies. Research projects focus on environmental catalysis for emissions control in the transportation sector and the development of multifunctional catalysts for Gas-To-Liquid technologies. These technologies involve the capture and valorization of CO₂ from waste streams and the production of green hydrogen for conversion into high-value products such as methanol, DME, and biofuels. These areas of interest represent the main mission of the research group for the sustainable production of essential basic chemicals from zero-impact raw materials, e-fuels, and renewable energies

Contacts: nancy.artioli@unibs.it

Web site: <https://www.unibs.it/en/dicam-%20laboratories-and-observatories>

B+ LabNet

The B + LabNet Laboratory is an operation room capable of coordinating and integrating the research activities carried out within the Laboratory and by the different groups in the different Departments of the University. The characterizing theme includes aspects related to the management, use and protection of the environment as a precious resource, both for the direct effect on the health of the population and ecosystems, and for the wealth and well-being that it can produce. The Laboratory also offers analytical skills for the evaluation of ecotoxicity of contaminated environmental matrices (water, soil, waste, air)

Contacts: blabnet@unibs.it

Web site: <https://blab.unibs.it/>

Laboratory of Sanitary-Environmental Engineering

The Laboratory of Sanitary and Environmental Engineering offers technical and scientific support to the experimental research activities carried out in the following fields: degree thesis, third party contracts with companies, and research projects funded both by the University and by national and international competitive tenders. The laboratory is also used for teaching activities. The laboratory carries out the characterization of contaminated liquid and solid matrices, with the execution of basic chemical and microbiological analyses. The samples to be examined are prepared (e.g. eluates) for subsequent more specific analyses (e.g. toxicological tests) carried out in other laboratories. In addition, in this laboratory several processes are tested for the treatment/reuse/recovery of wastewater, drinking water, waste (solid and liquid) and soils. Processes and technologies are studied both at the small- and pilot-scale in the laboratory, but also through the support of experimental activities in pilot plants on field

Contacts: ingsan@unibs.it

Web site: <https://www.unibs.it/it/laboratorio-ingegneria-sanitaria>

COLLABORATIONS WITH COMPANIES

Collaborations with numerous companies and associations are ongoing

PUBBLICAZIONI

- Leronni, A., Bardella, L., (2021), "**Modeling actuation and sensing in ionic polymer metal composites by electrochemo-poromechanics**", Journal of the Mechanics and Physics of Solids 148, 104292 (<https://doi.org/10.1016/j.jmps.2021.104292>)
- Maddaloni, M., Marchionni, M., Abbà, A., Mascia, M., Tola, V., Carpanese, M.P., Bertanza, G., Artioli, N., (2023), "**Exploring the Viability of Utilizing Treated Wastewater as a Sustainable Water Resource for Green Hydrogen Generation Using Solid Oxide Electrolysis Cells (SOECs)**", Water 15, 2569, <https://doi.org/10.3390/w15142569>
- Abbà, A., Domini, M., Baldi, M., Collivignarelli, M.C., Bertanza, G. (2023), "**Investigation of the main parameters influencing the kinetics of an ammonia stripping plant treating swine digestate**", Sustainability, 15(13), 10494, <https://doi.org/10.3390/su151310494>
- Diotti, A., Plizzari, G., Sorlini, S. (2021), "**Leaching behaviour of construction and demolition wastes and recycled aggregates: Statistical analysis applied to the release of contaminants**", Applied Sciences, 11(14), 6265, <https://doi.org/10.3390/app11146265>
- F. Duarte Castro, E. Mehner, L. Cutaia, M. Vaccari, "**Life cycle assessment of an innovative lithium-ion battery recycling route: A feasibility study**", Journal of Cleaner Production, 36825, 2022, 133130, <https://doi.org/10.1016/j.jclepro.2022.133130>
- T. G. Ambaye, A. Chebbi, F. Formicola, A. Rosatelli, S. Prasad, F.H. Gomez, S. Scaffoni, A. Franzetti, M. Vaccari, "**Ex-situ bioremediation of petroleum hydrocarbon contaminated soil using mixed stimulants: Response and dynamics of bacterial community and phytotoxicity**", Journal of Environmental Chemical Engineering 2022, 10(6), 108814; <https://doi.org/10.1016/j.jece.2022.108814>
- Panteghini, A., Bardella, L., (2023), "**Electrochemo-poromechanics of ionic polymer metal composites: Towards the accurate finite element modelling of actuation and sensing**", Journal of Elasticity 153, 299-358, <https://doi.org/10.1007/s10659-023-09990-z>



UNIVERSITY
OF BRESCIA



GENERAL INFORMATION

Università degli Studi di Brescia

Department of Information Engineering (DII)

Via Branze 38 - 25123 Brescia (BS)

sito web: <https://www.unibs.it/en/node/64>

CONTACTS

Prof. Fabio BARONIO

+39 0303715590

DETAILED INFORMATION

Staff: 26 Full Professors

23 Associate Professors

22 Researchers

8 Structured Technicians

9 Administrative Technicians

Registered students: 899 (Academic year 2020/2021)

Post Lauream Training: 21 enrolled in doctoral programs

Patents: 8



GENERAL INFORMATION

Università degli studi di Cagliari
Department of Chemical and Geological Sciences
SS 554 - 09042 Monserrato (CA)
sito web: https://unica.it/unica/it/dip_scienzachimicgeo.page

CONTACTS

Prof. Antonio FUNEDDA
+39 0706757767

DETAILED INFORMATION

Staff: 13 Full Professors
30 Associate Professors
23 Researchers
2 Technologists
11 Structured Technicians
7 Administrative Technicians
Registered students: 141 (Academic year 2022/2023)
Post Lauream Training:
11 students enrolled in doctoral programs in Chemical Science and Technology (XXXVIII cycle)
13 students enrolled in doctoral programs in Earth and Environmental Science and Technology (XXXVIII cycle)
3 Research fellows
13 fellows
Patents: 73 approved
4 pending

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Chemimetry

Chemometrics analysis



Tiziana Pivetta (+39 0706754473)
tpivetta@unica.it

Nanostructured materials

Development of: functionalized nanoparticles for drug delivery; functional adsorbents for pollutants removal from waters; heterogeneous biocatalysts for biofuels production and pollutants removal



Andrea Salis (+39 0706754362)
andrea.salis@unica.it

Remediation

Development of innovative soft materials for meta ions, anions and emerging pollutants remediation



Claudia Caltagirone (+39 0706754452)
ccaltagirone@unica.it

Remediation

Bioremediation on polluted soils



Tiziana Pivetta (+39 0706754473)
tpivetta@unica.it

Optoelectronics

Photoconducting and NLO inorganic molecular materials



Massimiliano Arca (+39 0706754483)
marca@unica.it

MOF	Metal-Organic Frameworks (MOFs) based Materials for: the detection of environmental pollutants and for CO ₂ capture and separation from industrial sources (natural gas, etc.); the development of luminescent ratiometric thermometers, potentially employed for biological sensing within the physiological temperature range (293-313 K), as they are highly sensitive to tumor cells	    	Maria Laura Mercuri (+39 0706754474) <i>mercuri@unica.it</i>
Carbocycles	Development of new synthetic methods based on transformation of strained organic compounds. Design and preparation of highly functionalized carbo-and heterocycle and aminoacid-inspired molecular scaffolds of biological and therapeutic interest	    	Angelo Frongia (+39 0706754406) <i>afrongia@unica.it</i>
Circular economy	Development, synthesis and characterization of nanophasic materials and MOF, for the delivery of drugs and bioactive molecules	    	Guido Ennas (+39 0706754364) <i>ennas@unica.it</i>
Biopolymers	Valorization of industrial agricultural waste to obtain functional materials of a polymeric nature	    	Francesco Secci (+39 0706754408) <i>fsecci@unica.it</i>
Struttura molecolare	Combination of spectroscopic and computational methods for structural studies in solution	    	M. Andrea Scorciapino (+39 0706753921) <i>scorciapino@unica.it</i>
Metabolomics	Metabolomic characterization of biofluids in clinical settings and food products in the agrofood industry using NMR spectroscopy	    	Flaminia Cesare Marincola (+39 0706754389) <i>flaminia@unica.it</i>
Pollution	Pollution on water and soils	    	Tiziana Pivetta (+39 0706754473) <i>tpivetta@unica.it</i>
Sorbent materials	Design of atomistic/molecular models for computational studies of sorbent materials of gas and liquid mixtures	    	M. Andrea Scorciapino (+39 0706753921) <i>scorciapino@unica.it</i>
Modelling	Theory and modelling of biomolecules, buffers and electrolytes. Theory of electrode-electrolyte interactions in supercapacitors, batteries and sensors. Mineral recovery by salt-water froth flotation. Modelling rare earth and heavy metal adsorption. Modelling destabilization of ice/water films	    	Drew Parsons (+39 3382907741) <i>drew.parsons@unica.it</i>
Process intensification	Development of new environmentally friendly synthetic strategies based on the use of organic catalysts; Process intensification in batch and continuous flow photochemical transformations	    	Francesco Secci (+39 0706754408) <i>fsecci@unica.it</i>
Trasporto in membrana	Combination of spectroscopic and computational methods to study transport processes through biologic membranes	    	M. Andrea Scorciapino (+39 0706753921) <i>scorciapino@unica.it</i>
Remediation	Functionalized graphene oxide-based materials for removal of dyes and organic and inorganic pollutants from wastewater	    	M. Carla Aragoni (+39 0706754491) <i>aragoni@unica.it</i>
Cultural heritage	Organic and inorganic consolidants for the conservation and restoration Cultural Heritage stone artifacts	    	Anna Pintus (+39 0706754384) <i>apintus@unica.it</i>

Photochemistry	Development of new photoinduced processes and mechanistic investigations relating to photoinduced transformations	 	Alberto Luridiana (+39 0706754408) <i>alberto.luridiana@unica.it</i>
Computational chemistry	Computational studies for the development of catalysts for CO ₂ electroproduction. Modeling structure and optical properties of carbon nanodots. Studies of the structural and dynamic properties of nucleic acids and interactions with binders with stabilizing/destabilizing effects. Modeling the confinement effect on DNA-ion interactions. Characterization of the structural, dynamic, and thermodynamic properties of solvent mixtures (organics, ionic liquids, eutectic mixtures). Optimization of vectors for genetic material development	 	Francesca Mocci (+39 0706754390) <i>fmocci@unica.it</i>
Polymers	Development of monomers and polymers from renewable resources. 3D printing. Functional polymers for sensing applications	 	Annalisa Chiappone (+39 3347531838) <i>annalisa.chiappone@unica.it</i>
Optoelectronics	Design, synthesis, and characterization of new molecular materials for applications in the field of optoelectronics and biomedical science	 	Giuseppe Sforazzini (+39 0706754416) <i>giuseppe.sforazzini@unica.it</i>
Antitumours	Metal complexes with antitumoral activity	 	Tiziana Pivetta (+39 0706754473) <i>tpivetta@unica.it</i>

OTHER R&D ORGANIZATIONS

Computational Chemistry Laboratory	Computational Chemistry Laboratory with 48-core dedicated server IBMx3755 (Gaussian, GaussView, ADF, Q-Chem, Spartan, GROMACS, Molden) and 12 independent client workstations Contacts: Massimiliano Arca (+39 0706754483) - marca@unica.it Web site: https://www.unica.it/unica/en/ateneo_s07_ss01_sss08_01.page?contentId=DAT266402
Interdepartmental Nuclear Magnetic Resonance (NMR) Spectroscopy Laboratory	The laboratory hosts UNITY INOVA 500 MHz NB High-Resolution NMR spectrometer (Agilent) dedicated exclusively to metabolomics analysis equipped with a 5 mm 1H - 19F direct probe for liquid samples, and a high-band (1H) channel with temperature control from +150 to - 150 °C and a 50 position autosampler Contacts: Flaminia Cesare Marincola (+39 0706754389) - flaminia@unica.it

COLLABORATIONS WITH COMPANIES

- Chiesi Farmaceutici S.p.A.
- Depas S.r.l.
- Ecoserdiana S.p.A.
- Fluorsid S.p.A.
- Fonti San Leonardo de Siete Fuentes S.p.A.
- Istituto Centrale di Restauro (ICR), Ministero della Cultura
- Istituto di Scienze del Patrimonio Culturale, CNR
- Istituto superiore per la Ricerca e l'Ambiente (ISPRA)
- Portovesme S.r.l.
- Sardegna Ricerche
- Sartec S.r.l.
- Soprintendenza Archivistica della Sardegna
- Sotacarbo S.p.A.

PUBBLICAZIONI

- Fausto Secci, Valentina Mameli, Elisabetta Rombi, Sarah Lai, Marco Sanna Angotzi, Patrícia A Russo, Nicola Pinna, Mauro Mureddu, Carla Cannas, **"On the role of the nature and density of acid sites on mesostructured aluminosilicates dehydration catalysts for dimethyl ether production from CO₂"**, Journal of Environmental Chemical Engineering, 2023, 11, 3, 110018 - <https://doi.org/10.1016/j.jece.2023.110018> (Mauro Mureddu e Sarah Lai per Sotacarbo S.p.A.)
- Mirko Antonio Vacca, Claudio Cara, Valentina Mameli, Marco Sanna Angotzi, Mariano Andrea Scorciapino, Maria Giorgia Cutrufello, Anna Musinu, Vaclav Tyrpekl, Luca Pala, Carla Cannas, **"Hexafluorosilicic acid (FSA): from hazardous waste to precious resource in obtaining high value-added mesostructured silica"**, ACS Sustainable Chemistry & Engineering, 8, 38, 14286–14300 (2020) - DOI: 10.1021/acssuschemeng.0c03218 (Luca Pala per Fluorsid S.p.A.)
- Anna Pintus, Lucia Ambrosio, M. Carla Aragoni, Maddalena Binda, Simon J. Coles, Michael B. Hursthouse, F. Isaia, V. Lippolis, Giammarco Meloni, Dario A. N. Natali, James B. Orton, Enrico Podda, Marco Sampietro, Massimiliano Arca, **"Photoconducting Devices with Response in the Visible–Near-Infrared Region Based on Neutral Ni Complexes of Aryl-1,2-dithiolene Ligands"**, Inorg. Chem., 59, 6410–6421 (2020). DOI: 10.1021/acs.inorgchem.0c00491
- Anna Pintus, Cristian Pilloni, Gabriele Pippia, Enrico Podda, M. Carla Aragoni, Vito Lippolis, Panagiotis Aloukos, Dionysios Potamianos, Nikolaos Chazapis, Stelios Couris, George C. Anyfantis, Alexandra M. Z. Slawin, J. Derek Woollins, Massimiliano Arca, Dalton Trans., **"A new class of third-order nonlinear optical materials: pulse-duration dependant saturable/reverse-saturable absorption and nonlinear refraction in platinum(II) diimine-dithiolate complexes"**, 52, 9423–9432 (2023). DOI: 10.1039/d3dt00931a
- Laura Maiore, M. Carla Aragoni, Gianfranco Carcangiu, Ombretta Cocco, Francesco Isaia, Vito Lippolis, Paola Meloni, Arianna Murru, Enrica Tuveri, Massimiliano Arca, **"Synthesis, characterization and DFT-modeling of novel agents for the protection and restoration of hystorical calcareous stone substrates"**, J. Coll. Int. Sci., 448, 320–330 (2015). DOI: 10.1016/j.jcis.2015.01.092.
- Flaminia Cesare Marincola; Sara Corbu, Milena Lussu, Antonio Noto, Angelica Dessì, Stefania Longo, Elisa Civaridi, Francesca Garofoli, Beatrice Greci, Elisa Mongini, Andrea Budelli, Alessia Grinzato, Francesca Fasano, Vassilios Fanos, and Mauro Stronati, **"Impact of Early Postnatal Nutrition on the NMR Urinary Metabolic Profile of Infant"**, J. Prot. Res. 15, 3712–3723 (2016) (Mauro Stronati per Heinz Spa) DOI: 10.1021/acs.jproteome.6b00537
- Giacomo Picci, Sara Farotto, Jessica Milia, Claudia Caltagirone, Vito Lippolis, Maria Carla Aragoni, Corrado Di Natale, Roberto Paolesse, and Larisa Lvova, **"Potentiometric Sensing of Nonsteroidal Painkillers by Acyclic Squaramide Ionophores"**, ACS Sens. 8, 8, 3225–3239 (2023) DOI: 10.1021/acssensors.3c00981"



GENERAL INFORMATION

Università degli Studi di Cagliari

Department of Life and Environmental Sciences

Cittadella Universitaria – 09042 Monserrato(CA)

site web: https://www.unica.it/unica/it/dip_scienzevitaamb.page

CONTACTS

Prof. Enzo TRAMONTANO

+39 0706758046

DETAILED INFORMATION

Staff: 18 Full Professors

33 Associate Professors

32 Researchers

1 Technologist

13 Structured Technicians

6 Administrative Technicians

4 General Services

Registered students: 2,352 (Academic year 2022/2023)

Post Lauream Training: 19 enrolled in Doctorates Programs in Life, Environmental and Drug Sciences

12 Research fellows

18 fellows

Patents: 30 More information

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Pharmaceutical chemistry

Fundamental research in medicinal chemistry. Design, synthesis and studies on enzyme inhibitors and receptor agonist/antagonist endowed with heterocyclic scaffolds



Valentina Onnis (+39 0706758632)
vonnis@unica.it

Analytical chemistry

Study of the complex formation equilibria between metal ions and ligands of biomedical and environmental interest. Design, synthesis and characterization of new ligands to be used as chelating agents for scavenging toxic metal ions from human body or environmental compartments. Characterization of biomasses as sorbents of toxic metal ions or organic pollutants in the treatment of wastewaters



Valeria M. Nurchi (+39 0706754476)
nurchi@unica.it

Organic chemistry

Organic chemistry directed towards the in silico design and synthesis of heterocyclic molecules of pharmaceutical interest with potential antiviral activity, opioid antagonists, MAO



Giovanna Lucia Delogu (+39 0706758566)
delogug@unica.it

Nutraceuticals

Extraction and characterization of biomolecules with antioxidant activity and development of functional foods for the health sector



Carlo I. G. Tuberose (+39 0706758644)
tuberose@unica.it

Pharmaceutical technology

Fundamental research in pharmaceuticals, biopharmaceuticals and pharmaceutical technology: design, preparation, characterization and development of innovative drug delivery systems



Chiara Sinico (+39 0706758555)
sinico@unica.it



OTHER R&D ORGANIZATIONS

Biomedical	Research group in Biological Chemistry and Microbiology Contacts: Tiziana Cabras - tcabras@unica.it Web site: https://www.unica.it/unica/it/dip_scienzevitaamb_73.page
Botany	Research group in Botany Contacts: Giuseppe Fenu - gfenu@unica.it Web site: https://www.unica.it/unica/it/dip_scienzevitaamb_74.page
Neuroscience and Antropology	Research group in Neuroscience and Antropology Contacts: Elisabetta Marini - emarini@unica.it Web site: https://www.unica.it/unica/it/dip_scienzevitaamb_75.page
Section of Animal Biology and Ecology	Research group in Animal Biology and sea ecology Contacts: Danila Cuccu - cuccu@unica.it Web site: https://www.unica.it/unica/it/dip_scienzevitaamb_72.page

COLLABORATIONS WITH COMPANIES

List of collaborations

PUBBLICAZIONI

- <https://doi.org/10.3390/antiox12061209>
- <https://doi.org/10.3390/antiox12010080>



GENERAL INFORMATION

Università degli Studi di Cagliari

Department of Mechanical and Chemical Engineering Department

Via Marengo 2 - 09123 Cagliari (CA)

sito web: https://www.unica.it/unica/en/dip_ingmeccanica.page

CONTACTS

Prof. Antonio BALDI

+39 0706755707

DETAILED INFORMATION

Staff: 13 Full Professors

16 Associate Professors

15 Researchers

4 Structured Technicians

6 Administrative Technicians

Registered students: 850 (Academic year 2019/2020)

Post Lauream Training: 19 enrolled in Doctorates in Industrial Engineering, Engineering and Environmental Sciences and Sciences and Technologies Innovation

2 Research fellows

Patents: 12

OTHER R&D ORGANIZATIONS

**CINSA – Interdepartmental Centre
of Engineering and Environmental
Sciences**

Contacts: Giacomo Cao (+39 0706755058) - giacomo.cao@dimcm.unica.it

Web site: https://www.unica.it/unica/it/ateneo_s03_ss07.page?contentId=STR19464



GENERAL INFORMATION

Università degli Studi di Camerino

School of Pharmacy - Department of Chemistry Interdisciplinary Project (CHIP)

Via Madonna delle carceri - 62032 Camerino (MC)

sito web: <https://farmaco.unicam.it/>

CONTACTS

Prof. Gianni SAGRATINI

+39 0737402238

DETAILED INFORMATION

Staff: 14 Full Professors

28 Associate Professors

13 Researchers

11 Structured Technicians

4 Administrative Technicians

Registered students: 1,600 (Academic year 2023/2024)

Post Lauream Training: 73 enrolled in doctoral programs in Chemical and Pharmaceutical Sciences and Biotechnology: Pharmaceutical, Nutraceutical and Food Sciences

57 enrolled in II level Master in Manager of Pharmaceutical Departments

24 enrolled in II level Master in Aesthetic medicine and therapy

17 enrolled in II level Master in Complementary and integrated Therapies

13 enrolled in II level Master in Industrial Drug Regulation

53 enrolled in II level Master in Galenic Preparations

206 enrolled in II level Master in Aesthetic Medicine and Therapeutics (Athens Class and Rome Class)

7 enrolled in Advanced course Aesthetic Medicine Assistant

17 enrolled in Advanced course Molecular aspects of nutrition: from nutrigenomics to functional nutrition

20 Research fellows

8 Fellows

Patents: 14

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Botany

Green extraction, functional components and industrial applications of botanicals and waste materials from the agro-food sector



Filippo Maggi (+39 0737404506)
filippo.maggi@unicam.it

Neuroprotective agents

Synthesis of nucleosides and heterocycles as ligands of adenosine receptors and neuroprotective and antiparkinsonian agents



Rosaria Volpini (+39 0737402278)
rosaria.volpini@unicam.it

Food analysis	Development and optimization of analytical methods for the quantification of bioactive compounds and/or contaminants in food	  	Giovanni Caprioli (+39 0737402312) <i>giovanni.caprioli@unicam.it</i>
Nutraceuticals	Valorization of bioactive compounds obtained from agri-food wastes for the formulation of nutraceutical supplements and functional foods	  	Sauro Vittori (+39 0737402266) <i>sauro.vittori@unicam.it</i>
Food science	Food quality and safety for human health and development of new foods with functional properties through the optimization of the production process	  	Gianni Sagratini (+39 0737402238) <i>gianni.sagratini@unicam.it</i>
Antitumours	Synthesis and development of organometallic complexes based on ruthenium, osmium, rhodium, and iridium with anticancer properties	  	Riccardo Pettinari (+39 0737402338) <i>riccardo.pettinari@unicam.it</i>
Muscarinic receptors	Design, synthesis, and biological evaluation of new muscarinic receptor agonists/antagonists therapeutically useful for the treatment of peripheral and central nervous system diseases	  	Alessandro Piergentili (+39 0737402235) <i>alessandro.piergentili@unicam.it</i>
PROTAC	Design, synthesis, and biological evaluation of new PROTACs bearing properly modified selective alpha1-adrenergic receptor ligands, potentially useful for the treatment of prostate cancer	  	Wilma Quaglia (+39 0737402237) <i>wilma.quaglia@unicam.it</i>
Antitumours	Synthesis and biological evaluation of new compounds interacting with nucleic acids as new potential antitumor drugs	  	Gabriella Marucci (+39 0737402223) <i>gabriella.marucci@unicam.it</i>
Dopamine receptors	Design, synthesis, and biological evaluation of novel agonists/antagonists selectively targeting dopamine receptor subtypes and potentially useful as novel pharmacological tools for the treatment of glioblastoma	  	Fabio Del Bello (+39 0737402265) <i>fabio.delbello@unicam.it</i>
Natural products	Rational design, synthesis, and characterization of new ligands with metal coordinating properties and extraction and purification of naturally occurring compounds from medicinal plants, for tackling Neglected Tropical Diseases (NTD)	  	Riccardo Petrelli (+39 0737402239) <i>riccardo.petrelli@unicam.it</i>
Smart polymers	Synthesis of new excipients and advanced formulations for pharmaceutical, biomedical and cosmetic applications	  	Roberta Censi (+39 0737402231) <i>roberta.censi@unicam.it</i>
Surfactants	Synthesis, chemical-physical characterization and toxicological evaluation of biodegradable amphiphilic molecules to be used as conventional surfactants and for the preparation of pharmaceutical carriers such as liposomes and mixed vesicles, micro and nano emulsions, micelles	  	Diego Romano Perinelli (+39 0737402289) <i>diego.perinelli@unicam.it</i>
DESs	Realization and characterization of new Deep Eutectic Solvents (DESs) as environmentally sustainable and environmentally friendly liquids	  	Matteo Tiecco (+39 0737402350) <i>matteo.tiecco@unicam.it</i>

Galenic	Study of the traditional galenic preparations set up into the pharmacy, applying the scientific approach of the pharmaceutical industry. Improvement of the traditional galenic preparations both from a formulative and a preparative point of view	  	Giovanni Filippo Palmieri (+39 0737402233) <i>gianfilippo.palmieri@unicam.it</i>
Enzymatic modulators	Synthesis and biological evaluation of heterocyclic compounds modulating enzymes with kinase activity as potential analgesics	  	Michela Buccioni (+39 0737402205) <i>michela.buccioni@unicam.it</i>
Anti-inflammatory agents	Synthesis of nucleotides and heterocycles as modulators of purinergic P2X receptors and anti-inflammatory agents	  	Catia Lambertucci (+39 0737402252) <i>catia.lambertucci@unicam.it</i>
Compounds	Evaluation of medicines manipulation (splitting, crushing, dispersing into a liquid or gel) identifying eventually risks related with specific features of the drug, the dosage form or excipients. Identification of alternative manipulation paths to match all the patient necessity	  	Giulia Bonacucina (+39 0737402289) <i>giulia.bonacucina@unicam.it</i>
Free radicals	Synthesis and study of new molecules that due to their chemical structure are capable of scavenging free radicals and due to this can have application in various formulations	  	Elisabetta Torregiani (+39 0737402249) <i>elisabetta.torregiani@unicam.it</i>
Metallic complexes	Synthesis and characterization of novel coordination compounds based on N-, O, and S-donor ligands biologically and pharmacologically active	  	Claudio Pettinari (+39 0737402234) <i>claudio.pettinari@unicam.it</i>
NanoRNA	Design, synthesis and characterization of dinucleotide-based compounds able to inhibit REXO2, an exoribonuclease overexpressed in many cancer cells	  	Loredana Cappellacci (+39 0737402228) <i>loredana.cappellacci@unicam.it</i>
MOF	Design and characterization of metal-organic frameworks (MOFs) for storage and conversion of gas and energy	  	Alessia Tombesi (+39 0737402234) <i>alessia.tombesi@unicam.it</i>
NMDA receptors	Design, synthesis, and biological evaluation of new noncompetitive NMDA receptor antagonists and sigma1 receptor ligands for the treatment of disorders in which they are involved	  	Gianfabio Giorgioni (+39 0737402368) <i>gianfabio.giorgioni@unicam.it</i>
Computational chemistry	Design of compounds as modulators of purinergic membrane receptors and enzymes with computational chemistry tools	  	Diego Dal Ben (+39 0737402236) <i>diego.dalben@unicam.it</i>
Tablets	Characterization of the functionality, mechanical and rheological properties of materials intended for solid oral dosage formulations. The materials are studied using instrumented rotary tablet machine, tensile tester, DMA, DSC and all standard procedures used for the solid oral dosage forms	  	Marco Cespi (+39 0737402285) <i>marco.cespi@unicam.it</i>
Sustainable recovery	Sustainable recovery of bioactive compounds and nutraceuticals from agri-food wastes sector	  	Cinzia Mannozi (+39 0737402350) <i>cinzia.mannozi@unicam.it</i>

OTHER R&D ORGANIZATIONS

HPLC-MS and GC-MS Facilities

The mission of the HPLC-MS and GC-MS facilities is to provide centralized access to HPLC-MS and GC-MS resources for researchers at the University of Camerino

Contacts: Massimo Ricciutelli - massimo.ricciutelli@unicam.it

Web site: <https://strumentazioni.unicam.it/laboratorio/laboratorio-hplc-ms>

Nuclear Magnetic Resonance (NMR) Facility

The role of NMR Facility is to provide support for performing advanced NMR experiments

Contacts: Giovanni Rafaiani (+39 0737402208) - giovanni.rafaiani@unicam.it

Web site: <https://strumentazioni.unicam.it/laboratorio/laboratorio-di-risonanza-magnetica-nucleare>

COLLABORATIONS WITH COMPANIES

- DFE Pharma
- Evotec SE
- Fileni S.p.A.
- Indena S.p.A.
- Janssen-Pharmaceutical S.p.A.
- Nuova Simonelli S.p.A.
- Puli Ecol Recupero S.r.l.
- Redantea S.r.l.
- Sabelli S.p.A.
- Società Agricola Borgo Paglianetto S.r.l.
- Società Agricola Monte Monaco S.r.l.

PUBBLICAZIONI

- Perinelli, D.R.; Cespi, M.; Rendina, F.; Bonacucina, G.; Palmieri, G.F., "Effect of the concentration process on unloaded and doxorubicin loaded liposomal dispersions", International Journal of Pharmaceutics 2019, 560, 385–393.
- Baldassarri, C.; Giorgioni, G.; Piergentili, A.; Quaglia, W.; Fontana, S.; Mammoli, V.; Minazzato, G.; Marangoni, E.; Gasparrini, M.; Sorci, L.; Raffaelli, N.; Cappellacci, L.; Petrelli, R.; Del Bello, F., "Properly Substituted Benzimidazoles as a New Promising Class of Nicotinate Phosphoribosyltransferase (NAPRT) Modulators", Pharmaceuticals, 2023, 16, 189
- Alessandroni, L.; Caprioli, G.; Faiella, F.; Fiorini, D.; Galli, R.; Huang, X.; Marinelli, G.; Nzekoue, F.; Ricciutelli, M.; Scortichini, S.; Silvi, S.; Tramontano, A.; Turati, D.; Sagratini, G., "A shelf-life study for the evaluation of a new biopackaging to preserve the quality of organic chicken meat", Food Chemistry, 2022, 371, 131134
- Santanatoglia, A.; Caprioli, G.; Cespi, M.; Ciarlantini, D.; Cognigni, L.; Fioretti, L.; Maggi, F.; Mustafa, M.A.; Nzekoue, F.; Vittori, S., "A comprehensive comparative study among the newly developed Pure Brew method and classical ones for filter coffee production", LWT, 2023, 175, 114471
- Del Bello, F.; Bonifazi, A.; Giorgioni, G.; Cifani, C.; Micioni Di Bonaventura, M.V.; Petrelli, R.; Piergentili, A.; Fontana, S.; Mammoli, V.; Yano, H.; Matucci, R.; Vistoli, G.; Quaglia, W., "1-[3-(4-Butylpiperidin-1-yl)propyl]-1,2,3,4-tetrahydroquinolin-2-one (77-LH-28-1) as a model for the rational design of a novel class of brain penetrant ligands with high affinity and selectivity for dopamine D4 receptor", J. Med. Chem. 2018, 61, 3712–25
- Fagioli, L.; Pavoni, L.; Logrippo, S.; Pelucchini, C.; Rampoldi, L.; Cespi, M.; Bonacucina, G.; Casettari, L., "Linear viscoelastic properties of selected polysaccharide gums as function of concentration, pH, and temperature", Journal of Food Science 2019, 84, 65–72
- Huang, X.; Nzekoue, F.K.; Renzi, S.; Alesi, A.; Coman, M.M.; Pucciarelli, S.; Sagratini, G.; Silvi, S., "Influence of modified governing liquid on shelf-life parameters of high-moisture mozzarella cheese", Food Research International, 2022, 159, 111627



GENERAL INFORMATION

Università degli Studi di Camerino

School of Sciences and Technology - Department of Chemistry

Via Madonna delle Carceri (ChIP) – 62032 Camerino (MC)

sito web: <http://www.sst.unicam.it>

CONTACTS

Prof. David VITALI

+39 0737402540

Manager of Department of Chemistry:

Prof. Carlo SANTINI

+39 0737402293

DETAILED INFORMATION

Staff: 5 Full Professors

11 Associate Professors

6 Researchers

11 Structured Technicians

3 Administrative Technicians

Registered students: 201 (Academic year 2022/2023)

Post Lauream Training: 26 enrolled in doctoral programs in Chemistry

3 Research fellows

6 fellows

Patents: 4

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Green chemistry

Synthesis and derivation of heterocyclic systems by unconventional technologies (one-pot, flow chemistry, solid heterogeneous systems)



Alessandro Palmieri (+39 0737402262)
alessandro.palmieri@unicam.it

Antimicrobial materials

Synthesis and characterization of hybrid organic-inorganic antimicrobial composite materials and metal complexes with anticancer properties



Fabio Marchetti (+39 0737402217)
fabio.marchetti@unicam.it

Circular economy

Study and analysis of components having health, sensory and nutritional importance and development of methods for their analysis in foods and in by-products deriving from their production



Dennis Fiorini (+39 0737402254)
dennis.fiorini@unicam.it

Batteries	Synthesis and structural, morphological, electrochemical characterization of materials for electrochemical energy storage and conversion devices: Li-ion batteries, Na-ion batteries, fuel cells	  	Francesco Nobili (+39 0737402216) <i>francesco.nobili@unicam.it</i>
Phytochemistry	Isolation and characterization of bioactive compounds from traditional medicinal plants	  	Luciano Barboni (+39 0737402240/91) <i>luciano.barboni@unicam.it</i>
Pollution reduction	Characterization of natural compounds with environmental applications, adsorbent and plasmonic nanomaterials for the removal, detection and determination of pollutants, carbon capture as chlatrate hydrates	  	Marco Zannotti (+39 0737402272) <i>marco.zannotti@unicam.it</i>
MOF	Synthesis and characterization of coordination compounds and MOF (metal-organic framework) with potential applications in gas adsorption and catalysis	  	Corrado Di Nicola (+39 0737402234) <i>corrado.dinicola@unicam.it</i>
Metal drugs	Design, synthesis and characterization of chelating ligands and related water-soluble complexes with transition metal ions for the development of metal-based drugs and radiopharmaceuticals	  	Maura Pellei (+39 0737402213) <i>maura.pellei@unicam.it</i>
Water analysis	Analytical methods for elementary analysis and speciation analysis in order to characterize environmental and food matrices in origin, nature, quality and evolution over time. Chemical characterization of aqueous systems: mineral and thermal waters	  	Stefano Ferraro (+39 0737402271) <i>stefano.ferraro@unicam.it</i>
Materials	Development of innovative compatibilizer, additives, synthetic methodologies for high quality polymeric formulations, nanoparticles and NPs grafting. Synthesis of biopolymers starting from commercially available biomolecules or using bio-monomers coming from wastes in order to make bio based polymers. Development of new methods for recycling of polymers trough a "green" depolymerization process	  	Serena Gabrielli (+39 0737402219/11) <i>serena.gabrielli@unicam.it</i>
Synthetic methodologies	Development of Lewis acids catalysed synthetic methodologies for the stereoselective synthesis of small molecules or of their precursors	  	Cristina Cimorelli (+39 0737402268) <i>cristina.cimorelli@unicam.it</i>
Recovery	Synthesis and electrochemical characterization of Prussian Blue analogues for applications as sensors, in electrocatalysis and in energy storage. Archaeometric diagnostics. Characterization of industrial wastewater and use of geopolymers for the inertization process	  	Mario Berrettoni (+39 0737402210) <i>mario.berrettoni@unicam.it</i>
Sustainable synthesis	Synthesis of carbocyclic and heterocyclic compounds starting from acyclic precursors. Functionalization and derivatization of heterocyclic systems by combining catalysis and process sustainability	  	Gabriele Lupidi (+39 0737402215) <i>gabriele.lupidi@unicam.it</i>
Chemimetry	Multivariate analysis of chemical data for the authentication of food products	  	Paolo Conti (+39 0737402259) <i>paolo.conti@unicam.it</i>
Chemistry for life	The development of environmentally responsible methods for obtaining small molecules in the treatment of human disease and improve properties polymer composites	  	Enrico Marcantoni (+39 0737402255) <i>enrico.marcantoni@unicam.it</i>

Nitrogen derivatives	Synthesis and functionalization of nitrogen containing heterocycles by reaction of azomethine systems	    	Marino Petrini (+39 0737402253) <i>marino.petrini@unicam.it</i>
Luminescent materials	Synthesis of new materials based on coinage metals for optoelectronics, energy storage, industrial catalysis and for applications in cancer therapy	    	Rossana Galassi (+39 0737402243) <i>rossana.galassi@unicam.it</i>
Pollution reduction	Nanomaterials for photocatalytic treatments and energy production, application and characterization of natural dyes, environmental monitoring and remediation, carbon capture as chlatrate hydrates	    	Rita Giovannetti (+39 0737402272) <i>rita.giovannetti@unicam.it</i>
Coordination compounds	Synthesis and characterization of metal complexes with potential catalytic and pharmacological properties. Study of functionalized inorganic additives for industrial applications	    	Carlo Santini (+39 0737402293) <i>carlo.santini@unicam.it</i>
Batteries	Investigation of the physico-chemical mechanisms and processes, with focus on the surface region, driving energy storage and conversion, photocatalysis and heterogeneous catalysis	    	Miguel Ángel Muñoz Márquez (+39 0737402311) <i>miguel.munoz@unicam.it</i>
Luminescent materials	Synthesis of luminescent materials containing gold for technological applications	    	Alfredo Burini (+39 0737402221) <i>alfredo.burini@unicam.it</i>
Circular economy	Synthesis and electrochemical characterization of Prussian Blue analogues for applications as sensors, in electrocatalysis and in energy storage. Diagnostics of metallic materials of archaeometric interest. Analysis of air composition for health purposes in environments of natural interest	    	Silvia Zamponi (+39 0737402210) <i>silvia.zamponi@unicam.it</i>

OTHER R&D ORGANIZATIONS

Technical scientific area and large equipment	Centre for structural survey equipment (NMR, MS) and advanced analytical technologies (HPLC, HPLC-MS) Contacts: Giovanni Rafaiani (+39 0737402208) - giovanni.rafaiani@unicam.it Web site: https://sst.unicam.it
Laboratory for microscopy	SEM and MicroRaman Laboratory for Structural Material Surveys Contacts: Marco Minicucci (+39 0737402554) - marco.minicucci@unicam.it Web site: https://sst.unicam.it
Macro-sector services for teaching, internationalization and post-graduate	Technical management of educational managers, Student secretarial office, Student services office and international mobility, coordination of administrative-accounting management teaching and management projects for teaching Contacts: Andrea Braschi (+39 0737402005) - direzione.generale@unicam.it Web site: https://sst.unicam.it

COLLABORATIONS WITH COMPANIES

- Associati Fisiomed srl
- Chimec SpA
- Delta SpA
- Dipharma Francis srl
- Dompé Farmaceutici SpA
- Ecotech System srl
- Elantas Europe srl
- Elica SpA
- Fainplast srl
- Fileni SpA
- Fintel srl
- Indena SpA
- Irides srl (spin-off di Unicam)
- LOCCIONI srl
- MIDAC SpA
- Orim SpA
- Synbiotec srl

PUBBLICAZIONI

- L. Alessandrini, et al. **A shelf-life study for the evaluation of a new biopackaging to preserve the quality of organic chicken meat.** Food Chemistry 2022, 371, 131134, DOI: 10.1016/j.foodchem.2021.131134.
- B. Bassetti, et al. **A Practical and Efficient Conversion of Luteolin into Luteoloside.** Synthesis-Stuttgart 2021, 53 (21), 4075-4078, DOI: 10.1055/a-1531-2385.
- I. Maule, et al. **Thermal Stability Evaluation of Nitroalkanes with Differential Scanning Calorimetry.** Organic Process Research & Development 2021, 25 (4), 781-788, DOI: 10.1021/acs.oprd.0c00433.
- C. Salvesi, et al. **Six-Month Synbio((R)) Administration Affects Nutritional and Inflammatory Parameters of Older Adults Included in the PROBIOSENIOR Project.** Microorganisms 2023, 11 (3), 801, DOI: 10.3390/microorganisms11030801
- C. Salvesi, et al. **Impact of a probiotic diet on well-being of healthy senior: THE PROBIOSENIOR PROJECT.** Journal of Applied Microbiology 2022, 133 (5), 2941-2953, DOI: 10.1111/jam.15747.
- S. Scortichini, et al. **Development and application of a solid-phase microextraction gas chromatography mass spectrometry method for analysing volatile organic compounds produced during cooking.** Journal of Mass Spectrometry 2020, 55 (11), e4534, DOI: 10.1002/jms.4534.
- M. Zannotti, et al. **Hydrocarbon degradation strategy and pyoverdine production using the salt tolerant Antarctic bacterium Marinomonas sp. ef1.** Rsc Advances 2023, 13 (28), 19276-19285, DOI: 10.1039/d3ra02536e.



GENERAL INFORMATION

Università degli Studi di Catania
Department of Civil Engineering and Architecture
Via Santa Sofia 64 - 95125 Catania (CT)
sito web: <http://www.dicar.unict.it/>

CONTACTS

Prof. Ing. Matteo IGNACCOLO
+39 0957382507

DETAILED INFORMATION

Staff: 31 Full Professors
60 Associate Professors
29 Researchers
3 Structured Technicians
18 Administrative Technicians

Registered students: 1,200 (Academic year 2022/2023)

Post Lauream Training: 30 enrolled in Doctorates in assessment and mitigation of urban and territorial risks
15 enrolled in II level Master in Environmental remediation of polluted areas for ecological transition
14 Research fellows
10 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

SEM

Analisi spettroscopiche SEM, FT-IR



Alberta Latteri (+39 0957382752)
alatter@unict.it

Thermal properties

Synthesis and characterization of toughened thermoset blends. Process technology of polymeric fibre-reinforced composites. Comparative kinetic study of the thermal degradation of model polymers. Comparative kinetic study of the thermal degradation of nanocomposites. Synthesis and characterization of aromatic copolymers. Thermal characterization of films used on food packaging application. Physico-Chemical characterization of organic molecules. Synthesis and characterization of POSS nanoparticles



Ignazio Blanco (+39 0957382819)
iblanco@unict.it

Rheology

Study and measurement of thermodynamic and transport properties of polymeric and filled materials (e.g., specific heat, thermal conductivity, viscoelastic properties of polymers, and rheological properties)



Antonella Patti
antonella.patti@unict.it

3D printing

Static and dynamic mechanical testing of materials, polymeric and non-polymeric, and composite materials. Additive manufacturing, available technologies: Fortud FDM 400mc, Object Eden260 Connex 1, LCD Precision, Ultimaker S5, Zortrax M200. Development of bioepoxy resins recyclable for eco-composite materials. Innovative materials for additive manufacturing: filaments from natural polymers; resin blends for LCD processes; innovative manufacturing processes. LCA analysis of composite materials. Development of nanofibers with surfaces decorated with nanostructures for photocatalysis



Gianluca Cicala (+39 0957382760)
gcicala@unict.it

Polymers

Realization of biopolymer matrix nanocomposites, capable of optimizing the mechanical-electrical conversion of low-frequency movements, developed by selecting materials for matrix, filler, and electrodes based on their green nature



Antonino Pollicino (+39 0957382797)
apollicino@unict.it

COLLABORATIONS WITH COMPANIES

- Advanced Composite Systems
- NTET Group

PUBBLICAZIONI

- **"Modeling of a Bacterial Cellulose-based Composite in Bending Configuration"**, 2022 IEEE Sensors Applications Symposium, SAS 2022 - Proceedings, 2022.
- **"A Comparative Investigation of Deformation Transducers Based on Bacterial Cellulose and Different Ionic Liquids"**. Conference Record - IEEE Instrumentation and Measurement Technology Conference.
- **"Composition-controlled chemical bath deposition of Fe-doped NiO microflowlers for boosting oxygen evolution reaction"**. International Journal of Hydrogen Energy, 2023, 48(48), pp. 18291–18300.
- **"Chemical Recycling of Fully Recyclable Bio-Epoxy Matrices and Reuse Strategies: A Cradle-to-Cradle Approach"**. Polymers, 2023, 15(13), 2809.
- **"A Regression Approach to Model Refractive Index Measurements of Novel 3D Printable Photocurable Resins for Micro-Optofluidic Applications"**. Polymers, 2023, 15(12), 2690.
- **"Predicting the Printability of Poly(Lactide) Acid Filaments in Fused Deposition Modeling (FDM) Technology: Rheological Measurements and Experimental Evidence"**. ChemEngineering, 2023, 7(1), 1.
- **"Design and manufacturing of a surface plasmon resonance sensor based on inkjet 3D printing for simultaneous measurements of refractive index and temperature"**. International Journal of Advanced Manufacturing Technology, 2023, 124(7-8), pp. 2261–2278.



Dipartimento di Scienze Chimiche, Farmaceutiche ed Agrarie



GENERAL INFORMATION

Università degli Studi di Ferrara

Department of Chemical, Pharmaceutical and Agricultural Sciences

Via Luigi Borsari 46 - 44121 Ferrara (FE)

sito web: <http://scf.unife.it/it>

CONTACTS

Prof. Alberto CAVAZZINI

+39 0532455331

Eleonora Bigoni - Responsabile Amministrativo (+39 0532293548)

DETAILED INFORMATION

Staff: 10 Full Professors

27 Associate Professors

47 Researchers

12 Structured Technicians

Registered students: 1,021 (Academic year 2020/2021)

Post Lauream Training: 60 enrolled in Doctorate in Chemical Sciences

9 Research fellows

4 fellows

Patents: 8



GENERAL INFORMATION

Università degli Studi di Ferrara
Department of Engineering
Via Giuseppe Saragat 1 - 44122 Ferrara (FE)
sito web: https://de.unife.it/en?set_language=en

CONTACTS

Prof. Marco FRANCHINI
+39 0532974930

DETAILED INFORMATION

Staff: 18 Full Professors
32 Associate Professors
13 Researchers
4 Structured Technicians
6 Administrative Technicians
1 General Services

Registered students: 1,901 (Academic year 2022/2023)
Post Lauream Training: 33 enrolled in doctoral of Engineering Science
19 Research fellows
19 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Circular economy

Study and optimization of microstructural and mechanical properties of secondary aluminium alloys



Gian Luca Garagnani (+39 0532974811)
grggic@unife.it

SoC

Assessment of the efficiency in the removal of contaminants of emerging concern from water by means of innovative technologies



Paola Verlicchi (+39 0532974938)
paola.verlicchi@unife.it

Additive manufacturing

Study and optimization of process parameters of additive manufacturing of metallic alloys and influence on mechanical and microstructural properties



Mattia Merlin (+39 0532974831)
mattia.merlin@unife.it

Climate change

Climate change impacts on drinking water treatments



Vittoria Grillini (+39 0532974927)
vittoria.grillini@unife.it

Tribologia

Study of the tribological behaviour of coatings and surface treatments of metallic alloys



Annalisa Fortini (+39 0532974914)
annalisa.fortini@unife.it

COLLABORATIONS WITH COMPANIES

- Ali S.p.A. - Carpigiani
- Ansatech S.p.A.
- C.A.D.F. S.p.A.
- Centoform S.r.l.
- CNH Italia
- Dna Algo S.r.l.
- Ferrari S.p.A.
- Fonderie Mario Mazzucconi S.p.A.
- Iaselab S.r.l.
- IMV S.p.A.
- Lamberti S.p.A.
- Maserati S.p.A.
- Materiacustica S.r.l.
- Mechvib Engineering S.r.l.
- Nuovo Pignone Tecnologie S.r.l.
- Peen Service (Gruppo Norblast) S.r.l.
- Phononic Vibes S.r.l.
- Sidel S.p.A.
- Spal S.r.l.
- Unicom Group
- ZF Automotive Italia Srl - ZF Group S.p.A.

PUBBLICAZIONI

- Gutiérrez, M., P. Verlicchi, and D. Mutavdžić Pavlović. "Study of the Influence of the Wastewater Matrix in the Adsorption of Three Pharmaceuticals by Powdered Activated Carbon" *Molecules* (MDPI), vol. 28, no. 5, 2023, 28052098 doi:10.3390/molecules28052098.
- "Drinking water from surface and ground water: production costs and influence of the climate change", (Proceeding di un convegno internazionale) lavoro presentato in collaborazione con HERA.
- "Improvement in the pharmaceutical removal from hospital wastewater in a full-scale hybrid PAC-MBR", (Proceedings di un convegno internazionale), Lavoro presentato in collaborazione con HERA.
- Vulpio, A., Oliani, S., Suman, A., Zanini, N.; Saccenti, P. "A Mechanistic Model for the Predictive Maintenance of Heavy-Duty Centrifugal Fans Operating With Dust-Laden Flows", *Journal of Engineering for Gas Turbines and Power*, 2023, 145(1), 011007.
- Suman, A., Vulpio, A., Pinelli, M., D'Amico, L., "Microtomography of Soil and Soot Deposits: Analysis of Three-Dimensional Structures and Surface Morphology", *Journal of Engineering for Gas Turbines and Power*, 2022, 144(10), 101010.
- Suman, A., Vulpio, A., Casari, N., di Lillo, F., D'Amico, L., "Analysis of soil and soot deposits by X-ray computed microtomography", *Powder Technology*, 2021, 394, pp. 608–621.
- Casari, N., Fortini, A., Pinelli, M., Vulpio, A., Zanini, N., "Measurement approaches for the analysis of soil layer by microparticle adhesion", *Measurement: Journal of the International Measurement Confederation*, 2022, 187, 110185.



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DICEA
DIPARTIMENTO
DI INGEGNERIA CIVILE
E AMBIENTALE



GENERAL INFORMATION

Università degli Studi di Firenze

Department of Civil and Environmental Engineering (DICEA)

Via Santa Marta 3 - 50139 Firenze (FI)

sito web: <https://www.dicea.unifi.it/>

CONTACTS

Prof. Claudio LUBELLO

+39 0552758811

DETAILED INFORMATION

Staff: 9 Full Professors

23 Associate Professors

19 Researchers

6 Structured Technicians

10 Administrative Technicians

Registered students: 900 (Academic year 2021/2022)

Post Lauream Training: 50 enrolled in the International doctoral program in Civil and Environmental Engineering

20 Research fellows

17 fellows

Patents: 2

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Circular economy

Biological processes based on granular biomass for the recovery of nutrients from wastewater



Tommaso Lotti (+39 3288973191)
tommaso.lotti@unifi.it

Trattamento acque

Reduction and recovery of resources from sludge



Riccardo Gori (+39 3394609634)
riccardo.gori@unifi.it

Bioeconomy

Modelling and control of microbial ecosystems for the production of polymers in wastewater treatment



Giulio Munz (+39 335590746)
giulio.munz@unifi.it

Trattamento acque

Monitoring of microplastics in wastewater treatment



Riccardo Gori (+39 3394609634)
riccardo.gori@unifi.it

Sulphur

Treatment and recovery of matter and energy in sulphur rich gaseous and liquid streams



Giulio Munz (+39 335590746)
giulio.munz@unifi.it

Trattamento acque

Biopolymers recovery from excess sludge deriving from biological wastewater treatment



Tommaso Lotti (+39 3288973192)
tommaso.lotti@unifi.it



OTHER R&D ORGANIZATIONS

Cer2co	Tanning Waste Research Center. Joint University-Enterprise Laboratory Contacts: Giulio Munz (+39 3355907476) - giulio.munz@unifi.it
UNALAB	Joint public private laboratory of Sanitary and Environmental Engineering Contacts: Claudio Lubello (+39 335337420) - claudio.lubello@unifi.it

COLLABORATIONS WITH COMPANIES

- Alia servizi Ambientali
- Consorzio cuoiodepur S.p.A.
- Gida S.p.A.
- Itaprogetti Engineering S.p.A.
- Publiacqua S.p.A.

PUBBLICAZIONI

- Lotti, T., Kleerebezem, R., Lubello, C., van Loosdrecht, M.C.M., **"Physiological and kinetic characterization of a suspended cell anammox culture"**, (2014) Water Research, 60, pp. 1-14
- Ruggero, F., Gori, R., Lubello, C., **"Methodologies to assess biodegradation of bioplastics during aerobic composting and anaerobic digestion: A review"**, (2019) Waste Management and Research, 37 (10), pp. 959-975
- Lotti, T., Carretti, E., Berti, D., Martina, M.R., Lubello, C., Malpei, F., **"Extraction, recovery and characterization of structural extracellular polymeric substances from anammox granular sludge"** (2019) Journal of Environmental Management, 236, pp. 649-656
- Mannucci, A., Munz, G., Mori, G., Lubello, C. **"Anaerobic treatment of vegetable tannery wastewaters: A review"** (2010) Desalination, 264 (1-2), pp. 1-8
- Ruggero, F., Onderwater, R.C.A., Carretti, E., Roosa, S., Benali, S., Raquez, J.-M., Gori, R., Lubello, C., Wattiez, R. **"Degradation of Film and Rigid Bioplastics During the Thermophilic Phase and the Maturation Phase of Simulated Composting"** (2021) Journal of Polymers and the Environment, 29 (9), pp. 3015-3028
- Polizzi, C., Alatrisme-Mondragón, F., Munz, G. **"The role of organic load and ammonia inhibition in anaerobic digestion of tannery fleshin"** (2018) Water Resources and Industry, 19, pp. 25-34
- Polizzi, C., Gabriel, D., Munz, G. **"Successful sulphide-driven partial denitrification: Efficiency, stability and resilience in SRT-controlled conditions"** (2022) Chemosphere, 295, art. no. 133936



GENERAL INFORMATION

Università degli Studi di Genova
Department of Chemistry and Industrial Chemistry

Via Dodecaneso 31 - 16146 Genova (GE)

sito web: <http://chimica.unige.it/>

CONTACTS

Prof. Luca BANFI

+39 0103536113

DETAILED INFORMATION

Staff: 12 Full Professors

19 Associate Professors

21 Researchers

15 Structured Technicians

7 Administrative Technicians

Registered students: 427 (Academic year 2022/2023)

Post Lauream Training: 90 enrolled in doctoral programs in Science and Technology of Chemistry and Materials

10 Research fellows

12 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Remediation

Traditional and emerging membrane processes for the treatment of wastewaters



Antonio Comite
antonio.comite@unige.it

Plant security

Smart systems for monitoring performance/quality and for failure identification in chemical plants



Alberto Servida
servida@unige.it

Circular economy

Sustainable processes for the synthesis of metal nanoparticles and for the recovery of precious metals from electronic industry waste



Andrea Reverberi
andrea.reverberi@unige.it

Green chemistry

New green processes using photocatalysis and air as oxidant



Andrea Basso
andrea.basso@unige.it

Bioeconomy

Pretreatment and conversion for the valorization of lignocellulosic biomass and of biomass derived from depuration processes



Antonio Comite
antonio.comite@unige.it

Renewable energies

Fuel cells



Paola Costamagna
paola.costamagna@unige.it

Remediation

Use of synthetic minerals for recovery of pollutants from wastewater



Anna Maria Cardinale
cardinal@chimica.unige.it

Remediation	Development of materials and processes for wastewater treatment and abatement of emerging pollutants by photocatalysis. Development of materials and processes for the synthesis of membranes for antibacterial applications by photocatalysis	 	   	Maurizio Ferretti <i>ferretti@chimica.unige.it</i>
Circular economy	Recovery and reuse of permanent magnets from inverter engines of washing machines	 	   	Davide Peddis <i>davide.peddis@unige.it</i>
Bioeconomy	Synthesis of high added value substances from renewable sources, also using biocatalysis and multicomponent reactions	 	   	Luca Banfi <i>banfi@chimica.unige.it</i>
Renewable energies	Synthesis of new nanostructured materials for applications in photoluminescent devices and solar concentrators	 	   	Federico Locardi <i>federico.locardi@unige.it</i>
Pollutants monitoring	Monitoring of emerging contaminants in water through innovative approaches	 	   	Emanuele Magi <i>emanuele.magi@unige.it</i>
Renewable energies	CO ₂ entrapment processes and processes for production and/or separation of hydrogen	 	   	Camilla Costa <i>camilla.costa@unige.it</i>

COLLABORATIONS WITH COMPANIES

- AEP Polymers
- AmSpec
- Angelini
- ASG Superconductors
- AST
- Attilio Carmagnani
- BIOINDUSTRIA
- Clariant
- COCIV
- Danieli TELEROBOTS
- Eco2Energy
- Eurofins
- FACI
- FAMGA
- Ferrania
- FINCANTIERI
- Fratelli Parodi
- GEEG
- Gemmate Technologies
- H2Energy
- IREN
- IREOS
- IRETI
- Istituto Italiano della Saldatura
- ITACAT
- ItalianaCoke
- Lamberti
- MECTRON
- MICAMO
- NuovaPignone
- PhaseMotion
- Pirelli
- PROGER
- Receng
- Refuel
- RINA
- SILOR
- SIMAM
- Sutter Industries
- TECHNOGENE
- Themis

PUBBLICAZIONI

- Alberti, S., Comite, A., Pagliero, M., Magi, E., Codda, G., Sossai, D., Caratto, V. and Ferretti, M., "**Performance Comparison among KN95-Certified Face Masks by Classical Techniques and Innovative Test**", Applied Sciences-Basel 2022, 12.
- Caputo, S., Kovtun, A., Bruno, F., Ravera, E., Lambruschini, C., Melucci, M. and Moni, L., "**Study and application of graphene oxide in the synthesis of 2,3-disubstituted quinolines via a Povarov multicomponent reaction and subsequent oxidation**", Rsc Advances 2022, 12, 15834-15847.
- Damonte, G., Maddalena, L., Fina, A., Cavallo, D., Muller, A. J., Caputo, M. R., Mariani, A. and Monticelli, O., "**On novel hydrogels based on poly(2-hydroxyethyl acrylate) and polycaprolactone with improved mechanical properties prepared by frontal polymerization**", European Polymer Journal 2022, 171.
- Franchi, E., Cardaci, A., Pietrini, I., Fusini, D., Conte, A., D'Auris, A. D., Grifoni, M., Pedron, F., Barbafieri, M., Petruzzelli, G. and Vocciant, M., "**Nature-Based Solutions for Restoring an Agricultural Area Contaminated by an Oil Spill**", Plants-Basel 2022, 11.
- MacKeown, H., Benedetti, B., Di Carro, M. and Magi, E., "**The study of polar emerging contaminants in seawater by passive sampling: A review**", Chemosphere 2022, 299.
- Pani, M., Provino, A., Smetana, V., Shtender, V., Bernini, C., Mudring, A. V. and Manfrinetti, P., "**Four ternary silicides in the La-Ni-Si system: from polyanionic layers to frameworks**", Crystengcomm 2022, 24, 8219-8228.
- Sanchez, E. H., Vasilakaki, M., Lee, S. S., Normile, P. S., Andersson, M. S., Mathieu, R., Lopez-Ortega, A., Pichon, B. P., Peddis, D., Binns, C., Nordblad, P., Trohidou, K., Nogues, J. and De Toro, J. A., "**Crossover From Individual to Collective Magnetism in Dense Nanoparticle Systems: Local Anisotropy Versus Dipolar Interactions**", Small 2022, 18.

MORE INFO

Ph.D. programmes in collaboration with companies. European projects in collaboration with companies. Participation to national or regional research projects in collaboration with companies.



UNIVERSITÀ DEGLI STUDI DI GENOVA

GENERAL INFORMATION

Università degli Studi di Genova
Department of Civil, Chemical and Environmental Engineering (DICCA)
Via Montallegro 1 - 16145 Genova (GE)
sito web: <http://dicca.unige.it/en/>

CONTACTS

Prof. Alessandro BOTTARO
+39 0103352540

DETAILED INFORMATION

Staff: 24 Full Professors
35 Associate Professors
33 Researchers
30 Structured and Administrative Technicians

Registered students: 160 (Academic year 2022/2023)

Post Lauream Training: 13 enrolled in doctoral programs in Dottorato in Chemical, Materials and Processes Engineering
25 Research fellows
7 fellows

Patents: 11 10 with 100% entitled to UNIGE; 1 in co-entitlement (33% UNIGE)

DATASHEET ICONS

 PRODUCTS

 PROPRIETARY SEARCH

 PROCESSES

 THIRD PARTY RESEARCH

 SERVICES

 TECHNOLOGIES

R&D ACTIVITIES DETAIL

Environmental biotechnology

Use of microalgae and cyanobacteria for CO₂ capture



Attilio Converti (+39 0103352593)
converti@unige.it

Valorizzazione biomasse

Energy valorisation of biomass and waste in a circular economy strategy, simulation of thermochemical plants



Cristina Moliner (+39 0103352912)
cristina.moliner@unige.it

Active packaging

Biomaterial production for active food packaging applications



Patrizia Perego (+39 0103352916)
p.perego@unige.it

Biofuels

Anaerobic digestion of agro-industrial residues for a zero-waste approach



Attilio Converti (+39 0103352593)
converti@unige.it

SOFC-SOEC

Fabrication and characterization of innovative solid oxide cells for the generation/conversion of green hydrogen



Antonio Barbucci (+39 3292104511)
barbucci@unige.it

Water

Electrochemical treatments for wastewater and removal of organic pollutants from groundwater



Marco Panizza (+39 0103356032)
marco.panizza@unige.it

Hydrogen	Study of the hydrogen supply chain as an energy vector and fuel cells at high temperature and innovative electrolyzers	    	Barbara Bosio (+39 3408844029) <i>barbara.bosio@unige.it</i>
Waste valorisation	Agro-food waste valorization via extraction and microencapsulation of high added value compounds	    	Patrizia Perego (+39 0103352916) <i>p.perego@unige.it</i>
Biofuels	Medium-low temperature pyrolysis for the production of chemicals and biofuels	    	Alessandro Alberto Casazza (+39 0103352584) <i>alessandro.casazza@unige.it</i>
Corrosion	Study of electrochemical corrosion and corrosion protection	    	Marina Delucchi (+39 3493675493) <i>marina.delucchi@unige.it</i>
Polymeric nanoparticles	Nanoparticles production for target drug delivery	    	Roberta Campardelli (+39 0103352914) <i>roberta.campardelli@unige.it</i>
Polyhydroxyalkanoates	Processes for biopolymers production through microorganisms from agri food wastes	    	Margherita Pettinato (+39 0103352913) <i>margherita.pettinato@unige.it</i>
Chemical bioengineering	Fabrication of electrospun prostheses for small diameters vessel regeneration	    	Pier Francesco Ferrari (+39 0103352913) <i>pier.francesco.ferrari@unige.it</i>
Environmental biotechnology	Urban and Industrial wastewater treatment by microorganisms	    	Alessandro Alberto Casazza (+39 0103352584) <i>alessandro.casazza@unige.it</i>
Electrolysers	New electrocatalysts for Anion Exchange Membrane and Alkaline Water Electrolyzers at industrial scale	    	Ombretta Paladino (+39 3292104457) <i>paladino@unige.it</i>
Batteries	Electrochemical procedures for the analysis of SOH during fast charging on Li-ion batteries	    	M. Paola Carpanese (+39 3392142480) <i>carpanese@unige.it</i>
Sospensioni granulari	Characterisation of the mechanical properties of particulate flows (fluid + solid particles) either in laminar or turbulent flow conditions	    	Marco Mazzuoli (+39 3387142904) <i>marco.mazzuoli@unige.it</i>
Green steel	Simulation of steel processes and model validation	    	Elisabetta Arato (+39 3467439478) <i>elisabetta.arato@unige.it</i>
simulazione di processo	Feasibility studies of traditional and innovative chemical processes, multiscale simulation of chemical processes using home-made and commercial software and validation of models	    	Elisabetta Arato (+39 3467439478) <i>elisabetta.arato@unige.it</i>
Wastewater	Plasmonic nano-photocatalysts for effective treatment of wastewater effluents	    	Ombretta Paladino (+39 3292104457) <i>paladino@unige.it</i>
Emulsions	Encapsulation of bioactive compounds in emulsions	    	Roberta Campardelli (+39 0103352914) <i>roberta.campardelli@unige.it</i>
Microplastics	Transport processes of microplastics, marine debris and pathogens associated with waves, currents and sediments	    	Marco Mazzuoli (+39 3387142904) <i>marco.mazzuoli@unige.it</i>

OTHER R&D ORGANIZATIONS

TICASS – Tecnologie Innovative per il Controllo Ambientale e lo Sviluppo Sostenibile

TICASS is a non-profit consortium established in 2010 and is the Managing Body of the ligurian regional Research and Innovation Hub "Energy, Environment, Sustainable Development" which has about 100 associates among SMEs, large companies and research centers

Contacts: Elisabetta Arato - elisabetta.arato@ticass.it

Web site: <https://www.ticass.it/>

COLLABORATIONS WITH COMPANIES

- ABB
- Ecospray
- IcePharma
- Infineum
- Paul Wurth

PUBBLICAZIONI

- "Process analysis of a molten carbonate fuel cell on-board application to reduce vessel CO₂ emissions" - DOI: 10.1016/j.cep.2023.109415
- "Experimental and Modeling Investigation of CO₃=/OH- Equilibrium Effects on Molten Carbonate Fuel Cell Performance in Carbon Capture Applications" - DOI: 10.3389/fenrg.2021.669761
- "Preliminary tests for the thermo-chemical conversion of biomass in a spouted bed pilot plant" - DOI: 10.1002/cjce.23223
- "Reduction of nitrates in waste water through the valorization of rice straw: LIFE LIBERNITRATE project" - DOI: 10.3390/su10093007
- "Direct numerical simulations of ripples in an oscillatory flow" - DOI: 10.1017/jfm.2018.1005
- "Zein electrospun fibers purification and vanillin impregnation in a one-step supercritical process to produce safe active packaging" - DOI: 10.1016/j.foodhyd.2021.107082
- "Innovations in smart packaging concepts for food: An extensive review" - DOI: 10.3390/foods9111628



Università degli Studi di Messina

Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali

GENERAL INFORMATION

Università degli Studi di Messina

Department of Chemical, Biological, Pharmaceutical and Environmental Science

Viale F. Stagno d'Alcontres 31 – 98166 Messina (ME)

sito web: <http://www.unime.it/dipartimenti/chibiofaram>

CONTACTS

Prof. Sebastiano CAMPAGNA

+39 0906765709

Starting from Academic year A.A. 2020/21, the Department has activated a three-year course of studies in Sustainability and Environmental Innovation. The course complements the existing course of studies in Chemistry, providing a less specialized but more interdisciplinary preparation in the fields of interest for environmental issues

DETAILED INFORMATION

Staff: 31 Full Professors

68 Associate Professors

50 Researchers

18 Structured Technicians

13 Administrative Technicians

8 General Services

Registered students: 2,700 (Academic year 2019/2020)

Post Lauream Training: 58 enrolled in Doctorates in Chemical sciences, Biology, industrial chemistry

27 Research fellows and fellows

Patents: 3

OTHER R&D ORGANIZATIONS

**CASPE (Laboratory of Catalysis for Sustainable Energy Production)-
Reference center for INSTM**

Centre for the study of functional materials and analytical technologies for sustainable processes

Contacts: Siglinda Perathoner (+39 0906765609 - +39 3478768833) - perathon@unime.it

**Interuniversity Research Center
for artificial Photosynthesis
(SOLARCHEM)**

Interuniversity center including Messina, Bologna and Ferrara Universities

Contacts: Sebastiano Campagna (+39 0906765709) - campagna@unime.it

**Laboratory for supramolecular
photochemistry and ultrafast
spectroscopy**

Contacts: Fausto Puntoriero (+39 0906765727) - fpuntoriero@unime.it

Web site: <https://gruppodifotochimica.wixsite.com/photochemistry>



Università degli Studi di Messina

DIPARTIMENTO DI INGEGNERIA



GENERAL INFORMATION

Università degli Studi di Messina

Department of Engineering

Contrada di Dio - 98166 Messina (ME)

sito web: <https://www.unime.it/it/dipartimenti/ingegneria>

CONTACTS

Prof. Eugenio GUGLIELMINO

+39 0906765911

DETAILED INFORMATION

Staff: 32 Full Professors

39 Associate Professors

30 Researchers

11 Structured Technicians

12 Administrative Technicians

3 General Services

Registered students: 500 (Academic year 2022/2023)

Post Lauream Training: 21 enrolled in Doctorates in Chemistry and Materials Engineering and Constructions, Cyber Physical Systems, Civil, Environmental and Safety Engineering, Industrial Engineering, Engineering

11 Research fellows

12 Fellows

Patents: 13

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Stoccaggio termochimico

Design, synthesis and characterization of nanostructured materials for applications in heterogeneous catalysis for the synthesis of chemicals and environmental applications and for the storage and reuse of thermal energy. Currently, the research activity is focused on the design and synthesis of more effective materials for the storage of thermal energy at low and medium temperatures, in the form of chemical energy



Candida Milone (+39 0906765911)
candida.milone@unime.it

Heterogeneous catalysis

Development of catalysts and catalytic processes based on oxides of transition and earth metals, as an alternative to the supported noble metals, for processes of environmental depollution in liquid and gaseous phase through total oxidation reactions. Development of catalysts based on metal oxides for selective oxidation processes with oxygen for green chemistry technologies and for preferential oxidation of CO in hydrogen streams (PROX)



Francesco Arena (+39 0906765494)
francesco.arena@unime.it

Environmental pollutants

Development of innovative chemical sensors based on new nanomaterials for the monitoring of water and environmental pollutants



Consuelo Celesti (+39 0906765264)
ccelesti@unime.it

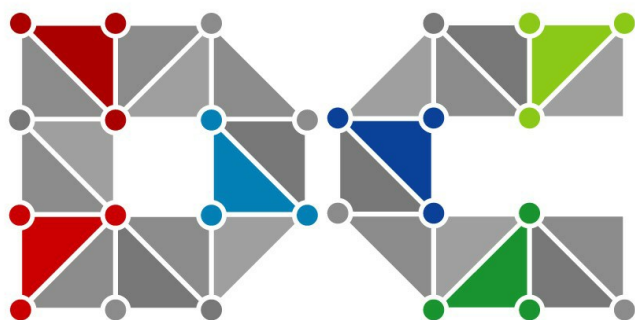
Nanomaterials	Development of advanced synthetic methodologies for the organic functionalization of graphene-based nanomaterials for applications in biomedical, sensors and environmental fields. Development of natural and synthetic polymeric biomaterials for applications in tissue engineering	  	Daniela Iannazzo (+39 0906765569) <i>diannazzo@unime.it</i>
Risk analysis	Assessments supporting the technological development of products and processes based on safety analysis and estimations of impacts on health and the environment	  	Maria Francesca Milazzo (+39 09096765595) <i>mfmilazzo@unime.it</i>
Biomass	Innovative technologies for the conversion and valorization of biomasses deriving from the citrus industry processing waste. The aim of the research activity is to study the transformation of residues, resulting from the citrus processing industry, by Hydrothermal Carbonization Process (HTC) into a high value-added biofuel (biochar)	  	Claudia Espro (+39 0906765264) <i>espro@unime.it</i>
Chemical sensors	Development of sensors and biosensors with electrochemical, acoustic, conductometric detection for applications in the pharmaceutical, food, environmental, industrial and biomedical sectors. Creation and testing of prototypes for the monitoring of (bio) markers in physiological fluids (exhaled, blood, urine)	  	Giovanni Neri (+39 0906765297) <i>gneri@unime.it</i>

OTHER R&D ORGANIZATIONS

Civil and Building Engineering Labs	Contacts: Serena Repici (administrative secretary) - serena.repici@unime.it Web site: https://www.unime.it/it/dipartimenti/ingegneria/laboratorio-ingegneria/laboratori-dellarea-civile-edile-0
ICT and Electronic Engineering Labs	Contacts: Serena Repici (administrative secretary) - serena.repici@unime.it Web site: https://www.unime.it/it/dipartimenti/ingegneria/laboratorio-ingegneria/laboratori-dellarea-elettronica-informatica-0
Industrial Engineering Labs	Contacts: Serena Repici (administrative secretary) - serena.repici@unime.it Web site: https://www.unime.it/it/dipartimenti/ingegneria/laboratorio-ingegneria/laboratori-dellarea-elettronica-informatica-0

PUBBLICAZIONI

- Materials, 2023, 16(13),4818
- Applied Sciences, 2023, 13(13),7843
- Applied Catalysis B: Environmental, 2022, 300,120715
- Nanomaterials, 2023, 13(16),2380
- ChemElectroChem, 2023, 10(13),e202300004
- Molecular Catalysis, 2023 544,113182
- Materials, 2022, 15(22),8208



DIPCHI
DIPARTIMENTO DI CHIMICA

SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi di Milano

Department of Chemistry

Via Golgi 19 - 20133 Milano (MI)

sito web: <https://eng.chimica.unimi.it/ecm/home>

CONTACTS

Prof. Luigi LAY

+39 0250314269

DETAILED INFORMATION

Staff: 21 Full Professors

41 Associate Professors

27 Researchers

25 Structured Technicians

12 Administrative Technicians

1 General Service

Registered students: 853 (Academic year 2022/2023)

Post Lauream Training: 40 enrolled in doctoral program in Chemistry

34 enrolled in doctoral program in Industrial Chemistry

20 enrolled in II level Master in Process chemistry applied to Active Pharmaceutical Ingredients

8 Research fellows

10 fellows

Patents: 27 <https://www.unimi.it/en/third-mission/innovation-research-and-business/patents-and-technologies>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Semiconductors

Benzimidazole compounds for "n" doping type semiconductors, additives for solar cells and fluorophores for luminescent devices



Gabriele Di Carlo (+39 0250314397)
gabriele.dicarlo@unimi.it

Sistemi cargo-delivery

Wireless chiral electropump systems for drug delivery and analyte separation



Serena Arnaboldi (+39 0250314216)
serena.arnaboldi@unimi.it

Vaccini glicocongiugati

Design and synthesis of pathogen-associated oligosaccharides with potential immunological activity



Luigi Lay (+39 0250314062)
luigi.lay@unimi.it

Solar cells

Coordination compounds for application in solar cells



Alessia Colombo (+39 0250314414)
alessia.colombo@unimi.it

Non-invasive analysis	Development and application of new analytical methodologies for the micro-invasive, non-invasive and in-situ analyses of materials of artistic and archaeological interest	  	Vittoria Guglielmi (+39 0250314426) <i>vittoria.guglielmi@unimi.it</i>
Nanoparticles	Preparation and characterization of organic-inorganic hybrid nanocomposites for diagnostic and therapeutic purposes	  	Daniela Maggioni (+39 0250314350) <i>daniela.maggioni@unimi.it</i>
Sensors	Innovative nanomaterials for sensoristic applications in medical and environmental fields	  	Eleonora Pargoletti (+39 0250314210) <i>eleonora.pargoletti@unimi.it</i>
Drug design	Computational modeling of peptidomimetics and glycomimetics	  	Laura Belvisi (+39 0250314086) <i>laura.belvisi@unimi.it</i>
Antimicrobial resistance	Design and synthesis of bioactive compounds (e.g., antibacterial, antiviral, antitumoral)	  	Sara Sattin (+39 0250314096) <i>sara.sattin@unimi.it</i>
Sensors	Development of new electroanalytical techniques; study and synthesis and characterization of nanostructured hybrid material for modified electrodes (for sensorial purposes) to be used in the determination, even in traces, of emerging pollutants in environmental matrices	  	Luigi Falciola (+39 0250314057) <i>luigi.falciola@unimi.it</i>
Carbon oxide	"Phosgene free" synthetic methods, with possible industrial relevance, of isocyanates, carbamates and ureas from nitroarenes or amines	  	Francesco Ferretti (+39 0250314368) <i>francesco.ferretti@unimi.it</i>
Drug design	Computational studies of bioactive molecules and characterization of the interactions with biological targets	  	Monica Civera (+39 0250314082) <i>monica.civera@unimi.it</i>
Adsorbent materials	Development of sustainable adsorbent photocatalytic materials for aqueous and gaseous matrices remediation	  	Ermelinda Falletta (+39 0250314410) <i>ermelinda.falletta@unimi.it</i>
Carbon capture	Synthesis and characterization of Metal-Organic Frameworks (MOFs) for energy/environmental application	  	Lucia Carlucci (+39 0250314445) <i>lucia.carlucci@unimi.it</i>
LCA	Conversion of ceramic plants to be powered by hydrogen. Study of the impact on the quality of the products. LCA studies	  	Claudia Bianchi (+39 0250314253) <i>claudia.bianchi@unimi.it</i>
Sintesi biocatalizzate	Biocatalysis with isolated enzymes. Synthesis of flavor enhancers and nutraceuticals of natural origin. Biocatalyzed degradation of natural and non-natural polymers	  	Carlo Morelli (+39 0250314099) <i>carlo.morelli@unimi.it</i>
Environmental monitoring	Environmental chemical analyzes applied to the study of atmospheric pollution, water and ashes from the combustion of solid urban waste	  	Paola Fermo (+39 0250314246) <i>paola.fermo@unimi.it</i>
Products	High-value chemicals (biodegradable surfactants, protein hydrolysate) from agro-food wastes and by-products	  	Giovanna Speranza (+39 0250314097) <i>giovanna.speranza@unimi.it</i>

Flow chemistry	Flow chemistry: catalytic reactors and micro(meso) flow reactors for the synthesis of pharmaceutical intermediates		   	Alessandra Puglisi (+39 0250314189) <i>alessandra.puglisi@unimi.it</i>
Heterogeneous catalysis	Development and optimization of heterogeneous catalysts for green chemistry (valorization of biomass) and for processes of environmental chemistry (water and air)		   	Antonella Gervasini (+39 0250314254) <i>antonella.gervasini@unimi.it</i>
Waste water	Valorization of waste water from agri-food sector: nutrients recovery and water remediation		   	Ermelinda Falletta (+39 0250314410) <i>ermelinda.falletta@unimi.it</i>
Ionic liquids	Innovative media (environmentally friendly and/or for safe processing): ionic liquids and deep eutectic solvents, including chiral ones		   	Patrizia Romana Mussini (+39 0250314211) <i>patrizia.mussini@unimi.it</i>
CO2 reduction	Synthesis of polynuclear metal complexes for OLED devices, bulk heterojunction or DSSC solar cells, and as catalysts for electrochemical CO2 reduction		   	Monica Panigati (+39 0250314352) <i>monica.panigati@unimi.it</i>
Electroactive materials	Electrochemical and electroanalytical techniques applied to the characterization and preparation of electroactive molecules and materials		   	Patrizia Romana Mussini (+39 0250314211) <i>patrizia.mussini@unimi.it</i>
Flame retardants	Synthesis of bio-inspired polymeric flame retardants for cellulosic fabrics and polyurethane foams		   	Jenny Alongi (+39 0250314108) <i>jenny.alongi@unimi.it</i>
Luminescence	Coordination compounds for application in biomedicine and in luminescent devices		   	Claudia Dragonetti (+39 0250314425) <i>claudia.dragonetti@unimi.it</i>
Polymer degradation	Hydrolytic, thermal and photochemical degradation of polymeric materials		   	Elisabetta Ranucci (+39 0250314132) <i>elisabetta.ranucci@unimi.it</i>
Nitrogen heterocycles	Synthesis of nitrogen heterocyclic compounds and allylic amines through activation of C-H bonds by nitroarenes, catalyzed by transition metal complexes		   	Fabio Ragaini (+39 0250314373) <i>fabio.ragaini@unimi.it</i>
Ecosustainable materials	Design of nanostructured materials for the production of energy and fine chemicals from biomass		   	Alberto Villa (+39 0250314361) <i>alberto.villa@unimi.it</i>
Renewable fuels	Synthesis and study of electro- and photo-catalysts for the production of hydrocarbons and hydrogen from CO2 reduction and water splitting		   	Ivan Grigioni (+39 0250314247) <i>ivan.grigioni@unimi.it</i>
Optoelectronics	Organic and hybrid inorganic-materials for optoelectronics		   	Elena Cariati (+39 0250314370) <i>elena.cariati@unimi.it</i>
Flow chemistry	Synthesis of chiral API or intermediates of pharmaceutical interest by using ad hoc designed 3D-printed micro(meso) reactors and biodegradable, nature-derived alternative solvents		   	Maurizio Benaglia (+39 0250314171) <i>maurizio.benaglia@unimi.it</i>
Trasferimento idrogeno	Visible light-promoted methodologies for hydrogen transfer reactions and formation of C-C and C-heteroatom bonds		   	Luca Pignataro (+39 0250314090) <i>luca.pignataro@unimi.it</i>

Anti-tumour drugs	Design and synthesis of new drug release systems; design and synthesis of small-molecule ligands for clinically relevant protein targets	  	Alberto Dal Corso (+39 0250314076) <i>alberto.dalcorso@unimi.it</i>
Natural products	Isolation and characterization of natural products	  	Daniele Passarella (+39 0250314081) <i>daniele.passarella@unimi.it</i>
Preventive diagnostics	Software and web platform development for spectroscopic molecular characterization and early diagnosis of Parkinson's disease	  	Michele Ceotto (+39 0250314258) <i>michele.ceotto@unimi.it</i>
Hydrazine	Synthesis, reactivity and applications of hydrazinic containing compounds	  	Dario Perdicchia (+39 0250314155) <i>dario.perdicchia@unimi.it</i>
Industrial chemistry	Experimental and simulation study of separation processes of industrial interest through distillation, absorption, adsorption. Synthesis, characterization and experimental tests of catalysts for gas-solid (Fischer-Tropsch, methanol) or solid-liquid (hydrogenations and oxidations) reactions. Use of process simulation software for optimization and development of technologies. Availability of a virtual immersive room for visits and missions inside chemical plants	  	Carlo Pirola (+39 0250314283) <i>carlo.pirola@unimi.it</i>
Pharmaceutical products	X-ray powder and single crystal diffraction on solid pharmaceutical forms; polymorphs and solvates. Synthesis and characterization of porous materials (metal-organic frameworks, MOFs) for gas adsorption and separation	  	Valentina Colombo (+39 0250314450) <i>valentina.colombo@unimi.it</i>
Photoelectrocatalysis	Development and characterization of efficient and sensitive photocatalysts for solar energy conversion and environmental applications	  	Maria Vittoria Dozzi (+39 0250314298) <i>mariavittoria.dozzi@unimi.it</i>
Sintesi stereoselettiva	Design and synthesis of new Brønsted acids and chiral Lewis bases as organic catalysts to promote stereoselective reactions	  	Sergio Rossi (+39 0250314166) <i>sergio.rossi@unimi.it</i>
Organic synthesis	Design and synthesis of bioactive molecules and materials	  	Alessandra Silvani (+39 0250314080) <i>alessandra.silvani@unimi.it</i>
Adsorbent materials	Organic or organometallic adsorbent materials (MOFs, COFs) and their composites for applications in CO ₂ capture (flue gas, DAC), separation of gases and VOCs, removal of fluorinated pollutants (PFAS) from water sources	  	Valentina Colombo (+39 0250314450) <i>valentina.colombo@unimi.it</i>
Photoelectrochemistry	Electrochemical and photoelectrochemical materials and processes for energy conversion and for pollution remediation	  	Alessandro Minguzzi (+39 0250314224) <i>alessandro.minguzzi@unimi.it</i>
Valorizzazione biomasse	Development of nanostructured heterogeneous catalysts for sustainable biomass transformation in fine chemicals, biofuels and H ₂	  	Laura Prati (+39 0250314357) <i>laura.prati@unimi.it</i>
Photocatalysis	Photocatalysis and related industrial applications, photocatalytic product certifications, study of chemical reactions in continuous and discontinuous reactors	  	Claudia Bianchi (+39 0250314253) <i>claudia.bianchi@unimi.it</i>

Reactors	Reactors and processes: experimental development, optimization and simulation in the field of industrial and environmental chemistry, catalysis and energy conversion. Economic analysis	    	Ilenia Rossetti (+39 0250314059) <i>ilenia.rossetti@unimi.it</i>
Photoelectrochemistry	Synthesis and electrochemical and photoelectrochemical characterization of composites and hybrids materials	    	Valentina Pifferi (+39 0250314222) <i>valentina.pifferi@unimi.it</i>
Green chemistry	First row transition metal complexes as sustainable catalyst for selective oxidations and CO2 valorization reactions; sustainable depolymerization reactions	    	Alessandro Caselli (+39 0250304372) <i>alessandro.caselli@unimi.it</i>
Peptide-nucleic acids	Design and synthesis of properly modified peptide-nucleic acids for applications in gene therapy and diagnostic	    	Silvia Cauteruccio (+39 0250314147) <i>silvia.cauteruccio@unimi.it</i>
Nanostructured materials	Development of metal-based catalysts on nanometric scale for the sustainable synthesis of industrially appealing chemicals	    	Cristina Della Pina (+39 0250314408) <i>cristina.dellapina@unimi.it</i>
Antifouling products	Design of new, non-toxic, non-biocide release antifouling agents based on antiadhesive, nature inspired molecules	    	Domenico Albanese (+39 0250314165) <i>domenico.albanese@unimi.it</i>
Optical materials	Coordination compounds with non linear optical and/or luminescent properties	    	Dominique Roberto (+39 0250314399) <i>dominique.roberto@unimi.it</i>
CO2 reduction	Modelling of inorganic and organometallic species for the electrocatalytic reduction of CO2	    	Pierluigi Mercandelli (+39 0250314447) <i>pierluigi.mercandelli@unimi.it</i>
Carbohydrate chemistry	Design and synthesis of carbohydrate-based compounds as new potential vaccine adjuvants	    	Giuseppe D'Orazio (+39 0250314061) <i>giuseppe.dorazio@unimi.it</i>
Nanomaterials	Synthesis and characterization of electrode materials and nanomaterials for energy and environmental applications	    	Mariangela Longhi (+39 0250314226) <i>mariangela.longhi@unimi.it</i>
Colloids	Formulations of novel disperse systems (suspensions, emulsions, foams, etc) for industrial applications	    	Giuseppe Cappelletti (+39 0250314228) <i>giuseppe.cappelletti@unimi.it</i>
Electroanalysis	Electroanalysis of molecules of biological/pharmaceutical interest and enantiodiscrimination of chiral molecules with electroanalytical methods	    	Patrizia Romana Mussini (+39 0250314222) <i>patrizia.mussini@unimi.it</i>
Trattamento superficie	Development of organic-inorganic hybrid materials for environmental and energy applications. Tailoring of surface properties (wetting, adhesion)	    	Daniela Meroni (+39 0250314220) <i>daniela.meroni@unimi.it</i>
Studi LCA	New electrode materials for energy and environmental applications. Measurements and calibrations of electrochemical quantities. Life Cycle Assessments studies	    	Alberto Vertova (+39 0250314232) <i>alberto.vertova@unimi.it</i>
Thermoplastic polymers	Synthesis and study of thermoplastic and thermosetting polymeric materials with low environmental impact for engineering applications	    	Marco Ortenzi (+39 0250314135) <i>marco.ortenzi@unimi.it</i>

Sustainable catalysis	Preparation, functionalization and characterization of novel sustainable materials for application in heterogeneous, environmental catalysis	  	Sebastiano Campisi (+39 0250314261) <i>sebastiano.campisi@unimi.it</i>
Spontaneous emissions	Analytical methodologies applied to plant matrices, food, spontaneous emissions in the study of environmental interactions	  	Laura Santagostini (+39 0250314379) <i>laura.santagostini@unimi.it</i>
Photosensitisers	Porphyrin photosensitizers for solar cells, water splitting and CO2 reduction	  	Francesca Tessore (+39 0250314398) <i>francesca.tessore@unimi.it</i>
Structural chemistry	Crystal growth, morphological characterization and crystal structure determination by diffractometric technique. Data mining in structural analysis	  	Silvia Rizzato (+39 0250314442) <i>silvia.rizzato@unimi.it</i>
Drugs	Synthesis and functionalization of heterocycles-containing drugs	  	Valerio Fasano (+39 0250314141) <i>valerio.fasano@unimi.it</i>
CO2 valorisation	Synthesis of aza-compounds (heterocycles and allylic amines) by using organic azides as atom efficient reagents as well as CO2 as a C1 renewable carbon source	  	Emma Gallo (+39 0250314374) <i>emma.gallo@unimi.it</i>
Photoelectrocatalysis	Synthesis and characterization of catalytic and photo(electro)catalytic materials for the abatement of pollutants and the solar energy conversion. Process simulation and optimization of heat recovery steam generator (HRSG)	  	Gian Luca Chiarello (+39 0250314281) <i>gianluca.chiarello@unimi.it</i>
Tecniche elettroanalitiche	Electroanalytical techniques applied to organic/biological molecules, food, waters, drugs, pollutants; pH and potential standards; conductivity	  	Patrizia Romana Mussini (+39 020314211) <i>patrizia.mussini@unimi.it</i>
Fuel cells	Synthesis and characterization of micro- and nano-structured functional oxides for environmental and energy applications	  	Marco Scavini (+39 0250314270) <i>marco.scavini@unimi.it</i>
Cultural heritage	Development and application of advanced analytical techniques, micro- and non-invasive, for the diagnostics of artistic and archaeological materials	  	Silvia Bruni (+39 0250314393) <i>silvia.bruni@unimi.it</i>
Studi cristallografici	Crystallographic and computational studies of molecular crystals; molecular recognition and self-assembling with application in materials science; Molecular Dynamics and Monte Carlo Techniques applied to solid state	  	Leonardo Lo Presti (+39 0250314252) <i>leonardo.lopresti@unimi.it</i>
Drug-protein interaction	Structural and conformational characterization of organic compounds. Study of ligand-receptor interaction	  	Francesca Vasile (+39 0250314085) <i>francesca.vasile@unimi.it</i>
Crystallisation	X-ray powder and single crystal diffraction on solid pharmaceutical forms; polymorphs, solvates and co-crystals. Crystallization. Thermal analyses (variable temperature Powder X-ray diffraction, TGA/DSC, hot stage microscopy)	  	Valentina Colombo (+39 0250314450) <i>valentina.colombo@unimi.it</i>
Sintesi glicomimetici	Design and synthesis of mono- and polyvalent antimicrobial glycomimetic compounds	  	Anna Bernardi (+39 0250314092) <i>anna.bernardi@unimi.it</i>

OTHER R&D ORGANIZATIONS

Ap.E – Applied Electrochemistry Laboratory	Ap.E is a Research Laboratory of the Department of Chemistry of the Università degli Studi di Milano. Ap.E has an intense research activity in the industrial applications of electrochemical science and technology, and in particular in the field of energy conversion and environmental protection and remediation Contacts: Alberto Vertova (+39 0250314232) - alberto.vertova@unimi.it Alessandro Minguzzi (+39 0250314224) - alessandro.minguzzi@unimi.it Web site: http://www.ape.unimi.it
Lab Analysis & Service	Lab Analysis actively interacts with the research groups of the Department, public and private research institutes and companies for the resolution of analytical problems. Moreover, it can host students training them on its analytical techniques Contacts: Ilenia Rossetti (+39 0250314059) - ilenia.rossetti@unimi.it labanalisi.chimica@unimi.it Web site: http://www.chimica.unimi.it/ecm/home/analisi-e-service
LaMPo – Polymers and Materials Laboratory	R&D for companies on polymers and polymeric materials Contacts: Laura Prati (+39 0250314357) - laura.prati@unimi.it Web site: http://lampo.unimi.it/
LCS – Laboratory of homogeneous Catalysis for sustainable Synthesis	LCS covers many research areas related to the use of chiral and achiral catalysts and to the development of innovative stereoselective synthetic methods to realize sustainable synthesis. LCS is active in all three "pillars" of the modern catalysis, namely organometallic catalysis, biocatalysis and organocatalysis, and in recyclable catalysts, technology-driven catalysis, catalysts for sensors Contacts: Maurizio Benaglia (+39 0250314171) - maurizio.benaglia@unimi.it Web site: http://www.lcs.unimi.it
SMARTMATLAB - Smart Materials Laboratory	Laboratory for nanotechnologies, micro- and nano-electronics, biotech, advanced materials, photonics and optoelectronics Contacts: Elena Selli (+39 0250314237) - elena.selli@unimi.it Web site: http://users2.unimi.it/smartmatlab/wordpress
UNITECH COSPECT: Comprehensive Substances characterization via advanced sPECTtroscopy	The principal aim of the Technological Platform Unitech "CSPECT", of the University of Milano, is to offer high level of service and scientific consultancy in the study of composition and structural characterization of organic and inorganic compounds, of synthetic and natural origin Contacts: Scientific Coordinator Francesco Demartin (+39 0250314457) - francesco.demartin@unimi.it Technical Manager Enrico Caneva (+39 0250314587) - enrico.caneva@unimi.it Web site: https://www.unimi.it/it/ricerca/luoghi-organizzazione-e-infrastrutture/unitech



GENERAL INFORMATION

Università degli Studi di Milano

Department of Pharmaceutical Science

Via Mangiagalli 25 - 20133 Milano (MI)

sito web: <http://eng.disfarm.unimi.it/ecm/home>

CONTACTS

Prof.ssa Maria Luisa GELMI

+39 0250319342

DETAILED INFORMATION

Staff: 12 Full Professors

18 Associate Professors

25 Researchers

12 Structured Technicians

10 Administrative Technicians

Registered students: 3,500 (Academic year 2020/2021)

Post Lauream Training: 30 enrolled in doctoral programs in Medicinal Chemistry

25 Research fellows

Patents: 75

GENERAL INFORMATION

Università degli Studi di Milano
Department of Biosciences

Via Celoria 26 - 20133 Milano (MI)

sito web: <https://www.dbs.unimi.it/ecm/home>

CONTACTS

Prof. Paolo LANDINI

+39 0250314814

direzione.bioscienze@unimi.it

DETAILED INFORMATION

Staff: 21 Full Professors

52 Associate Professors

25 Researchers

3 Technologists

24 Structured Technicians

19 Administrative Technicians

2 General Services

Registered students: 1,577 (Academic year 2022/2023)

Post Lauream Training: 69 enrolled in doctoral programs in Molecular and Cellular Biology

39 Research fellows

20 fellows

Patents: 15 Website: <https://www.knowledge-share.eu/proprietario/universita-degli-studi-di-milano/>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Transcriptional factors

Structural characterization of inhibitors of transcription factors as possible anticancer drugs and for the treatment of muscular dystrophy



Marco Nardini (+39 0250314893)
marco.nardini@unimi.it

LeCoVax

Mucosal vaccination using a protozoan parasite as a vehicle for antigen delivery



Sara Epis (+39 0250314710)
sara.epis@unimi.it

Antimicrobial peptides

Development of peptide libraries to identify interfering peptides as new antimicrobial solutions



Simona Masiero (+39 0250315039)
simona.masiero@unimi.it

Vascular physiology

Identification of new antiangiogenic & vasoactive therapeutic candidates in Oncology/Ophthalmology to treat solid cancers and neovascular eye diseases (e.g. retinopathies, age-related macular degeneration)



Alessandro Fantin (+39 0250314952)
alessandro.fantin@unimi.it

Lips-2

Development of compounds protecting from mosquito bites



Paolo Gabrieli (+39 0250314786)
paolo.gabrieli@unimi.it

Plant biotechnology

Engineering of plant reproduction to introduce the production of clonal seeds in crops



Lucia Colombo (+39 0250314772)
lucia.colombo@unimi.it

Enzymes	Mechanisms of wild-type and engineered enzyme reactions, inhibition and regulation, in particular flavoprotein oxidoreductases, also with rapid reaction approaches and under anaerobiosis	  	Maria Antonietta Vanoni (+39 0250314901) <i>maria.vanoni@unimi.it</i>
Terapia fagica	Developmento of phage therapy as a tool to fight antibiotic resistant bacterial infections	  	Federica Briani (+39 0250314839) <i>federica.briani@unimi.it</i>
Protein aggregation	Structural biology and biophysics of amyloidogenic proteins that produce toxic aggregates. Systemic amyloidosis with cardiac involvement	  	Stefano Ricagno (+39 0250314914) <i>stefano.ricagno@unimi.it</i>

OTHER R&D ORGANIZATIONS

Cytometry facility	The facility allows to perform a mutiparametric analysis on monodispersed suspensions of cells on the basis of their physical and optical characteristics (often by employing specific fluorescent markers). The presence of a FACS sorter also allows to select and collect (up to single cell level) specific cell types, for further downstream applications (i.e. cloning, culture, RT-PCR, DNA/RNA seq) Contacts: Claudia Bazzini (+39 0250314931) - claudia.bazzini@unimi.it Web site: https://bioscienzebio.unimi.it/facility_cellsorter.php
Platform for molecular interactions	The MST (microscale thermophoresis) analysis offers users the ability to measure affinity over a wide range of dissociation constant (Kd): from very strong bonds to weak interactions, therefore it can be used both in basic research and in the characterization of small molecules in pharmacological field Contacts: Stefano Ricagno (+39 0250314914) - stefano.ricagno@unimi.it Web site: https://bioscienzebio.unimi.it/facility_monolith.php
Histology Platform	The Histology Platform provides expertise and instrumentation necessary for the preparation and processing of biological samples included in paraffin, OCT or other microtome cutting media, vibratome or cryostat depending on the tissue and/or subsequent staining or method to be performed Contacts: Massimo Alini (+39 0250315023) - massimo.alini@unimi.it Web site: https://bioscienzebio.unimi.it/facility_ist.php
Microbiology and Functional Genomics Platform (MI-GEM)	MI-GEM offers services using model microorganisms, both prokaryotic and eukaryotic, such as the collection of bacterial strains and vectors supplied upon request, the preparation of competent E. coli cells, the development of MIC determination assays and functional genomics in yeast. Currently these activities are reserved for internal users of the Department of Biosciences. Contacts: Federica Briani (+39 0250314839) - federica.briani@unimi.it Web site: https://bioscienzebio.unimi.it/facility_mi_gem.php
Platform for advanced technologies	The platform for advanced technologies is equipped by: 1) ImageXpress Micro Confocal, high content screening microscope system for fast and automated imaging of biological samples both in bright field and with fluorescence; 2) SMARTer ICELL8 cx Single Cell, for single cell high-throughput studies; 3) Seahorse XFe24 Analyzer, for real-time quantification of cellular bioenergetic parameters Contacts: Cristina Ruberti (+39 0250315047) - cristina.ruberti@unimi.it Web site: https://bioscienzebio.unimi.it/facility_TA
Fermentation Platform	The microorganism fermentation facility, housed in a fully-equipped laboratory located in the basement of Tower building A, supplies the necessary expertise and instrumentation for the scale up of microorganism fermentation processes, from laboratory scale to pilot scale. The facility is particularly indicated for achieving optimal conditions for recombinant protein overexpression. Furthermore, cell masses can be lysed using a highly efficient cell disrupter instrument Contacts: Marco Antonio Benati (+39 0250315043) - marco.benati@unimi.it Web site: https://bioscienzebio.unimi.it/facility_ferm.php
UNITECH NOLIMITS, the UNIMI IMAGING facility	The DBS coordinates the activities of the Microscopy facility UNITECH NOLIMITS to which external users, supported by technical assistance, can access. The services offered are: Fluorescence Optical Microscopy (Wide-field, Single- and Multi-photon Confocal microscopes, Super Resolution, Spinning Disk and Stereomicroscopy); Electron Microscopy (FE-SEM-EDS, TEM with STEM/EDX) on inorganic, polymeric and biological material; Preparation of samples for electron microscopy (SEM and TEM) and cryoultramicrotomy; MRI for magnetic resonance analysis on small animals; image analysis Contacts: Alex Costa (+39 0250314831) - alex.costa@unimi.it Web site: https://www.unimi.it/it/ricerca/luoghi-organizzazione-e-infrastrutture/unitech/unitech-nolimits

Plants Platform

The Plants Platform is a center for collecting, implementing and disseminating techniques and technologies related to the study of plants. The technical staff involved is available to the DBS research groups interested in using the services provided. The platform provides a seed bank service for the conservation of the germplasm of ecotypes, cultivars or mutants at controlled temperature and humidity. In addition, it provides a plasmid repository service dedicated to clones of interest to the plant area, in collaboration and with the help of the microbiology platform

Contacts: piattaforma.piante@unimi.it

Web site: https://bioscienzebio.unimi.it/facility_piante.php

Protein Purification Platform

Service for purification, engineering and characterization of proteins, including recombinant ones. Setting up and execution of enzymatic assays

Contacts: Louise Gourlay (+39 0250314903) - louise.gourlay@unimi.it

Web site: https://bioscienzebio.unimi.it/facility_ppp

COLLABORATIONS WITH COMPANIES

- Italfarmaco S.p.A.
- Dompé farmaceutici S.p.A.

PUBBLICAZIONI

- Arnoldi I, Mancini G, Fumagalli M, Gastaldi D, D'Andrea L, Bandi C, Di Venere M, Iadarola P, Forneris F, Gabrieli P., **"A salivary factor binds a cuticular protein and modulates biting by inducing morphological changes in the mosquito labrum"**, Curr Biol. 2022 Aug 22;32(16):3493-3504.e11. doi: 10.1016/j.cub.2022.06.049
- Cellupica E, Caprini G, Cordella P, Cukier C, Fossati G, Marchini M, Rocchio I, Sandrone G, Vanoni MA, Vergani B, Žrubek K, Stevenazzi A, Steinkühler C., **"Difluoromethyl-1,3,4-oxadiazoles are slow-binding substrate analog inhibitors of histone deacetylase 6 with unprecedented isotype selectivity"**, J Biol Chem. 2023 Jan;299(1):102800. doi: 10.1016/j.jbc.2022.102800
- Cellupica E, Caprini G, Fossati G, Mirdita D, Cordella P, Marchini M, Rocchio I, Sandrone G, Stevenazzi A, Vergani B, Steinkühler C, Vanoni MA., **"The Importance of the "Time Factor" for the Evaluation of Inhibition Mechanisms: The Case of Selected HDAC6 Inhibitors"**, Biology (Basel). 2023 Jul 26;12(8):1049. doi: 10.3390/biology12081049
- Epis S, Varotto-Bocazzi I, Manenti A, Rubolini D, Gabrieli P, Cattaneo GM, Gourlay L, Dapporto F, Monti M, Razzano I, Leonardi M, Iannaccone M, Recordati C, Bertola L, Fiorina P, Marvasi L, Montomoli E, Zuccotti G, Bandi C., **"Efficacy of mucosal vaccination using a protozoan parasite as a vehicle for antigen delivery: IgG and neutralizing response after rectal administration of LeCoVax-2, a candidate vaccine against COVID-19"**, Pharmacol Res. 2022 Dec;186:106546. doi: 10.1016/j.phrs.2022.106546
- Milazzo, F. M., Chaves-Sanjuan, A., Minenkova, O., Santapaola, D., Anastasi, A. M., Battistuzzi, G., Chiapparino, C., Rosi, A., Merlo Pich, E., Albertoni, C., Marra, E., Luberto, L., Viollet, C., Spagnoli, L. G., Riccio, A., Rossi, A., Santoro, M. G., Ballabio, F., Papissoni, C., Camilloni, C., De Santis, R. (2023), **"Spike mutation resilient scFv76 antibody counteracts SARS-CoV-2 lung damage upon aerosol delivery"**, Molecular therapy : the journal of the American Society of Gene Therapy, 31(2), 362–373. <https://doi.org/10.1016/j.ymthe.2022.09.010>
- Paroni M, Leccese G, Ranzani V, Moschetti G, Chiara M, Perillo F, Ferri S, Clemente F, Noviello D, Conforti FS, Ferrero S, Karnani B, Bosotti R, Vasco C, Curti S, Crosti MC, Guarini P, Rossetti G, Conte MP, Vecchi M, Pagani M, Landini P, Facciotti F, Abrignani S, Caprioli F, Gegnat J., **"An intestinal Th17 subset is associated with inflammation in Crohn's Disease and activated by adherent-invasive Escherichia coli (AIEC)"**, J Crohns Colitis. 2023 Jul 18;jjad119. doi: 10.1093/ecco-jcc/jjad119
- Rosa S, Tagliani A, Bertaso C, Tadini L, Visentin C, Gourlay LJ, Priol S, Feni L, Pellegrino S, Pesaresi P, Masiero S., **"The cyclic peptide G4CP2 enables the modulation of galactose metabolism in yeast by interfering with GAL4 transcriptional activity"**. Front Mol Biosci. 2023 Mar 1;10:1017757. doi: 10.3389/fmolb.2023.1017757



DiSAA

DIPARTIMENTO
di SCIENZE
AGRARIE e
AMBIENTALI



GENERAL INFORMATION

Università degli Studi di Milano

Department of Agricultural and Environmental Sciences - Production, Territory, Agroenergy (DISAA)

Via Giovanni Celoria 2 - 20133 Milano (MI)

sito web: <http://www.disaa.unimi.it/ecm/home>

CONTACTS

Prof. Gian Battista BISCHETTI

+39 0250316888

DETAILED INFORMATION

Staff: 21 Full Professors

44 Associate Professors

29 Researchers

2 Technologists

26 Structured Technicians

11 Administrative Technicians

1 General Services

Registered students: 442 (Academic year 2022/2023)

Post Lauream Training: 32 enrolled in Doctorate in Agriculture, Environment and Bioenergy

56 Research fellows

7 fellows

Patents: 16

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Fertilisers reduction

Production of mineral fertilizers by removing the nitrogen from livestock manure



Giorgio Provolo (+39 0250316855)
giorgio.provolo@unimi.it

Farms emissions

Methods for the determination of emissions to air in the management of livestock manure



Alberto Finzi (+39 0250316858)
alberto.finzi@unimi.it

Functional food

Valorisation of vegetal residues from food industry to produce bioactive peptides and carbohydrates



Barbara Scaglia (+39 0250316535)
barbara.scaglia@unimi.it

Renewable fertilisers

Production of P fertilizers from digestates



Fulvia Tambone (+39 0250316547)
fulvia.tambone@unimi.it

Animal welfare

Development of sensors for monitoring environmental conditions in livestock farms



Elisabetta Riva (+39 0250316856)
elisabetta.riva@unimi.it



OTHER R&D ORGANIZATIONS

Costruzioni Rurali

Contacts: Giorgio Provolo (+39 02 50316855) - giorgio.provolo@unimi.it
Web site: <http://www.costruzionirurali.unimi.it>

GRUPPO RICICLA

Contacts: Fabrizio Adani (+39 0250316545) - fabrizio.adani@unimi.it
Web site: <https://sites.unimi.it/gruppo-ricicla/it>

COLLABORATIONS WITH COMPANIES

- Acqua e Sole S.r.l.
- Agrorisorse S.r.l.
- Eni S.p.A.
- R3 GIS S.r.l.
- Sema engineering S.r.l.

GENERAL INFORMATION

University of Milano – Bicocca

Department of Biotechnology and Biosciences

Piazza della Scienza 2 - 20126 Milano (MI)

sito web: <http://www.btbs.unimib.it/>

CONTACTS

Prof.ssa Francesca GRANUCCI

+39 0264483553

DETAILED INFORMATION

Staff: 13 Full Professors

37 Associate Professors

38 Researchers

2 Technologists

17 Structured Technicians

Registered students: 1.600 (Academic year 2021/2022)

Post Lauream Training: 45 enrolled in doctoral programs in Converging Technologies for Biomolecular Systems

40 Research fellows

22 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Bioprocesses

Valorization of agro-food wastes by fermentation bioprocesses; chemical platforms; biofuels; biorefineries



Danilo Porro
danilo.porro@unimib.it

Bioprospecting

Developments of qualitative and quantitative methods for analysis of secondary metabolites with bioactive activities derived from food, unprocessed plants, and agricultural by-products matrices



Luca Campone (+39 0264483330)
luca.campone@unimib.it

Bioactive compounds

Design and synthesis of bioactive compounds



Barbara La Ferla (+39 0264483421)
barbara.laferla@unimib.it

Quality control

Quality control and safety evaluation of foods, botanical food supplements, and nutraceutical products, for determination of pesticide, heavy metal, mycotoxins, PCBs, phytopharmaceutical derivatives, drug abuse, endocrine disruptor



Luca Campone (+39 0264483330)
luca.campone@unimib.it

Synthetic biology

Engineering of microbial strains by synthetic biology to reshape metabolism and physiology to improved robustness and productivity



Paola Branduardi (+39 0264483418)
paola.branduardi@unimib.it

Biomedicine

Materials for biomedicine, nutraceutic and cosmetic



Laura Russo (+39 0364483462)
laura.russo@unimib.it

Sustainable chemistry

Sustainable chemistry. Bio-based polymers and innovative materials from renewable resources



Laura Cipolla (+39 0264483460)
laura.cipolla@unimib.it

Biocatalysis	Enzymatic synthesis and/or modification of (macro)-molecules with various applications including APIs, building blocks and biopolymers. Enzyme immobilization. Biocatalytic cascades	  	Immacolata Serra (+39 0264484140) <i>immacolata.serra@unimib.it</i>
Bioactive compounds	Identification of bioactive compounds from natural sources	  	Alessandro Palmioli (+39 0264483309) <i>alessandro.palmioli@unimib.it</i>
Metabolomics	NMR-based molecular recognition and metabolomics studies	  	Cristina Airoidi (+39 0264483303) <i>cristina.airoidi@unimib.it</i>
Bioprocesses	Characterization of microorganisms and development/optimization of bioproduction processes for sustainable production of bulk or added-value compounds	  	Valeria Mapelli (+39 0264484140) <i>valeria.mapelli@unimib.it</i>
Extraction	Optimization of green extraction techniques (supercritical fluid extraction, pressurized liquid extraction) and samples preparation methods (solid phase extraction, solid phase microextraction) for the analysis of bioactive compounds from natural matrices	  	Luca Campone (+39 0264483330) <i>luca.campone@unimib.it</i>
Enzymology	Biocatalysis; new enzymes and proteins in particular from extreme environments; protein engineering	  	Marina Lotti (+39 0264483527) <i>marina.lotti@unimib.it</i>
Sustainable chemistry	Synthesis of bioactive compounds, sustainable chemistry, drugs development	  	Francesco Peri <i>francesco.peri@unimib.it</i>
Hydrogen	H ₂ photoproduction: quantum mechanical simulations of ground and excited states of bioinorganic systems	  	Luca De Gioia (+39 0264483463) <i>luca.degioia@unimib.it</i>

OTHER R&D ORGANIZATIONS

BBC – Bicocca Biotechnicum Center	Research and technology transfer in bioprocesses Contacts: Danilo Porro - danilo.porro@unimib.it Web site: https://www.btbs.unimib.it/it/dipartimento/infrastrutture-ricerca-e-laboratori-associati
FEM2-Ambiente S.r.l.	Spin-off company of the University of Milano-Bicocca. It is a biotech company with a multidisciplinary team expert in agri-food and environmental biotechnologies. It offers research and development services to companies within the field of cosmetics, veterinary and pharma Contacts: Massimo Labra - massimo.labra@unimib.it Web site: https://www.fem2ambiente.com/en/eng/
Galateabiotech®	Start-up active in the field of industrial biotechnology and green chemistry Contacts: Paola Branduardi - paola.branduardi@unimib.it Web site: https://web.galateabiotech.com/?lang=en
Laboratories of Excellence	Advanced instrumentation for the study of multicellular systems, bioanalytics and molecular recognition Contacts: Francesca Granucci - francesca.granucci@unimib.it Web site: https://www.btbs.unimib.it/it/dipartimento/infrastrutture-ricerca-e-laboratori-associati
Inter-Department facilities for microscopy	Advanced instrumentation for electron and confocal microscopy Contacts: Francesca Granucci - francesca.granucci@unimib.it Web site: https://piattaformadimicroscopia.unimib.it/
Inter-Department facilities for mass spectrometry	Advanced instrumentation for mass spectrometry Contacts: Francesca Granucci - francesca.granucci@unimib.it Web site: https://www.btbs.unimib.it/en/services-companies/research-activity-commissioned/interdepartmental-platform-mass-spectrometry-0

COLLABORATIONS WITH COMPANIES

- Albini Group
- BiCT S.r.l.
Indena S.p.A.
- Pirelli S.p.A.
- Radici S.p.A.
- Sipcam Oxon S.p.A.

MORE INFO

Industrial PhD Programme

- PhD Executive
- Apprenticeship in higher education
- Funding a scholarship



GENERAL INFORMATION

University of Milano – Bicocca

Department of Materials Science

Via Roberto Cozzi 55 - 20125 Milano (MI)

sito web: <http://www.mater.unimib.it/en>

CONTACTS

Prof.ssa Anna VEDDA

+39 0264485162

DETAILED INFORMATION

Staff: 20 Full Professors

20 Associate Professors

28 Researchers

2 Technologists

11 Structured Technicians

Registered students: 952 (Academic year 2022/2023)

Post Lauream Training: 63 enrolled in doctoral programs in Materials Science and Nanotechnology

20 Research fellows

9 fellows

Patents: 71 10 active and available patent families and 61 unavailable or discontinued patent families

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Small molecules

Electron-poor heterocyclic compounds for optoelectronic applications (e.g. n-type semiconductors, electroluminescent compounds) and water splitting



Antonio Papagni (+39 0264485324)
antonio.papagni@unimib.it

Multifunctional nanomaterials

Optical spectroscopy of semiconductors



Emiliano Bonera (+39 0264485033)
emiliano.bonera@unimib.it

Sustainable materials

Characterization of materials between nano and micro scales: accessibility of hierarchical porous systems, description of polymeric networks also for the optimization of production processes, support for the development of materials from agricultural waste



Michele Mauri (+39 0264485043)
michele.mauri@unimib.it

Functional materials

Oxides, nanostructures and glass-based materials for optics and optoelectronics and photocatalysis



Roberto Lorenzi (+39 0264485221)
roberto.lorenzi@unimib.it

Sustainable electronics

Organic synthesis in water of active materials for optoelectronic devices (e.g. organic solar cells and electrochromic devices for smart windows)



Luca Beverina (+39 0264485229)
luca.beverina@unimib.it

Recycling

Recycling of waste lithium ion batteries



Chiara Ferrara
chiara.ferrara@unimib.it

Carbon capture	Inorganic materials for photovoltaic applications and CO ₂ capture (MIB-SOLAR Solar Energy Research Centre)	    	Maurizio Acciarri (+39 0264485136) <i>maurizio.acciarri@unimib.it</i>
Photocatalysis	Kesterite nanoparticles as photocatalysts for the degradation of water micropollutants	    	Giorgio Tseberlidis (+39 0264485114) <i>giorgio.tseberlidis@unimib.it</i>
Functional materials	SEFI Lab. Hydrophobic materials for anti-icing applications and selective oil absorption. Polysaccharide-based materials and coatings (cellulose and chitosan) for engineering applications and medical devices. 3D printing via DLP (digital light processing) through photopolymerization of pure resins, as well as ceramic and metallic suspensions	    	Carlo Antonini (+39 0264485188) <i>carlo.antonini@unimib.it</i>
Energy	Synthesis and characterization of anionic and proton-conducting polymeric membranes for fuel cells and electrolyzers. Assembly of MEA. Synthesis and characterization of solid and semisolid electrolytes for lithium and post-lithium batteries. Development of processes for the recycling-reuse of lithium batteries	    	Piercarlo Mustarelli (+39 0264485176) <i>piercarlo.mustarelli@unimib.it</i>
Energy	Electrochemical Energy Storage group. Preparation, characterization and functional characterization of materials for rechargeable batteries, capacitors and supercapacitors. Development, characterization and prototyping of electrochromic devices	    	Riccardo Ruffo (+39 0264485153) <i>riccardo.ruffo@unimib.it</i>
Multifunctional nanomaterials	NanoMat@Lab: Chemistry of inorganic and hybrid materials. The mission of NanoMat@Lab is the synthesis of innovative inorganic and hybrid nanomaterials looking at the economic, environmental sustainability and at the replacement of critical and toxic materials	    	Roberto Scotti (+39 0264485133) <i>roberto.scotti@unimib.it</i>
Energy efficiency	Inorganic materials for thermoelectrics	    	Dario Narducci (+39 0264485137) <i>dario.narducci@unimib.it</i>
Functional materials	Fabrication and study of semiconductor quantum nanostructures (EpiLab)	    	Stefano Sanguinetti (+39 0264485156) <i>stefano.sanguinetti@unimib.it</i>
Photocatalysis	Production of sustainable fuels (hydrogen, methanol, methane) and chemical intermediates by reduction of CO ₂ and water and nitrogen fixation to green ammonia, via sunlight (artificial photosynthesis) (Solar Energy Research Center MIB-SOLAR)	    	Alessandro Abboto (+39 0264485227) <i>alessandro.abboto@unimib.it</i>
Functional materials	Porous Materials: design, synthesis, structural characterization and switchable molecular dynamics for hydrogen and methane storage and purification as well as CO ₂ capture	    	Angiolina Comotti (+39 0264485140) <i>angiolina.comotti@unimib.it</i>
Catalysis	Theory of oxide surfaces, interfaces, and supported clusters	    	Gianfranco Pacchioni (+39 0264485219) <i>gianfranco.pacchioni@unimib.it</i>
Polymers	Synthesis and characterization of novel polymeric nanostructures (POSYLIFE)	    	Roberto Simonutti (+39 0264485132) <i>roberto.simonutti@unimib.it</i>
Sustainable materials	Low cost chemical deposition processes of inorganic thin films of kesterites and perovskites for photovoltaic applications	    	Simona Binetti (+39 0264485177) <i>simona.binetti@unimib.it</i>

Functional materials	Advanced spectroscopy of functional nanomaterials	     	Francesco Meinardi (+39 02644885181) <i>francesco.meinardi@unimib.it</i>
Nanotechnologies	Electronic structure calculations and molecular dynamics simulations of bidimensional materials (graphene, transition metal chalcogenides, and hexagonal boron nitride) and nanoparticles (oxide semiconductors) for fuel cells, water splitting, photocatalysis, photoelectrochemistry, and nanomedicine	     	Cristiana Di Valentin (+39 0264485235) <i>cristiana.divalentin@unimib.it</i>
Electrocatalysts	Electrocatalysis and Bioelectrocatalysis LAB (EBLAB). Synthesis and characterization of Platinum Group Metal-free (PGM-free) electrocatalysts for hydrogen production and conversion, CO ₂ ER and N ₂ RR. Bioelectrochemical systems for wastewater treatment and hydrogen production	     	Carlo Santoro <i>carlo.santoro@unimib.it</i>

OTHER R&D ORGANIZATIONS

MIB-SOLAR Solar Energy Research Centre	MIB-SOLAR is a research centre to promote and encourage study and research of new materials and devices related to solar energy in its various forms: photovoltaic processes; photocatalytic effects of different processes Contacts: Simona Binetti (+39 0264485177) - simona.binetti@unimib.it Web site: https://mibsolar.unimib.it/en/
CORIMAV - Consortium for research on materials	CORIMAV is a consortium funded between the University of Milano – Bicocca and Pirelli Company for research on advanced materials. CORIMAV aim is the development of innovative technologies in the field of materials for tyre applications, on the basis of the scientific and technologic know-how of the University and Pirelli Company. CORIMAV funds three scholarships per year for the industrial curriculum of the doctorate in Materials Science and Nanotechnologies Contacts: Barbara Di Credico, Supervisor of research activity and PhD students (+39 0264485189) - barbara.dicredico@unimib.it Web site: https://www.mater.unimib.it/en/research/research-and-enterprise/consortia/corimav
L-NESS - Inter-University Center for Nanometric Epitaxial Structures on Silicon and Spintronics	The Laboratory for Epitaxial Nanostructures on Silicon and Spintronics (L-NESS) is an Inter-University research center of the University of Milano – Bicocca and the Politecnico di Milano University aimed at the development and study of devices realized by the integration of semiconductors of the IV-IV and III-V groups for microelectronic, optoelectronic, quantum photonics and energy applications Contacts: Stefano Sanguinetti (+39 0264485156) - stefano.sanguinetti@unimib.it Web site: http://lness.como.polimi.it/index.php
Interdepartmental Spectroscopy Network	The Interdepartmental Spectroscopy Network brings together numerous researchers and a wide range of instruments from three different departments in the Science Area (Materials Science, Environmental and Earth Sciences and Biotechnology and Biosciences). The Interdepartmental Spectroscopy Network manages all the equipment available to both internal and external users in a coordinated manner. The skills developed over the years enable measurements on any type of material (powders, solids, liquids, biological materials, etc.) even under controlled conditions of temperature and atmosphere, and the design of new experimental procedures for in situ and in operando characterisations. Contacts: Adele Sassella (+39 0264485160) - adele.sassella@unimib.it Web site: https://www.mater.unimib.it/it/ricerca/research-facilities/laboratori-ricerca/laboratori-interdipartimentali/rete-interdipartimentale-spettroscopia

COLLABORATIONS WITH COMPANIES

- Baker Hughes
- Bugnion S.p.A.
- Chimar S.r.l.
- CRPI S.r.l.
- ENI S.p.A.
- Fluorsid S.p.A.
- GemaTEG Italia S.r.l.
- Intercos S.p.A.
- ISC S.r.l.
- MEMC Electronic Materials S.p.A.
- Midac S.p.A.
- Pirelli S.p.A.
- Solvay Group
- Volta Structural Energy S.r.l.
- X-Nano S.r.l.

PUBBLICAZIONI

- List of publications (journal articles)
- Research Highlights

MORE INFO

- Enterprise services (servizi-imprese.mater@unimib.it, <https://www.mater.unimib.it/it/servizi-imprese/prestazioni-conto-terzi>): comprehensive service for the investigation of materials and materials-related problems
- Research Area of the University of Milano-Bicocca : how to collaborate with the university through funding and partnerships and tax benefits
- The Ph.D. in Materials Science and Nanotechnology offers, in addition to ministerial positions, numerous research grants funded by companies on joint Department/company projects having materials as their theme ([for more information](#)) su progetti congiunti Dipartimento/azienda aventi come argomento i materiali. Director: Prof. Francesco Montalenti (francesco.montalenti@unimib.it)



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA



Department of Chemical and Geological Sciences

GENERAL INFORMATION

Università degli Studi di Modena e Reggio Emilia
Department of Chemical and Geological Sciences
Via Campi 103 – 41125 Modena (MO)
sito web: <http://www.dscg.unimore.it>

CONTACTS

Prof. Gianantonio BATTISTUZZI
+39 0592058518

Luca Rigamonti (+39 0592058646) - luca.rigamonti@unimore.it

DETAILED INFORMATION

Staff: 8 Full Professors
34 Associate Professors
17 Researchers
9 Structured Technicians
5 Administrative Technicians
5 General Services

Registered students: 763 (Academic year 2022/2023)

Post Lauream Training: 42 enrolled in doctoral programs in Models and Methods for Materials and Environmental Sciences (M3ES)

9 Research fellows

2 fellows

Patents: 4

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Metal - biocatalysis

Enhancement of fish wastes by means of metal-enzymes with oxidizing properties



Gianantonio Battistuzzi (+39 0592058639)
gianantonio.battistuzzi@unimore.it

Food

Traceability, authenticity and quality of food products and processes



Andrea Marchetti (+39 0592058637)
andrea.marchetti@unimore.it

Fluorescence

Photodegradation of environmental pollutants; optical properties of luminescent materials



Monica Caselli (+39 0592058643)
monica.caselli@unimore.it

Sensors

Electrochemical sensing for the analysis of food and environmental matrices



Laura Pigani (+39 0592058638)
laura.pigani@unimore.it

Quality

Analytical strategies for food quality and environmental monitoring in a context of sustainability and circular economy



Caterina Durante (+39 0592058635)
caterina.durante@unimore.it

Polymers

Synthesis of polymers for industrial applications with new sustainable methodologies for health and environment



Francesca Parenti (+39 0592058632)
francesca.parenti@unimore.it

Hydrogen	Innovative catalysts for the production of hydrogen from water electrolysis	     	Francesco Tassinari (+39 0592058465) <i>francesco.tassinari@unimore.it</i>
Chemimetry	Development of Chemometrics methods and Quality by Design approaches for optimization of formulation and industrial process aiming at their eco sustainability	     	Marina Cocchi (+39 0592058554) <i>marina.cocchi@unimore.it</i>
NMR	NMR characterization of complex organic mixtures of industrial or natural origin	     	Adele Mucci (+39 0592058636) <i>adele.mucci@unimore.it</i>
Environment	Targeted and un-targeted analytical methods for environmental monitoring of emerging contaminants and molecules of ecotoxicological concern	     	Guido Perra (+39 0592058491) <i>guido.perra@unimore.it</i>
Sustainability	Characterization and use of raw and secondary materials for industrial applications (ceramics, cements, etc.)	     	Gigliola Lusvardi (+39 0592058549) <i>gigliola.lusvardi@unimore.it</i>
Fertilisers	Reduction of the use of "critical" raw materials and water in the production process of fertilizers	     	Gianluca Malavasi (+39 0592058552) <i>gianluca.malavasi@unimore.it</i>
Green chemistry	Development of environmentally friendly chemical processes through the replacement of REACH-prohibited dangerous reagents	     	Fabrizio Roncaglia (+39 0592058648) <i>fabrizio.roncaglia@unimore.it</i>
Sustainability	Innovative processes and products to increase sustainability in the construction sector	     	Lorenzo Tassi (+39 0592058556) <i>lorenzo.tassi@unimore.it</i>
In silico	Multiscale computational modeling of materials for energy applications	     	Alfonso Pedone (+39 0592058553) <i>alfonso.pedone@unimore.it</i>

COLLABORATIONS WITH COMPANIES

- Acetificio Carandini Emilio S.p.A
- Athena S.p.A.
- Barilla G. e R. F.lli S.p.A.
- Carlo Riccò e F.lli, S.p.A.
- LB Officine Meccaniche S.p.A.
- Litokol S.p.A.
- Tellure Rota S.p.A.
- Tetra Pak Italiana S.p.A.
- Versalis S.p.A.
- Vinicola San Nazaro S.r.l.

PUBBLICAZIONI

- Niccolò Braidì, Francesca Parenti, Giulia Scurani, Francesco Tassinari, Mirko Buffagni, Luisa Bonifaci, Gianfranco Cavalca, Nicolò Pettenuzzo and Franco Ghelfi, **"Influences of nitrogen base excess on ARGET ATRP of styrene with ascorbic acid acetone and traces of oxygen and water"**, Polym. Chem., 2023, 14, 1567-1576, DOI: 10.1039/D2PY01373H
- Veronica D'Eusano, Lucia Bertacchini, Andrea Marchetti, Mattia Mariani, Sandro Pastorelli, Michele Silvestri, Lorenzo Tassi, **"Rosaceae nut-shells as sustainable aggregate for potential use in non-structural lightweight concrete"**, Waste 2023, 1(2), 549-568, DOI: 10.3390/waste1020033
- Veronica D'Eusano; Biagio Anderlini; Andrea Marchetti; Sandro Pastorelli; Fabrizio Roncaglia; Alberto Ughetti, **"Exploring the potential of peach (Prunus Persica L.) nut-shells as a sustainable alternative to traditional aggregates in lightweight concrete"**, Multidiscip. J. Eng. Sci., 2023, (2), 22-39, DOI: 10.5281/zenodo.8117772
- Federica Lodesani, Maria Cristina Menziani, Shingo Urata, Alfonso Pedone, **"Biasing crystallization in fused silica: An assessment of optimal metadynamics parameters"**, J.Chem. Phys., 2022, 156(19), 194501, DOI: 10.1063/5.0089183
- Federica Lodesani, Maria Cristina Menziani, Shingo Urata, Alfonso Pedone, **"Evidence of Multiple Crystallization Pathways in Lithium Disilicate: A Metadynamics Investigation"**, J. Phys. Chem. Lett., 2023, 14(6), 1411–1417, DOI: 10.1021/acs.jpclett.2c03563
- Daniele Tanzilli, Alessandro D'Alessandro, Samuele Tamelli, Caterina Durante, Marina Cocchi, Lorenzo Strani, **"A Feasibility Study towards the On-Line Quality Assessment of Pesto Sauce Production by NIR and Chemometrics"**, Foods, 2023, 12, 1679, DOI: 10.3390/foods12081679
- Lorenzo Strani, Raffaele Vitale, Daniele Tanzilli, Francesco Bonacini, Andrea Perolo, Erik Mantovani, Angelo Ferrando, Marina Cocchi, **"A multiblock approach to fuse process and near-infrared sensors for on-line prediction of polymer properties"**, Sensors, 2022, 22(4), 1436, DOI: 10.3390/s22041436

MORE INFO

Looking for companies for joint doctorates

GENERAL INFORMATION

Università degli Studi di Napoli Federico II
Department of Pharmacy

Via Domenico Montesano 49 - 80131 Napoli (NA)

sito web: <http://www.farmacia.unina.it>

CONTACTS

Prof. Angela ZAMPELLA

+39 081679934

DETAILED INFORMATION

Staff: 35 Full Professors

61 Associate Professors

44 Researchers

16 Structured Technicians

13 Administrative Technicians

5 General Services

Registered students: 580 (Academic year 2021/2022)

Post Lauream Training: 39 enrolled in Doctorates in Pharmaceutical Sciences and Nutraceuticals, functional foods and human health

14 Research fellows

17 fellows

Patents: -

OTHER R&D ORGANIZATIONS

CIRFF

Drug-utilization studies with special reference to the study of determinants of drug consumption, adherence and persistence in therapy, and the development of new indicators for assessing the quality of prescribing. Evaluation of the cost-effectiveness of drug therapies by determining cost-effectiveness, cost-utility, and cost-benefits ratio

Contacts: Enrica Menditto (+39 081678669) - cirfefu@unina.it

Web site: <https://www.cirff.it>



suschem^{IT}



GENERAL INFORMATION

Università degli Studi di Napoli Federico II

Department of Chemical Sciences

Via Cintia 4 - 80126 Napoli (NA)

sito web: <http://www.scienzachimiche.unina.it>

CONTACTS

Prof. Luigi PADUANO

+39 081674191

DETAILED INFORMATION

Staff: 23 Full Professors

48 Associate Professors

29 Researchers

18 Structured Technicians and Administratives

Registered students: 1,200 (Academic year 2021/2022)

Post Lauream Training: 60 enrolled in doctoral programs in Chemical Sciences

17 Research fellows

Patents: 14 Phone: +39 081674392 (Secretary of Director)

Website: <http://www.trasferimentotecnologico.unina.it>



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Dipartimento
di Ingegneria Chimica,
dei Materiali e della
Produzione Industriale
Università degli Studi
di Napoli Federico II

SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi di Napoli Federico II

Department of Chemical and Materials Engineering and Industrial Production

Piazzale Tecchio 80 - 80125 Napoli (NA)

sito web: <http://www.dicmapi.unina.it>

CONTACTS

Prof. Giuseppe MENSITIERI

+39 0817682512

DETAILED INFORMATION

Staff: 31 Full Professors

37 Associate Professors

27 Researchers

9 Structured Technicians

17 Administrative Technicians

Registered students: About 1,500 (Academic year 2021/2022)

Post Lauream Training: about 100 enrolled in doctoral programs in Industrial Product and Process Engineering

30 Research fellows

20 fellows

Patents: 1 Concerning Sustainable Chemistry

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Hydrogen

CYAN H2 production and CO2 valorization: novel process development



Almerinda Di Benedetto (+39 0817682265)

almerinda.dibenedetto@unina.it

Renewable materials

Processing and thermo-mechanical characterization of biopolymers and plastics at low environmental impact



Giovanni Filippone (+39 0817682104)

gfilippo@unina.it

SSbD

Response to fire of natural and synthetic polymers and composites - Laboratory-scale experimentation and advanced mathematical modelling



Antonio Galgano (+39 0817682232)

agalgano@unina.it

Circular economy

Pyrolysis and/or gasification of biomass and solid wastes for the production of biofuels and chemicals



Fabrizio Scala (+39 0817682239)

fabrizio.scala@unina.it

Renewable materials

Characterization of the exchange and surface properties of natural and synthetic microporous materials and their applications in the environmental field



Bruno de Gennaro (+39 0817682551)

bruno.degennaro@unina.it

Formulations

Rheological and chemical/physical study of solutions based on cellulose derivatives and/or biocompatible polymers



Rosanna Pasquino (+39 0817682288)

r.pasquino@unina.it

SSbD	Risk analysis and safety of H2 based technology systems	    	Almerinda Di Benedetto (+39 0817682265) <i>almerinda.dibenedetto@unina.it</i>
Formulations	Development of functional foods by fermentation processes and antimicrobial peptides for bio-functionalization of nanoparticles and packaging materials	    	Roberto Nigro (+39 0817682249) <i>rnigro@unina.it</i>
Hydrogen	Synthesis and characterization of micro and meso-porous adsorbent materials for CO2 capture, biogas purification and hydrogen storage	    	Domenico Caputo (+39 0817682396) <i>domenico.caputo@unina.it</i>
Renewable materials	Enzymatic catalysts, anaerobic digestion, chemical and energetic recovery of agro-forestry wastes	    	Domenico Pirozzi (+39 0817682274) <i>dpirozzi@unina.it</i>
LCA	Sostenibility assessment of processes and products: Life Cycle Assessment, Life Cycle Cost Assessment, Social-Life cycle assessment, Tecno-Economic assessment. Eco-design and circularity assessment	    	Roberto Chirone (+39 0817682248) <i>roberto.chirone@unina.it</i>
Ecodesign	Synthesis and chemical-physical characterization of thermosets from biological sources and agri-food waste	    	Veronica Ambrogio (+39 0817682410) <i>ambrogio@unina.it</i>
Sustainable bioprocesses	Sustainable development (design and optimization) of processes for the exploitation of intensive cultures of autotrophic micro-organisms (e.g. microalgae) and lignocellulosic biomass for the production of energy vectors, chemicals, nutraceuticals, antioxidants, antiinflammatories	    	Antonio Marzocchella (+39 0817682541) <i>antonio.marzocchella@unina.it</i>
Ecodesign	Immobilization of enzymes in mesostructured materials for biomass conversion into biofuels	    	Aniello Costantini (+39 0817682596) <i>anicosta@unina.it</i>
Sustainable bioprocesses	Thermo-plasticization and skimming processes of polymers of natural origin	    	Ernesto Di Maio (+39 0817682511) <i>edimaio@unina.it</i>
Sustainable bioprocesses	Development of photocatalytic processes for the production of hydrogen and high value added chemical intermediates using solar energy	    	Raffaele Marotta (+39 0817682968) <i>raffaele.marotta@unina.it</i>
Nanotechnologies	Design and development of eco/bio-inspired nanostructured materials for chemo-bio-sensing and treatment of pathogens and contaminants	    	Giuseppe Vitiello (+39 0817685975) <i>giuseppe.vitiello@unina.it</i>
Ecodesign	Study and characterization of sustainable building materials	    	Barbara Liguori (+39 0817682395) <i>barbara.liguori@unina.it</i>
Sustainable bioprocesses	Microfluidic technologies for sustainability. Applications in biomedical and industry	    	Giovanna Tomaiuolo (+39 0817682261) <i>giovanna.tomaiuolo@unina.it</i>
Ecodesign	Eco/bio-compatible probes design for multimodal imaging and green synthesis of systems for water remediation	    	Brigida Silvestri (+39 0817682413) <i>brigida.silvestri@unina.it</i>

Sustainable bioprocesses	Production biofuel/chemicals by biotechnological conversion of renewable resources - lignocellulosic biomass, C1 gas streams (syngas, CO, CH ₄) - design of biorefinery processes and bioreactors	  	Francesca Raganati (+39 0817682218) <i>francesca.raganati@unina.it</i>
Renewable materials	Thermal and oxidative pyrolysis of biomass variously catalysed for the production of bio-oil and chemicals, including conversion energetics	  	Colomba Di Blasi (+39 0817682232) <i>diblas@unina.it</i>
Hydrogen	Hydrogen and biogas production. Treatments of gaseous streams for fuel cells. Innovative materials for fuel cells	  	Maria Turco (+39 0817682259) <i>turco@unina.it</i>
Sustainable bioprocesses	Biomass value-added processes for the production of environmentally friendly materials for RAEE and micropollutants remediation	  	Giuseppina Luciani (+39 081762433) <i>luciani@unina.it</i>
Sustainable bioprocesses	Emulsification processes with reduced environmental footprint	  	Stefano Guido (+39 3395244623) <i>steguido@unina.it</i>
Ecodesign	Design and synthesis of catalysts for oxidative processes and decontamination from organic pollutants	  	Claudio Imparato (+39 0817682415) <i>claudio.imparato@unina.it</i>
Sustainable bioprocesses	Sustainable development of processes to exploit C-based feedstocks. Production of biofuels and chemicals via thermochemical/biotechnological combined route	  	Maurizio Troiano (+39 0817682258) <i>maurizio.troiano@unina.it</i>
Hydrogen	H ₂ storage in formates solutions	  	Danilo Russo <i>danilo.russo3@unina.it</i>
Sustainable bioprocesses	Role of environmental conditions on bacterial motility and biofilm morphology	  	Sergio Caserta (+39 3289721146) <i>sergio.caserta@unina.it</i>
Ecodesign	Functionalization of polymer composites with sustainable and/or bio-based fillers	  	Aurelio Bifulco <i>aurelio.bifulco@unina.it</i>
Renewable materials	Thermo-rheological study of biodegradable and/or renewable polymers for biomedical applications and in the food industry	  	Nino Grizzuti (+39 0817682285) <i>grizzuti@unina.it</i>
SSbD	Development of enzymatic processes for biorefinery of lignocellulosic biomass and valorization of CO ₂ (CCU contest). Kinetic characterization. Bioconversion unit development. Simulation	  	Piero Salatino (+39 0817682258) <i>salatino@unina.it</i>
Sustainable bioprocesses	Design and synthesis of catalysts for non-edible biomass valorisation	  	Antonio Aronne (+39 0817682556) <i>anaronne@unina.it</i>
Resource efficiency	Environmental free surface treatments using Deep Eutectic Solvents	  	Tullio Monetta (+39 0817682403) <i>monetta@unina.it</i>
Energy efficiency	Thermo-kinetic characterization of chemical systems of industrial interest	  	Roberto Andreozzi (+39 0817682251) <i>roberto.andreozzi@unina.it</i>

OTHER R&D ORGANIZATIONS

ACLabs - Applied Chemistry Laboratory	Laboratory specialized in the characterization of nanoporous materials, building materials and ceramic materials of technological interest Contacts: Domenico Caputo (+39 0817682396) - domenico.caputo@unina.it
BPL - Bioprocess Engineering Laboratory	Laboratory specialized in the design, management and optimization of bioreactors and industrial biotechnological processes Contacts: Antonio Marzocchella (+39 0817682541) - antonio.marzocchella@unina.it Web site: http://wpage.unina.it/biop.eng.lab/home.htm
Thermo-kinetic characterization of chemical systems of industrial interest	Laboratory devoted to the study the behaviour of chemical system that may be interested by thermal explosion, using appropriate calorimetric techniques Contacts: Roberto Andreozzi (+39 0817682251)
Materials Chemistry Laboratories	Laboratories specialized in the synthesis and characterization of hybrid and nanostructured materials through bio-inspired and eco-sustainable strategies Contacts: Antonio Aronne (+39 0817682556) - anaronne@unina.it
Food Engineering Lab	Lab specialized in development of products and processes for consumer goods Contacts: Roberto Nigro (+39 0817682249) - rnigro@unina.it
Biochemical Engineering Laboratory	Laboratory specialized in fermentation and enzyme catalysis Contacts: Domenico Pirozzi (+39 0817682274) - dpirozzi@unina.it
Mass Transport Lab	Laboratory aimed at the measurement of diffusion, permeation and sorption of gases and vapors in polymers and at the characterization of thermodynamic properties of polymers Contacts: Giuseppe Mensitieri (+390817682512) - mensitie@unina.it Web site: https://www.dicmapi.unina.it/research/gruppi-di-ricerca/scienza-e-ingegneria-di-materiali-e-superfici-sems/
SaRAH Lab	Safety, Risk Analysis and Hydrogen Contacts: Almerinda Di Benedetto (+39 0817682265) - almerinda.dibenedetto@unina.it Web site: https://www.dicmapi.unina.it/research/gruppi-di-ricerca/sarah-safety-risk-analysis-hydrogen/



**DIPARTIMENTO
DI INGEGNERIA
INDUSTRIALE**



GENERAL INFORMATION

Università degli Studi di Padova
Department of Industrial Engineering (DII)
Via Gradenigo 6/a - 35131 Padova (PD)
sito web: <http://www.dii.unipd.it>

CONTACTS

Prof.ssa Stefania BRUSCHI
+39 0498277500

DETAILED INFORMATION

Staff: 42 Full Professors

49 Associate Professors

47 Researchers

44 Structured Technicians

27 Administrative Technicians

6 General Services

Registered students: 5,486 (Academic year 2019/2020)

Post Lauream Training: 91 enrolled in doctoral programs

68 Research fellows

Patents: 52



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



GENERAL INFORMATION

Università degli Studi di Padova
Department of Chemical Sciences

Via F. Marzolo 1 - 35131 Padova (PD)

sito web: <http://www.chimica.unipd.it>

CONTACTS

Prof. Michele MAGGINI

<https://www.chimica.unipd.it/ricerca/gruppi-di-ricerca>

DETAILED INFORMATION

Staff: 27 Full Professors

50 Associate Professors

30 Researchers

34 Structured Technicians

18 Administrative Technicians

2 General Services

Registered students: 1,223 (Academic year 2021/2022)

Post Lauream Training: 96 enrolled in doctoral programs in Molecular Sciences and Materials Science and Engineering

47 Research fellows

Patents: 11 (2016-2020)

Trademark: 2

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Optical sensors

Optical sensors and laser synthesis of multifunctional nanoparticles



Vincenzo Amendola (+39 0498275673)
vincenzo.amendola@unipd.it

Sintesi organica-inorganica

Synthesis of organic-inorganic hybrids (for catalysis, energy conversion, nanomedicine) and of enzymes and synthetic functional membranes



Marcella Bonchio (+39 0498275670)
marcella.bonchio@unipd.it

Carbon nanostructures

Organic functionalization of carbon nanostructures for the conversion of solar energy. Functional supramolecular gels; API synthesis in continuous flow



Michele Maggini (+39 0498275662)
michele.maggini@unipd.it

Polymers

Study and characterization of polymeric materials and composite systems for manufactures, fibers and coatings



Carla Marega (+39 0498275233)
carla.marega@unipd.it

Electrochemistry

Study of electron transfer in multi-metal complexes, electrochemical sensors for metal ions



Saverio Santi (+39 0498275119)
saverio.santi@unipd.it

Electrochemistry

Electron transfer through molecular bridges and interfaces; dissociative electron transfer; properties and applications of metal nanoclusters; electrochemical sensors



Flavio Maran (+39 0498275147)
flavio.maran@unipd.it

Modelisation	Multiscale modeling of complex systems of biological (biomembranes, and proteins) and technological interest (polymers, liquid crystals, colloids)	  	Alberta Ferrarini (+39 0498275682) <i>alberta.ferrarini@unipd.it</i>
Peptides	Synthesis of peptide structures for medicinal chemistry applications and materials science	  	Fernando Formaggio (+39 0498275277) <i>fernando.formaggio@unipd.it</i>
Pollutants abatement	Development of Critical Raw Materials-free heterogeneous catalysts for Abatement of Gas Phase Pollutants emitted by veicles and stable plants	  	Antonella Glisenti (+39 0498275176) <i>antonella.glisenti@unipd.it</i>
Functional materials	Design, synthesis and characterization of supramolecular structures, thin films, and inorganic colloids for applications in energy, sensors and nanomedicine	  	Lidia Armelao (+39 0498275236) <i>lidia.armelao@unipd.it</i>
Green chemistry	Wet-chemistry synthesis and characterisation of inorganic nanostructures, by sustainable approaches (colloidal, hydrothermal, microfluidic, synbtehis)	  	Silvia Gross (+39 0498275736) <i>silvia.gross@unipd.it</i>
Functional polymers	Synthesis of functional polymers for lubricating and biocompatible coatings, study of the interaction between polymeric interfaces and biological/physiological environments	  	Edmondo Maria Benetti (+39 0498275232) <i>edmondo.benetti@unipd.it</i>
Catalysis	Synthesis of asymmetric ligands for catalysis, metal-enzymes (haloperoxidase, lignin-peroxidase). Hybrid receptors for anions; self-assembled molecular cages	  	Giulia Licini (+39 0498275147) <i>giulia.licini@unipd.it</i>
Catalytic processes	Development of catalytic processes for use in biorefineries, direct synthesis of hydrogen peroxide and oxidation of alcohols	  	Marco Zecca (+39 0498275737) <i>marco.zecca@unipd.it</i>
Surface chemistry	Surface chemistry. On-surface synthesis on nanosystems of interest for molecular electronics, catalysis and sensing	  	Mauro Sambi (+39 0498275189) <i>mauro.sambi@unipd.it</i>
NMR	Protein production and purification. Structure and interactions of proteins using NMR and Crystallography. Metabolomic analysis of food extracts and biological fluids	  	Stefano Mammi (+39 0498275293) <i>stefano.mammi@unipd.it</i>
Fuel cells	Innovative Materials/Processes for Advanced Environmental Clean Technologies IMPACT: Solid Oxide Fuel Cells/Electrolysers noble metals free	  	Antonella Glisenti (+39 0498275176) <i>antonella.glisenti@unipd.it</i>
Modelisation	Modeling of nanostructures and their interaction with biomolecules for nanobiotechnological applications	  	Stefano Corni (+39 0498275295) <i>stefano.corni@unipd.it</i>
Environmental pollution	Non-thermal plasma for the remediation of air and water and the production of synthesis gas by methane reforming	  	Ester Marotta (+39 0498271608) <i>ester.marotta@unipd.it</i>
Catalysis	Synthesis & characterization of functional nanosystems (nanoparticles composites 2D materials) for energy and catalysis	  	Stefano Agnoli (+39 0498275167) <i>stefano.agnoli@unipd.it</i>

Sensors	Study of energy transfer processes in complex systems and in photonics materials and analytical and bioanalytical sensors	  	Camilla Ferrante (+39 04982756148) <i>camilla.ferrante@unipd.it</i>
Modelisation	Theoretical and computational chemistry; development of methods for the modeling of microfluidic systems, electronic transfers, organic-inorganic hybrid systems	  	Antonino Polimeno (+39 0498275146) <i>antonino.polimeno@unipd.it</i>
Steam phase	Design and synthesis of nanostructured inorganic systems through vapor phase deposition techniques	  	Chiara Maccato (+39 0498275234) <i>chiara.maccato@unipd.it</i>
Organometallic compounds	Organometallic compounds as catalysts, bioactive compounds and advanced materials for devices. Microgel chemistry	  	Andrea Biffis (+39 0498275216) <i>andrea.biffis@unipd.it</i>
Physical-organic chemistry	Complex systems for molecular recognition and catalysis. Physical-organic chemistry. Kinetic models	  	Leonard Prins (+39 0498275251) <i>leonard.prins@unipd.it</i>
Contaminant analysis	Analysis of water, environmental and food contaminants, atmospheric chemistry, optical sensors	  	Paolo Pastore (+39 0498275182) <i>paolo.pastore@unipd.it</i>
Materials	Characterization of molecular materials with physical-chemical experimental techniques	  	Fosca Conti (+39 0498275229) <i>fosca.conti@unipd.it</i>
EPR	Electronic Paramagnetic Resonance (EPR) to study materials and biological systems	  	Donatella Carbonera (+39 0498275144) <i>donatella.carbonera@unipd.it</i>

OTHER R&D ORGANIZATIONS

Centro di Ateneo Analisi e Servizi Per la Certificazione	Analysis in the field of asbestos fibres and certifications Web site: http://ceasc.unipd.it
Centro interdipartimentale di ricerca "Centro studi di economia e tecnica dell'energia Giorgio Levi Cases"	Scientific and technological research about energy sources and their transformation, energy distribution and its final use Web site: http://www.levicases.unipd.it
Centro interdipartimentale di ricerca di meccanica dei materiali biologici	Biomedical and material engineering with main regard to biological tissue mechanics and biomaterials Web site: http://www.cmbm.unipd.it
CEWMS - Centro studi sull'economia circolare (Circular Economy of Waste, Materials and Sustainability)	Development of research activities and technical support to research centers or companies operating in the field of Circular Economy and environmental sustainability Web site: https://www.dicea.unipd.it/cewms
CIBA - Centro interdipartimentale di ricerca studio e conservazione dei beni archeologici, architettonici e storico-artistici	Study and monitoring of cultural heritage, design and enhancement of conservation system of historical artefacts
PCNM (Padua Center for Network Medicine)	Interdisciplinary center for preclinical and clinical biomedical research Contacts: Web site: https://pcnm.unipd.it/index.php
Spinoff "Pan / De Rebus Plantarum"	Plant health solutions using environmentally sensitive products and methods Contacts: Paolo Pastore (+39 0498275182) - paolo.pastore@unipd.it Web site: http://drp.bio/it

COLLABORATIONS WITH COMPANIES

- Acca Industires S.r.l.
- AMCOR FLEXIBLES ITALIA S.r.l.
- Basell Poliolefine Italia S.r.l.
- Berkem S.r.l.
- CHELAB S.r.l.
- dtoLABS S.r.l.
- EcamRicert S.r.l.
- Enphos S.r.l.
- Exclusive Lash Brow S.r.l.s.
- FIAMM Energy Technology S.p.A.
- Hyter S.r.l.
- Sincera Sistemi S.r.l.
- Società Italiana Biotecnologie S.r.l.
- Tin Cast S.r.l.

”

PUBBLICAZIONI

- M. Parnigotto, M. Mazzucato, D. Fabris, L. Dainese, S. Cazzanti, N. Bortolamei, C. Durante, **"Water Loss Predictive Tests in Flooded Lead-Acid Batteries"**, ChemElectroChem, 2022, 9, e2022008
- A. Ahmed, F. Conti, M. Schießl-Widera, M. Goldbrunner, **"CFD-Based Sensitivity-Analysis and Performance Investigation of a Hydronic Road-Heating System"**, Energies 2023, 16(5), 2173
- E. Guazzelli, L. Santarlasci, M. Oliva, C. Pretti, M. Romio, A. Glisenti, E. M. Benetti, E. Martinelli, **"Oligo(2-alkyl-2-oxazoline)-based graft copolymers for marine antifouling coatings"**, European Polymer Journal 190 (2023) 111998
- D. Salvò, D. Mosconi, A. Neyman, M. Bar-Sadan, L. Calvillo, G. Granozzi, M. Cattelan, S. Agnoli, **"Nanoneedles of Mixed Transition Metal Phosphides as Bifunctional Catalysts for Electrocatalytic Water Splitting in Alkaline Media"**, Nanomaterials 2023, 13, 683
- A. Vagias, A. Nelson, P. Wang, J. Reitenbach, C. Geiger, L.P. Kreuzer, T. Saerbeck, R. Cubitt, E.M. Benetti, P. Müller-Buschbaum, **"The Topology of Polymer Brushes Determines Their Nanoscale Hydration"**, Macromol. Rapid Commun. 2023, 44, 230003
- M. Micheletto, E. Gaio, E. Tedesco, G. Di Maira, E. Mantovan, M. Zanella, P. Pastore, M. Roverso, G. Favaro, F. Benetti, **"Intestinal Absorption Study of a Granular Form of Ferric Pyrophosphate"**, Metabolites 2022, 12, 463
- A. Romano, L. Navarini, V. Lonzarich, S. Bogiatti, P. Pastore, L. Cappellin, **"2,4,6-Trichloroanisole Off-Flavor Screening in Green Coffea arabica by a Novel Vocus NO+ CI-MS Method: A Study on Green Coffee from Different Geographical Origins"**, J. Agric. Food Chem. 2022, 70, 11412–11418

MORE INFO

- Doctoral Scholarships in collaboration with companies
- UNIMPRESA to set up projects in collaboration with companies aimed at innovation
- Relations with companies in the Department of Chemical Sciences (analysis, dissemination, meetings with companies)

GENERAL INFORMATION

Università degli Studi di Padova

Department of Pharmaceutical and Pharmacological Sciences

Via F. Marzolo 5 – 35131 Padova (PD)

sito web: <http://www.dsfarm.unipd.it>

CONTACTS

Prof. Stefano MORO

+39 0498275704

Department Secretary

Maria Teresa Giordano (+39 0498275322) - mariateresa.giordano@unipd.it

DETAILED INFORMATION

Staff: 10 Full Professors

28 Associate Professors

19 Researchers

13 Structured Technicians

21 Administrative Technicians

3 General Services

Registered students: 1,564 (Academic year 2022/2023)

Post Lauream Training: 51 enrolled in doctoral programs in Molecular Sciences, Pharmacological Sciences, Biomedicine

9 Research fellows

13 fellows

Patents: 109 <https://www.dsfarm.unipd.it/terza-missione/brevetti>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Regenerative medicine

The research regards tissue engineering to construct biological substitutes for research, diagnostic or regenerative medicine purposes and In vitro models of inflammation



Maria Teresa Conconi (+39 0498275714)
mariateresa.conconi@unipd.it

Oncological pharmacology

Studies on pharmacodynamics and pharmacokinetic aspects of cancer pharmacology, with emphasis on discovering novel molecular targets in cancer cells and in the non-cancerous cells forming the tumor microenvironment



Monica Montopoli (+39 0498275090)
monica.montopoli@unipd.it

Nutraceuticals

The research focuses on: food analysis; metabolomic-based studies for natural bioactive products and nutraceuticals; isolation of bioactive constituents from plants, crop and other agricultural products for nutraceutical development



Stefano Dall'Acqua (+39 0498275344)
stefano.dallacqua@unipd.it

Tossicologia ambientale

Studies on: plant extracts and compounds useful for drug development; multidrug strategy in diseases with multicausal aetiology and complex physiopathology; development of environmentally sustainable pesticides



Girolamo Calò (+39 0498275103)
girolamo.calo@unipd.it

Cosmetic formulation	The research comprises wet granulation and scale up, development of lipid formulations, design and development of oral solid dosage forms, muco-adhesive tablets, technological development of β emitting radiopharmaceutical produced with radioactive ion beams	    	Nicola Realdon (+39 0498275338) <i>nicola.realdon@unipd.it</i>
Neuropharmacology	Molecular/functional studies to evaluate: the role of microglial cells in the development of the neuronal network and the maintenance of cerebral homeostasis; the causes of demyelinating diseases affecting the central nervous system with particular attention to multiple sclerosis	    	Morena Zusso (+39 0498275093) <i>morena.zusso@unipd.it</i>
Cardiovascular pharmacology	Studies on: role of endogenous/exogenous estrogens on the activation of human monocyte-derived macrophages; cell-cell interaction in relation to fibrosis angiogenesis; role of the endothelium and cells of the innate immune system in the inflammatory process; molecular mechanisms regulating cholesterol homeostasis and development of atherosclerotic plaque	    	Chiara Bolego (+39 0498275101) <i>chiara.bolego@unipd.it</i>
Gastrointestinal pharmacology	Studies on mechanisms regulating gastrointestinal function in health and disease conditions, in order to develop new pharmacological treatments and nutritional strategies for disorders of the gut-brain axis, obesity, inflammatory bowel disease and neurodegenerative diseases	    	Maria Cecilia Giron (+39 0498275091) <i>cecilia.giron@unipd.it</i>
Biochemistry	Research concerning protein structure, protein folding and misfolding by using biochemical and biophysical technologies	    	Vincenzo De Filippis (+39 0498275698) <i>vincenzo.defilippis@unipd.it</i>
Sintesi di farmaci	The research focuses on: synthesis and development of bioactive molecules for the treatment of cancer, pain and inflammation, cystic fibrosis, obesity, erectile dysfunction and pulmonary arterial hypertension; development of low weight chemical entities to investigate complex super-molecular arrangements; molecular modeling and drug discovery via computational techniques	    	Stefano Moro (+39 0498275704) <i>stefano.moro@unipd.it</i>
Biopharmaceutics	The research focuses on: proteins modification; lipid and polymeric nanoparticles and polymer bioconjugates production; development of lipid membrane vesicles, liposomes and polymerases as delivery carriers; oncolytic virotherapy for cancer treatment; development of polysaccharides for immune system modulation; development of nano-nucleic acid for nanomedicine; development of gold nanoparticles as diagnostic/therapeutic agents	    	Paolo Caliceti (+39 0498275695) <i>paolo.caliceti@unipd.it</i>
Pharmaceutical-molecular mechanisms	The research focuses on: study of anticancer compounds; drugs targeting nucleic acids or other disease-selective protein targets; photochemical and photobiological effects; biophysical chemistry	    	Claudia Sissi (+39 0498275711) <i>claudia.sissi@unipd.it</i>
Pharmaceutical biology	The research comprises plants as source of secondary metabolites, in vitro plant cell cultures, pharmacognostic evaluation of herbal drugs, algae as source of phytochemicals	    	Raffaella Filippini (+39 0498275371) <i>raffaella.filippini@unipd.it</i>

OTHER R&D ORGANIZATIONS

Ananas Nanotech	Spin off active in the biomedical sector which operates in particular in the development of analytical and diagnostic systems that exploit the technology of nanoparticles of avidin-nucleic acids (ANANAS) originating within the Department of Pharmaceutical Sciences. The company's purpose is the development and marketing of kits and reagents for research, in vitro and in vivo diagnostics and drug delivery using the proprietary technology of the ANANAS assemblies Contacts: Margherita Morpurgo (+39 0498275330) - margherita.morpurgo@unipd.it Web site: https://www.dsfarm.unipd.it/terza-missione/spin
Eubiome	Among the microbiome modulation strategies, one of the most interesting and promising is fecal microbiota transplantation (FMT), a medical procedure in which stool from a healthy donor is introduced into a patient's intestine as a medical treatment. FMT has also been applied in veterinary medicine for the treatment of intestinal disorders of ruminants and equines since the 17th century. In this scenario, Eubiome intends to offer fecal biobank services in an attempt to meet the growing need for safe, standardized, rapid and economic access to the material necessary for the practice of FMT, both in the field of research and in veterinary care, in particular as far as pets are concerned Contacts: Maria Cecilia Giron (+39 0498275091) - cecilia.giron@unipd.it Web site: https://www.eubiome.it/en/
Institute of Condensed Matter Chemistry and Energy Technologies - ICMATE	Research activity in the fields of Radiopharmaceutical Chemistry, Pharmaceutical Radiochemistry, Nuclear Medicine and Molecular Imaging; Bio-inorganic Chemistry Contacts: Alessandro Dolmella (+39 0498275345) - alessandro.dolmella@unipd.it Web site: https://www.cnr.it/en/institute/031
National Institute for Nuclear Physics INFN - ISOLPHARM Project	The ISOLPHARM Project was born from the collaboration between the Departments of Pharmaceutical and Pharmacological Sciences, the Department of Chemical Sciences of the University of Padova and the Legnaro National Laboratories (LNL) of the National Institute of Nuclear Physics (INFN) where the Selective Production of Exotic Species (SPES) Project is under development. By means of the Isotope Separation On-Line (ISOL) technique both traditional and innovative radioisotopes will be produced with high-specific activity, going beyond the state of art of the radioisotope production Contacts: Nicola Realdon (+39 0498275338) - nicola.realdon@unipd.it Web site: https://isolpharm.pd.infn.it/web/
UNIRED	Spin off of active in the research field of cosmetic products, dietary and herbal food supplements, medical devices and home products; investigations on sensorial, psychophysical, neuroimaging, marketing, customer satisfaction aimed at the development, promotion and marketing of wellness through the use of the products themselves Contacts: Alessandra Semenzato (+39 0498275356) - alessandra.semenzato@unipd.it Web site: http://unired.it/en/home-2/

COLLABORATIONS WITH COMPANIES

- Bios Line S.p.A.
- Fidia S.p.A.
- Solgar Italia Multinutrient S.p.A.
- Unifarco S.p.A.

MORE INFO

- Research areas
- Contracts for commissioned research
- Spin-off



**Università
degli Studi
di Palermo**

d-i
dipartimento
di ingegneria
unipa



GENERAL INFORMATION

Università degli Studi di Palermo

Department of Engineering

Viale delle Scienze, Edificio 7 – 90128 Palermo (PA)

sito web: <http://www.unipa.it/dipartimenti/ingegneria>

CONTACTS

Prof. Antonino VALENZA

+39 09123863701

DETAILED INFORMATION

Staff: 73 Full Professors

94 Associate Professors

116 Researchers

16 Structured Technicians

72 Administratives

Registered students:

Post Lauream Training: 40 enrolled in international doctoral programs in Chemical, Environmental, Biomedical, Hydraulic and Materials Engineering

22 Research fellows

64 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Pollutants abatement

Photocatalytic processes for the abatement of emerging pollutants



Giuseppe Marcì (+39 09123863738)
giuseppe.marci@unipa.it

Circular economy

Production of renewable energy via salinity gradients



Giorgio Micale (+39 3204328589)
giorgiod.maria.micale@unipa.it

Circular economy

Valorisation of brines coming from desalination plants and recovery of critical raw materials for waste saline streams



Giorgio Micale (+39 3204328589)
giorgiod.maria.micale@unipa.it

Sensors

Development of electrochemical sensors for applications in the environmental, food and biomedical fields



Rosalinda Inguanta (+39 3332751523)
rosalinda.inguanta@unipa.it

Nanomaterials

Development of nanostructured electrodes for electrochemical devices



Rosalinda Inguanta (+39 3332751523)
rosalinda.inguanta@unipa.it

Fluid dynamics

Computational Fluid Dynamics Simulation in Monophasic and Multiphasic Industrial Systems



Francesca Scargiali (+3909123863714)
francesca.scargiali@unipa.it

Waste valorisation

Study of thermochemical processes for the valorization of residual organic matrices: -Hydrothermal liquefaction processes for the production of biofuels and the valorization of residual biomass



Alessandro Galia (+39 09123863758)
alessandro.galia@unipa.it

Microalgae	Development of microalgae cultivation techniques for the accumulation of high-value compounds. Utilization of residual biomass. Application of microalgae in wastewater treatment and removal of emerging contaminants	  	Francesca Scargiali (+39 09123863714) <i>francesca.scargiali@unipa.it</i>
Energy recovery	Reverse electrodialysis and microbial cells for energy production, waste water treatment and production of fine chemicals	  	Onofrio Scialdone (+39 09123863754) <i>onofrio.scialdone@unipa.it</i>
Biomass	Synthesis of catalysts and catalytic tests for the valorization of biomass	  	Giuseppe Marcì (+39 09123863738) <i>giuseppe.marci@unipa.it</i>
Soil electrodeposition	Electrochemical remediation of soil and sediments contaminated by recalcitrant organic pollutants	  	Federica Proietto (+39 09123863758) <i>federica.proietto@unipa.it</i>
Circular economy	Energy storage processes based on salinity and pH gradients	  	Giorgio Micale (+39 3204328589) <i>giorgiod.maria.micale@unipa.it</i>
Hydrogen	Development of electrocatalysts for the production of green hydrogen	  	Rosalinda Inguanta (+39 3332751523) <i>rosalinda.inguanta@unipa.it</i>
CO2 electro-reduction	Innovative electrochemical process for the waste-CO2 valorisation into added-value chemicals (e.g. formic acid, syngas)	  	Onofrio Scialdone (+39 09123863754) <i>onofrio.scialdone@unipa.it</i>
Polymer functionalisation	Synthesis and modification of polymers by electrochemical methods or in dense CO2-based process media	  	Alessandro Galia (+39 09123863758) <i>alessandro.galia@unipa.it</i>
Circular economy	Low-energy seawater desalination	  	Giorgio Micale (+39 3204328589) <i>giorgiod.maria.micale@unipa.it</i>
Bio-coatings	Development of biocoatings for orthopedic applications	  	Rosalinda Inguanta (+39 3332751523) <i>rosalinda.inguanta@unipa.it</i>
Decarbonization	Chemical processes driven by concentrated solar heat	  	Alessandro Galia (+39 09123863758) <i>alessandro.galia@unipa.it</i>
Waste valorisation	Study of thermochemical processes for the carbonization of single use plastics in molten salts	  	Claudia Prestigiacomo (+39 09123863758) <i>claudia.prestigiacomo01@unipa.it</i>
Supercritical fluids	Supercritical Water Oxidation and Gasification Processes and Supercritical CO2 Extraction	  	Giuseppe Caputo (+39 09123862658) <i>giuseppe.caputo01@unipa.it</i>
Circular economy	Computational fluid dynamics (CFD) simulations of membrane separation processes and chemical engineering apparatuses. Computational emodynamics for biomedical applications	  	Giorgio Micale (+39 3204328589) <i>giorgiod.maria.micale@unipa.it</i>
Circular economy	Hydrogen productions via electro-membrane processes	  	Giorgio Micale (+39 3204328589) <i>giorgiod.maria.micale@unipa.it</i>
Wastewater treatment	Innovative electrochemical processes for the wastewater treatment polluted by organic recalcitrants	  	Onofrio Scialdone (+39 09123863754) <i>onofrio.scialdone@unipa.it</i>

Supercritical fluids

Supercritical fluids extraction of high added values products.



Alessandro Galia (+39 09123863758)
alessandro.galia@unipa.it

Circular economy

Reactive crystallisation of alkali and alkaline earth metals



Giorgio Micale (+39 3204328589)
giorgiod.maria.micale@unipa.it

PUBBLICAZIONI

- Tamburini A., Tedesco M., Cipollina A., Micale G., Ciofalo M., Papapetrou M., Van Baak W., Piacentino A., **"Reverse electrodialysis heat engine for sustainable power production"** (2017) Applied Energy, 206, pp. 1334 – 1353
- Prestigiacomo C., Costa P., Pinto F., Schiavo B., Siragusa A., Scialdone O., Galia A., **"Sewage sludge as cheap alternative to microalgae as feedstock of catalytic hydrothermal liquefaction processes"**, (2019) Journal of Supercritical Fluids, 143, pp. 251 – 258
- Giacalone F., Catrini P., Tamburini A., Cipollina A., Piacentino A., Micale G., **"Exergy analysis of reverse electrodialysis"**, (2018) Energy Conversion and Management, 164, pp. 588 – 602
- Patella B., Narayan T., O'Sullivan B., Daly R., Zanca C., Lovera P., Inguanta R., O'Riordan A., **"Simultaneous detection of copper and mercury in water samples using in-situ pH control with electrochemical stripping techniques"**, (2023) Electrochimica Acta, 439, art. no. 141668
- Proietto F., Schiavo B., Galia A., Scialdone O., **"Electrochemical conversion of CO₂ to HCOOH at tin cathode in a pressurized undivided filter-press cell"**, (2018) Electrochimica Acta, 277, pp. 30 – 40
- Lima S., García-López E.I., Adawy A., Marci G., Scargiali F., **"Valorisation of Chlorella sp. biomass in 5-HMF through a two-step conversion in the presence of Nb₂O₅ and NbOPO₄ and optimisation through reactive extraction"**, (2023) Chemical Engineering Journal, 471, art. no. 144583
- García-López E.I., Pomilla F.R., Krivtsov I., Serrano A., Liotta L.F., Villar-Rodil S., Paredes J.I., Marci G., **"Heteropolyacids supported on boron nitride and carbon nitride for catalytic and catalytic photo-assisted alcohol dehydration"**, (2021) Catalysis Today, 380, pp. 209 – 222



Dipartimento di Scienze della Terra e del Mare

GENERAL INFORMATION

Università degli Studi di Palermo
Department of Earth and Sea Sciences (DiSTeM)
Via Archirafi 22 - 90123 Palermo (PA)
sito web: <http://www.dipartimento.distem@unipa.it>

CONTACTS

Prof. Attilio SULLI
+39 09123864631

DETAILED INFORMATION

Staff: 11 Full Professors
19 Associate Professors
31 Researchers
7 Technologists

Registered students:

Post Lauream Training: 28 enrolled in doctoral programs in Earth and Sea Sciences
6 Research fellows
26 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

The scientific activity focuses on various topics related to environmental microbiology and microbial biotechnologies aimed at the restoration of contaminated environments and matrices (e.g. water, sediments, soils contaminated with hydrocarbons). The majority of the research activities are aimed at the taxonomic, catabolic, and metabolic characterization of cultivable and non-cultivable microbial communities, as well as the development of microbial biotechnological systems for bioremediation applications. Ongoing and/or completed activities include: the study of biofilms and the plastsphere associated with biodegradable and non-biodegradable plastics in marine environments, analysis of hydrocarbon-oxidizing microbial communities, immobilization of hydrocarbon-degrading bacteria on biopolymeric supports for bioremediation applications in contaminated waters, isolation and characterization of microorganisms with lipolytic activity, and development of systems for the bioaugmentation of industrial effluents (mixtures of oils and fats), as well as the search for antimicrobials from unconventional sources, and the study of microbial bioindicators in desertified soils

**Analytical chemistry**

Studies on the interactions between components of natural waters (alkali metal ions or alkaline earth metals) with low molecular weight ligands of environmental interest (carbonates, phosphates) and biological interest (amino acids, carboxylates, nucleotides). Different modeling approaches have been used to define interaction parameters [SIT (Specific ion Interaction Theory), Pitzer, and Ionic Association model]. Investigations on the acid-base properties of high molecular weight synthetic ligands (polyacrylates and polymethacrylates) and natural ligands (alginate, chitosan, pectin, humic and fulvic acids) and on the formation of complex species with metal ions and organometallics in different ionic media and at different ionic strengths, aimed at defining the dependence of protonation constants and complex formation on ionic strength, and their capacity as sequestering agents for ions of toxic metals. Studies on the binding capacity of organic and inorganic soils, aimed at defining the bioavailability of essential and toxic metal ions. Development of chemical speciation models capable of predicting the chemical behavior of different classes of ligands in natural fluids, with particular reference to marine waters. Formulation and characterization of composites (halloysite nanotubes) and biopolymers, to study the selective adsorption of organic and inorganic pollutants. Analysis of different contaminants and their ecotoxicological impact in natural environments, aimed at environmental control and monitoring. Characterization, biodegradation, and environmental risks associated with bioplastics. Theoretical and practical studies on the behavior of zirconium and hafnium in natural waters. Separative analytical methods for the characterization of food and environmental matrices





GENERAL INFORMATION

Università degli Studi di Palermo

Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STeBiCeF)

Viale delle Scienze, Ed. 16 - 90128 Palermo (PA)

sito web: <http://www.unipa.it/dipartimenti/stebicef>

CONTACTS

Prof. Vincenzo ARIZZA

+39 09123891804

+39 09123897111

<http://www.unipa.it/dipartimenti/stebicef/ricerca/aree.html>

DETAILED INFORMATION

Staff: 27 Full Professors

59 Associate Professors

66 Researchers

15 Structured Technicians

16 Administratives

6 General Services

Registered students: 3,200 (Academic year 2022/2023)

Post Lauream Training: 40 enrolled in doctoral programs in Molecular and Biomolecular sciences

40 enrolled in doctoral programs in Technologies and Science for Human Health

7 Research fellows

2 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROCESSES



SERVICES



TECHNOLOGIES



PROPRIETARY SEARCH



THIRD PARTY RESEARCH

R&D ACTIVITIES DETAIL

Green chemistry

Design and synthesis of supramolecular gels formed in solvents of low environmental impact. Use of supramolecular gels in the field of environmental preservation and remediation. Green solvents (ionic liquids and deep eutectic solvents) as reaction media for the biomass conversion in products of industrial value



Francesca D'Anna (+39 09123897540)
francesca.danna@unipa.it

Microbial biotechnology

Study of epigenetic mechanisms of gene regulation in antibiotic producer environmental isolates (actinomycetes). Microbiome analysis of various environmental (soil and water) niches. Antimicrobial and resistome analyses of emergent microbial pathogen strains. Use of biotechnological relevant microorganisms to produce biopolymers (bioplastics)



Rosa Alduina (+39 09123897360)
valeria.alduina@unipa.it

Nutrition

Determination of contaminants and toxic agents in agro-food products: Pesticides, VOCs, PAHs, PCBs, and Mycotoxins. Characterization of polyphenols and aromatic component of fruit, oils, and olives, alcoholic beverages and wines by Mass Spectrometry



Giuseppe Avellone (+39 09123891950)
beppe.avellone@unipa.it

Pharmaceutical chemistry	Design and synthesis of new drugs with antitumor, antiviral or antiparasitic activity. Study of their biological properties by using molecular modelling and SAR/QSAR/QSPR techniques	  	Anna Maria Almerico (+39 09123896804) <i>annamaria.almerico@unipa.it</i>
Innovative materials	Synthesis and characterization of materials for organic photovoltaics and perovskite solar cells based on fullerene derivatives. Synthesis and characterization of hybrid materials based on carbon nanoforms (fullerene, nanotubes, nanohorns, graphene) to be employed as supports for catalysts	  	Francesco Giacalone (+39 09123897530) <i>francesco.giacalone@unipa.it</i>
Biochemistry	Evaluation of biochemical mechanisms underlying the protective effects of phytochemicals in inflammatory and dysmetabolic pathologies	  	Mario Allegra (+39 09123896803) <i>mario.allegra@unipa.it</i>
Microbial biotechnology	Bacterial ecosystem services: Bioremediation of environmental matrices contaminated by organic pollutants (hydrocarbons, chlorinated solvents, fats & oils, etc)	  	Paola Quatrini (+39 09123897320) <i>paola.quatrini@unipa.it</i>
Innovative materials	Synthesis, structural characterization and study of the controlled inclusion and release properties of nanosponge materials, for their exploitation as sorbents, drug carriers or functional supports for nanocatalysts	  	Paolo Lo Meo (+39 09123897537) <i>paolo.lomeo@unipa.it</i>
Life science	Innovative therapies for the treatment of rare genetic diseases characterized by nonsense mutations	  	Ivana Pibiri (+39 09123897545) <i>ivana.pibiri@unipa.it</i>
Microbial biotechnology	Study of the physio-metabolic mechanisms of microorganisms (environmental isolates) resistant to toxic metal salts and known environmental pollutants to produce biogenic nanomaterials of economic and biotechnological interest	  	Alessandro Presentato (+39 09123897865) <i>alessandro.presentato@unipa.it</i>
Life science	Supramolecular and covalent modification of clay minerals for application in the drug carrier and delivery fields, filler in polymeric matrices and catalyst support	  	Serena Riela (+39 09123897546) <i>serena.riela@unipa.it</i>
Microbial biotechnology	Isolation and gene manipulation of microbial producers and production of biologically active biomolecules (antibiotics, anticancer, plant hormones, antioxidants, etc.) and hydrolytic enzymes (proteases, peptidases, xylanases, chitinases, cellulases, etc.) of biotechnological interest	  	Giuseppe Gallo (+39 09123897312) <i>giuseppe.gallo@unipa.it</i>
Pharmaceutical technology	Biocompatible polymers and biomaterials for drug delivery, regenerative medicine and nanomedicine	  	Fabio Salvatore Palumbo (+39 09123891939) <i>fabiosalvatore.palumbo@unipa.it</i>
Analytical chemistry	Development of analytical methods for the determination of drugs in food, aquatic organisms and biological fluids	  	David Bongiorno (+39 09123891900) <i>david.bongiorno@unipa.it</i>

Nutrition	Analytical study of the metabolic profile of plant species of food interest: search for secondary metabolites in order to identify chemical markers useful for quality control of the studied species. the bio-functional compounds of extra virgin olive oil, the extracts from fruits produced by native Sicilian and tropical plants subjected to various crop management models were studied. Quality control of food matrices: determinations of pesticides, VOCs, PAHs and mycotoxins. Enhancement of by-products of the agri-food industry, for the preparation of functional foods and for the pharmaceutical and cosmetic industry	  	Vita Di Stefano (+39 3392742001) <i>vita.distefano@unipa.it</i>
Pharmaceutical technology	Design, preparation and characterization of scaffolds for regenerative medicine	  	Giovanna Pitarresi (+39 09123891954) <i>giovanna.pitarresi@unipa.it</i>
Analytical chemistry	Characterization of food products, qualitative and quantitative determination of micropollutants in environmental matrices, development of analytical methods for investigations in the chemical-clinical field	  	Serena Indelicato (+39 09123891932) <i>serena.indelicato@unipa.it</i>
Genomics	Bioinformatics analysis of epigenomes. DNA methylation changes induced by bioactive molecules. Comparative bioinformatics analysis of transcriptomes	  	Maria A. Ragusa (+39 09123897401) <i>maria.ragusa@unipa.it</i>
Pharmaceutical technology	Development and characterization of bioadhesive drug delivery systems (microspheres and microcapsules, micromatrices, films) as enhancement tool for drug absorption throughout mucosal epithelium (ocular, buccal and skin)	  	Viviana De Caro (+39 09123891926) <i>viviana.decaro@unipa.it</i>
Pharmaceutical technology	Production of innovative polymeric biomaterials for the development of three-dimensional supports to be used in the field of regenerative medicine and drug delivery. These supports are produced using biofabrication techniques such as electrospinning, 3D printing and microfluidic technique and are used for the delivery of bioactive molecules of various kinds	  	Calogero Fiorica (+39 09123891935) <i>calogero.fiorica@unipa.it</i>
Life science	Design, synthesis and characterization of metal complexes for biomedical purposes. Study of the interaction of newly synthesized metal complexes and clinical approved metal-based drugs with biological molecules involved in carcinogenesis and other diseases. A special focus is dedicated to non-canonical DNA structures called G-quadruplexes	  	Alessio Terenzi (+39 09123897980) <i>alessio.terenzi@unipa.it</i>
Biochemistry	Identification of phytochemicals with anti-oxidant and anti-tumoral activities and biochemical characterization of the nutraceutical properties	  	Antonella D'Anneo (+39 09123890650) <i>antonella.danneo@unipa.it</i>
Biochemistry	Assays aimed at the identification of molecules with anti-tumor and anti-inflammatory action	  	Michela Giuliano (+39 09123890653) <i>michela.giuliano@unipa.it</i>
Biochemistry	Evaluation of the biological activity of phytochemicals extracted from waste products of the agri-food industry	  	Luisa Tesoriere (+39 09123896824) <i>luisa.tesoriere@unipa.it</i>
Cultural heritage	Developing of methodologies for the non invasive investigation of ancient paintings and metals	  	Maria Luisa Saladino (+39 3281290207) <i>marialuisa.saladino@unipa.it</i>

Cellular biology	Effect of natural and synthetic molecules on the proliferative and invasive behaviour and on gene expression of cultured human cancer cells	 	Claudio Luparello (+39 09123897405) <i>claudio.luparello@unipa.it</i>
Pharmaceutical technology	Production of microparticles by spray drying for the release of natural and nutraceutical active molecules and evaluation of their effectiveness	 	Mariano Licciardi (+39 09123891927) <i>mariano.licciardi@unipa.it</i>
Pharmaceutical technology	Functionalized polymeric materials for drug delivery. Design, preparation and characterization of polymeric systems for drug and gene delivery	 	Gennara Cavallaro (+39 09123891931) <i>gennara.cavallaro@unipa.it</i>
Genomics	Conventional, banded and molecular karyotype. Chromosomal immuno-localization of proteins. Study of genetic polymorphisms. Evaluation of DNA methylation at the genomic, chromosomal and gene level; evaluation of the potential modulation of DNA methylation of molecules contained in foods. In vitro tests for mutagenicity and genotoxicity of environmental xenobiotic substances	 	Fabio Caradonna (+39 09123897331) <i>fabio.caradonna@unipa.it</i>
Cultural heritage	Development of materials for the conservation of historical paper	 	Delia Chillura Martino (+39 09123897981) <i>delia.chilluramartino@unipa.it</i>
Innovative materials	Photochemical synthesis methodologies. Photochemical/photocatalytic degradation and removal methods of pollutants. Synthesis of fluorofunctionalized organic salts for use in organic photovoltaic and conductive phases in fuel cells PFAS. Analysis methods in complex matrices	 	Andrea Pace (+39 09123897543) <i>andrea.pace@unipa.it</i>
Biochemistry	Identification of phytocompounds with anti-oxidant and anti-tumoral activities and biochemical characterization of the nutraceutical properties	 	Antonella D'Anneo (+39 09123890650) <i>antonella.danneo@unipa.it</i>
Nanostructured materials	Development of biodegradable and biocompatible compounds. Development of new analytical approaches aimed to the traceability of dairy products	 	Delia Chillura Martino (+39 09123897981) <i>delia.chilluramartino@unipa.it</i>
Energy saving	Synthesis and characterization of hybrid materials based on amorphous and mesostructured silica or on polyhedral silsesquioxanes (POSS) functionalized with ionic liquids and their use as support for catalysts, anti-fouling and for the fixation or for the capture of CO ₂	 	Michelangelo Gruttadauria (+39 09123897534) <i>michelangelo.gruttadauria@unipa.it</i>
Pharmaceutical chemistry	Design, synthesis and biologic evaluation of organic molecules with heterocyclic nuclei having a potential antitumoral and antimicrobial activity	 	Demetrio Raffa (+39 09123891917) <i>demetrio.raffa@unipa.it</i>
Life science	Host-guest binding of small molecules with biomolecular targets, investigated by spectroscopic and computational approaches, for applications in biomedical research	 	Giampaolo Barone (+39 09123897973) <i>giampaolo.barone@unipa.it</i>
Sustainability	Developing of persistent luminescence formulations for light paths and anti-counterfeiting. Developing of nanomaterials for preventive stone conservation	 	Maria Luisa Saladino (+39 3281290207) <i>marialuisa.saladino@unipa.it</i>

OTHER R&D ORGANIZATIONS

Laboratory of environmental microbiology and microbial ecology (EMME-Lab)

Contacts: Paola Quatrini (+39 09123897320) - paola.quatrini@unipa.it

Laboratory of molecular microbiology and biotechnology (LAMMB)

Contacts: Giuseppe Gallo (+39 09123897312) - giuseppe.gallo@unipa.it

Laboratory of Organic Chemical Processes, Synthesis and Purification of polymers

Contacts:
Gennara Cavallaro (+39 09123891931) - gennara.cavallaro@unipa.it

Mass Spectrometry Laboratory (LabMass)

Contacts: Giuseppe Avellone (+39 09123891950) - beppe.avellone@unipa.it

Multilab Nodes 1.2 (Chemical safety), 3.2 (Process quality), 3.3 (Food traceability) of the technological platform PI.A.S.S.- Platform for Agrofood Science and Safety

Contacts: Andrea Pace (+39 09123897543) - andrea.pace@unipa.it

COLLABORATIONS WITH COMPANIES

- ALAB.TECH S.r.l
- Irritec S.p.A.
- Nutrigea S.r.l
- NanoSilv S.r.l.
- Zoetis Manufacturing S.r.l.



GENERAL INFORMATION

Università degli Studi di Parma

Department of Engineering and Architecture

Parco Area della Scienze 181/A - Padiglione 10 - 43124 Parma (PR)

sito web: <https://dia.unipr.it/it>

CONTACTS

Prof. Antonio MONTEPARA

+39 0521905904

DETAILED INFORMATION

Staff: 48 Full Professors

51 Associate Professors

36 Researchers

10 Structured Technicians

20 Administrative Technicians

Registered students: 3,894 (A.A. 2020/2021)

Post Lauream Training: 28 enrolled in Doctorates in Civil Engineering and Architecture;

30 enrolled in Doctorates in Industrial Engineering;

31 enrolled in Doctorates in Information Technology;

5 enrolled in Doctorates in Automotive Engineering for Intelligent Mobility (administrative headoffice University of Bologna);

36 Research fellows

Patents: 2 Universal structural node - Prof. Alessandro Pironi, Ing. Fabrizio Moroni, Sig. Riccardo De Filippis, UNIPR - Industrial Engineering Siteia, Parma

Detection of nuclear radiation sources by autonomous aircraft equipped with attractive haptic interface - Prof. Stefano Caselli, Prof. Jacopo Aleotti, UNIPR - CNR - Department of Information Engineering

OTHER R&D ORGANIZATIONS

CIPACK Laboratory of Chemistry and Materials

Contacts: Daniel Milanese (+39 0521905295) - daniel.milanese@unipr.it

Corrado Sciancalepore (+39 0521904780) - corrado.sciancalepore@unipr.it

Web site: <https://www.centritecnopolo.unipr.it/cipack/>

Laboratory of Hydraulics and Hydraulics Structures

Contacts:

Sandro Longo (+39 0521905157) - sandro.longo@unipr.it

Luca Chiapponi (+39 0521906978)

Web site: <https://dia.unipr.it/it/servizi/laboratori-ufficiali/laboratorio-di-idraulica-e-costruzioni-idrauliche>

Laboratory of Rheology and Rheometry

Contacts: Felice Giuliani (+39 0521905905) - felice.giuliani@unipr.it

Sandro Longo (+39 0521905157) - sandro.longo@unipr.it

reometrica@unipr.it

Web site: <http://www.reometrica.unipr.it/>



UNIVERSITÀ DI PARMA



DEPARTMENT OF CHEMISTRY, LIFE
SCIENCES AND ENVIRONMENTAL
SUSTAINABILITY

GENERAL INFORMATION

Università degli Studi di Parma

Department of Food and Drug

Parco Area delle Scienze 27/a - 43124 Parma (PR)

sito web: <https://saf.unipr.it/it>

CONTACTS

Prof. Gabriele COSTANTINO

+39 0521906630

DETAILED INFORMATION

Staff: 17 Full Professors

42 Associate Professors

22 Researchers

15 Structured Technicians

11 Administrative Technicians

Registered students: 2,232 (Academic year 2018/2019)

Post Lauream Training: 24 enrolled in Doctorates in Food Science,

25 enrolled in Doctorates in Pharmacy

22 Research fellows

Patents: 6

OTHER R&D ORGANIZATIONS

Biopharmanet_tec

Interdepartmental Centre for Innovation in Health Products

Contacts: Ruggero Bettini (+39 0521905089) - ruggero.bettini@unipr.it

Web site: <http://www.centritecnopolo.unipr.it/biopharmanet-tec/>



UNIVERSITÀ
DI PARMA

DIPARTIMENTO DI SCIENZE
CHIMICHE, DELLA VITA E DELLA
SOSTENIBILITÀ AMBIENTALE

SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi di Parma

Department of Chemistry, Life Sciences and Environmental Sustainability

Parco Area delle Scienze 11/A – 43124 Parma (PR)

sito web: <http://scvsa.unipr.it/it>

CONTACTS

Prof. Roberto CORRADINI

+39 0521906621 (Department Research Office)

Guglielmina Gnappi (+39 0521905103) - guglielmina.gnappi@unipr.it

DETAILED INFORMATION

Staff: 29 Full Professors

72 Associate Professors

34 Researchers

1 Technologist

43 Structured Technicians

13 Administrative Technicians

Registered students: 2,644 (Academic year 2022/2023)

Post Lauream Training: 137 enrolled in doctoral programs in Chemistry, Material Sciences, Biotech & Biosciences, Evolutional Biology and Ecology, Earth Sciences

41 Research fellows

29 fellows

Patents: 6 Reference years: 2011-2021

<https://www.unipr.it/en/proprietà-intellettuale-brevetti>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Bio-orthogonal reactions

Development of bio-orthogonal reactions for ligation and small-molecules release



Alex Manicardi (+39 0521905551)
alex.manicardi@unipr.it

Cellular imaging

Design and synthesis of fluorophores for the imaging of cell membranes by nonlinear optics techniques



Laura Baldini (+39 0521905457)
laura.baldini@unipr.it

Mini proteins

Realization of supramolecular mini-proteins with catalytic and recognition activities



Alex Manicardi (+39 0521905551)
alex.manicardi@unipr.it

Photocatalysis

The research aims to develop a waste water remediation system, based on photocatalysts supported on 3D printed matrices. Emergent contaminants will be considered



Laura Bergamonti (+39 0521903080)
laura.bergamonti@unipr.it

Sustainability

Development of systems able to remove metal ions from waste waters or to recover critical elements



Alessandro Casnati (+39 0521905412)
alessandro.casnati@unipr.it

Sustainability

Development of additives and detergents for lubricants



Alessandro Casnati (+39 0521905412)
alessandro.casnati@unipr.it

Spettroscopia non-lineare	Study of the structural and dynamic properties of molecular systems by pump-probe IR and 2D-IR spectroscopy; protein aggregation. Study of the properties of exciton systems by pump-probe and 2D electronic spectroscopy	  	Andrea Lapini (+39 0521906677) <i>andrea.lapini@unipr.it</i>
Protein-protein interactions	Characterization of protein-protein interactions of biomedical interest and identification of their inhibitors	  	Barbara Montanini (+39 0521905654) <i>barbara.montanini@unipr.it</i>
Artificial proteins	Design and study of metalloproteins and metallopeptides with applications in stereoselective biocatalysis and photocatalysis	  	Matteo Tegoni (+39 0521905424) <i>matteo.tegoni@unipr.it</i>
Crystalline materials	Design and characterization of solid phases, polymorphs and cocrystals of active compounds in the pharmaceutical, agrochemical and environmental fields for optimizing the storage and release of active ingredients	  	Alessia Bacchi (+39 0521905421) <i>alessia.bacchi@unipr.it</i>
Chirality	Chiroptical properties of molecular, supramolecular and plasmonic systems: experimental and theoretical studies	  	Anna Painelli (+39 0521905461) <i>anna.painelli@unipr.it</i>
Cyclic peptides	Synthesis of cyclic peptide derivatives for recognition of proteins and inhibition of protein-protein interactions	  	Alex Manicardi (+39 0521905551) <i>alex.manicardi@unipr.it</i>
Metals recovery	Complexation studies for the recovery of noble metals from inorganic residues and for the recovery of metals from permanent magnets	  	Luciano Marchiò (+39 0521905419) <i>luciano.marchio@unipr.it</i>
Fluorescence	Investigation of fluorescent molecules and materials for applications in the fields of bioimaging, biosensors, OLED (exploiting TADF)	  	Cristina Sissa (+39 0521905450) <i>cristina.sissa@unipr.it</i>
Spettroscopia vibrazionale	Micro FT-IR and micro-Raman study of molecular materials: polymorphism and phase-transitions	  	Matteo Masino (+39 0521905438) <i>matteo.masino@unipr.it</i>
Diagnostic methods	Development of diagnostic methods through biomolecules modifications measurements with omics technologies and big data analysis	  	Marco Morselli (+39 0521905150) <i>marco.morselli@unipr.it</i>
Geopolymers	The research develops innovative geopolymer composites, based on industrial and agricultural waste, to be used as plasters or mortars for sustainable buildings	  	Claudia Graiff (+39 0521906581) <i>claudia.graiff@unipr.it</i>
Optical imaging	Investigation of cells and tissues through imaging based on the nonlinear optical processes of two-photon excited fluorescence and/or second-harmonic generation	  	Francesca Terenziani (+39 0521905453) <i>francesca.terenziani@unipr.it</i>
Circular economy	Development of antimicrobial lignin-based materials functionalized with metals of agronomical interest	  	Dominga Rogolino (+39 0521906582) <i>dominga.rogolino@unipr.it</i>
Sustainable materials	Recovery of cosmetic waste for the production of ecosustainable material	  	Federica Bianchi (+39 0521905446) <i>federica.bianchi@unipr.it</i>

Health	Design and synthesis of multivalent/multifunctional ligands and inhibitors for medically and pharmaceutically relevant biomacromolecules	  	Francesco Sansone (+39 0521905458) <i>francesco.sansone@unipr.it</i>
Theoretical chemistry	Development of novel theoretical approaches to attack the molecular electronic structure as well as the excited state dynamics of electrons and nuclei	  	Francesco Di Maiolo (+39 0521902077) <i>francesco.dimaiolo@unipr.it</i>
Health	Design and synthesis of non-viral vectors for nucleic acid therapeutics	  	Francesco Sansone (+39 0521905458) <i>francesco.sansone@unipr.it</i>

OTHER R&D ORGANIZATIONS

BIOPHARMANET-TEC	Interdepartmental Research Centre for Health Product Innovation Contacts: Ruggero Bettini (+39 0521905089) - ruggero.bettini@unipr.it Web site: http://www.centritecnopolo.unipr.it/biopharmanet-tec
CIDEA	Multidepartment Center for Energy and the Environment Contacts: Agostino Gambarotta (+39 0521905864) - agostino.gambarotta@unipr.it Web site: http://www.centritecnopolo.unipr.it/cidea
CIM	Multidepartment Center of Measures "Giuseppe Casnati" Contacts: Enrico Dalcanale (+39 0521905463) - enrico.dalcanale@unipr.it Web site: http://www.centritecnopolo.unipr.it/cim/
CIPACK	Multidepartment Center for Packaging Contacts: Roberto Montanari (+39 0521905851) - roberto.montanari@unipr.it Web site: http://www.centritecnopolo.unipr.it/cipack/
SITEIA.PARMA	Multidepartment Center for Safety, Technology, Innovation and Agri-food Contacts: Alessandro Pirondi (+39 0521905885) - alessandro.pirondi@unipr.it Web site: http://www.centritecnopolo.unipr.it/siteiaparma

COLLABORATIONS WITH COMPANIES

- Barilla G. e R. Fratelli S.p.A
- Chiesi Farmaceutici S.p.A.
- Davines S.p.A.
- ENI S.p.A.
- Mectron S.p.A.
- Teregroup S.r.l.
- Versalis S.p.A.

PUBBLICAZIONI

- M. Storti, M.L. Faietti, X. Murgia, C. Catozzi, I. Minato, D. Tatoni, S. Cantarella, F. Ravanetti, L. Ragionieri, R. Ciccimarra, M. Zoboli, M. Vilanova, E. Sánchez-Jiménez, M. Gay, M. Vilaseca, G. Villetti, B. Pioselli, F. Salomone, S. Ottonello, B. Montanini, F. Ricci, **"Time-resolved transcriptomic profiling of the developing rabbit's lungs: impact of premature birth and implications for modelling bronchopulmonary dysplasia"**, Respir Res, 2023 Mar 15;24(1):80; doi: 10.1186/s12931-023-02380-y, Chiesi Farmaceutici S.p.A.
- L. Baraldi, L. Fornasari, I. Bassanetti, F. Amadei, A. Bacchi, L. Marchiò, **"Salification Controls the In-Vitro Release of Theophylline"**, Crystals 2022, 12, 201. <https://doi.org/10.3390/cryst12020201>. Chiesi Farmaceutici S.p.A.
- M. Vescovi, M. Melegari, C. Gazzurelli, M. Maffini, C. Mucchino, P.P. Mazzeo, M. Carcelli, J. Perego, A. Migliori, G. Leonardi, S. Pietarinen, P. Pelagatti, D. Rogolino, **"Industrial lignins as efficient biosorbents for Cr(VI) water remediation: transforming a waste into an added value material"**, RSC Sustainability, 2023, 1, 1423. DOI: 10.1039/d3su00081h. Green Innovation GMBH, Grabenweg 68, Innsbruck, 6020, Austria
- Gazzurelli, C., Carcelli, M., Mazzeo, P.P., Mucchino, C., Pandolfi, A., Migliori, A., Pietarinen, S., Leonardi, G., Rogolino, D., Pelagatti, P., **"Exploiting the Reducing Properties of Lignin for the Development of an Effective Lignin@Cu2O Pesticide"**, Adv. Sustainable Syst.2022, 6, 2200108. DOI: 10.1002/adsu.202200108. Green Innovation GMBH, Grabenweg 68, Innsbruck, 6020, Austria
- Gazzurelli, C., Migliori, A., Mazzeo, P.P., Carcelli, M., Pietarinen, S., Leonardi, G., Pandolfi, A., Rogolino, D., Pelagatti, P., **"Making Agriculture More Sustainable: An Environmentally Friendly Approach to the Synthesis of Lignin@Cu Pesticides"**, ACS Sustainable Chem. Eng. 2020, 8, 39, 14886–14895. DOI: 10.1021/acssuschemeng.0c04645. Green Innovation GMBH, Grabenweg 68, Innsbruck, 6020, Austria
- L. Vitali, V. Lolli, F. Sansone, A. Kumar, A. Concas, G.A. Lutz. **"Effect of Mixotrophy on Lipid Content and Fatty Acids Methyl Esters Profile by Chromochloris zofingiensis Grown in Media Containing Sugarcane Molasses"**, Bioenergy ResearchVolume 16, Issue 3, Pages 1851 – 1861 September 2023, 10.1007/s12155-022-10534-x. Teregroup S.r.l., Modena
- G. Vargas-Nadal, M. Köber, A. Nsamela, F. Terenziani, C. Sissa, S. Pescina, F. Sonvico, A. Mohd Gazzali, H.A. Wahab, L. Grisanti, M.E. Olivera, M.C. Palena, M.L. Guzman, L.C. Luciani-Giacobbe, A. Jimenez-Kairuz, N. Ventosa, I. Ratera, K.D. Belfield, B.M. Maoz, **"Fluorescent Multifunctional Organic Nanoparticles for Drug Delivery and Bioimaging: A Tutorial Review"**, Pharmaceuticals 2022, 14(11), 2498
10.3390/pharmaceutics14112498. Elvsys SAS, 172 Rue de Charonne, 75011 Paris, France

MORE INFO

- JobDay: yearly meeting with companies
- Job Opportunities - Career Center Services for graduates and Companies
- Collaborazioni con le imprese
- Support services for innovation
- Curricular internships for companies
- Innovative industrial PhDs



GENERAL INFORMATION

Università degli Studi di Pavia

Department of Chemistry

Via Taramelli, 12 - 27100 Pavia (PV)

sito web: <https://chimica.dip.unipv.it/en>

CONTACTS

Prof. Antonella PROFUMO

+39 0382987330

DETAILED INFORMATION

Staff:

14 Full Professors

27 Associate Professors

12 Researchers

9 Structured Technicians

7 Administratives

Registered students:

Post Lauream Training:

45 enrolled in doctoral programs in Chemical and Pharmaceutical Sciences and Industrial Innovation

20 Research fellows

7 fellows

Patents: 14

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Perovskites

Design of novel hybrid organic-inorganic perovskites for optoelectronic applications



Lorenzo Malavasi (+39 0382987921)
lorenzo.malavasi@unipv.it

Circular economy

Design, synthesis and characterization of low-impact binder and ceramic materials and valorization of secondary raw materials from hydrothermal treatments of biomass, waste and industrial by-products



Serena C. Tarantino (+39 0382985876)
serenachiara.tarantino@unipv.it

Antivirals

Synthesis of molecules of heterocyclic nature with potential activities as antivirals



Paolo Quadrelli (+39 0382987315)
paolo.quadrelli@unipv.it

Innovative materials

Synthesis and characterization of innovative materials



Umberto Anselmi Tamburini (+39 0382987799)
tau@unipv.it

Nanomaterials

Interaction of nanomaterials with biological systems and development of nanomaterials for biomedical applications



Umberto Anselmi Tamburini (+39 0382987799)
tau@unipv.it

Biometals

Effect of active redox metal ions on neurodegenerative processes. Synthesis and characterization of biomimetic metallo-enzyme complexes and of bioinspired catalysts



Enrico Monzani (+39 0382987925)
enrico.monzani@unipv.it

Organic photovoltaics

Chiral nanostructures, synthesis of functional polymers and organic materials for applications in the energy and environmental fields



Dario Pasini (+39 0382987835)
dario.pasini@unipv.it

NMR	High resolution ¹ H and ¹³ C NMR spectroscopy through multi-dimensional omo- and hetero-nuclear NMR experiments of complex mixtures, process impurities and complex mixtures	 	Mariella Mella (+39 0382987319) <i>mariella.mella@unipv.it</i>
Energy	Synthesis and characterization of organometallic and coordination compounds for applications in supramolecular chemistry, nonlinear optics, optoelectronic and/or photoelectrochemical devices	 	Alessio Orbelli Biroli (+39 0382987227) <i>alessio.orbellibiroli@unipv.it</i>
Sensors	Synthesis and characterization of nanomaterials (nanoparticles, nanostructured surfaces, composite materials) for sensing	 	Giacomo Dacarro (+39 0382987337) <i>giacomo.dacarro@unipv.it</i>
Water remediation	Determination and/or removal of emerging contaminants, particularly pharmaceuticals, from polluted waters by sorbent phases (natural, synthetic, from waste) or photocatalysis under sunlight. Determination of metals in biological markers for biomonitoring studies and evaluation of brain aging and neurodegeneration mechanisms	 	Michela Sturini (+39 0382987347) <i>michela.sturini@unipv.it</i>
Drug delivery	Synthesis of organic-inorganic hybrids for the release of poorly soluble drugs	 	Marcella Bini (+39 0382987202) <i>bini@unipv.it</i>
Computational chemistry	Design and development of functional materials (batteries, fuel cells) through a combined experimental-computational approach	 	Cristina Tealdi (+39 0382987569) <i>cristina.tealdi@unipv.it</i>
Micropollutants	Preparation and application of sorbent materials for extraction, pre-concentration, and cleanup in complex matrices. Development and validation of analytical methods for trace determination of organic contaminants and pharmacologically active compounds in environmental, food and biological matrices	 	Antonella Profumo (+39 0382987581) <i>antonella.profumo@unipv.it</i>
Photochemistry	Design of visible light labile compounds for synthetic applications such as photoacid generators and for polymerization processes	 	Maurizio Fagnoni (+39 0382987198) <i>fagnoni@unipv.it</i>
Biomaterials	Synthesis and characterization of ferrites and bones cements as biomaterials	 	Marcella Bini (+39 0382987202) <i>bini@unipv.it</i>
Batteries	Synthesis and physico chemical and electrochemical characterization of anodes and cathodes for sodium ion batteries	 	Marcella Bini (+39 0382987202) <i>bini@unipv.it</i>
Photocatalysis	Development of materials and processes for the production of solar fuels such as green hydrogen and ammonia	 	Lorenzo Malavasi (+39 0382987921) <i>lorenzo.malavasi@unipv.it</i>
Batteries	Development of novel electrode materials for Sodium-Ion Batteries: synthesis, physico-chemical and electrochemical characterization	 	Doretta Capsoni (+39 0382987213) <i>capsoni@unipv.it</i>

Green Hydrogen	Green Hydrogen production via water splitting and photo-reforming: analytical approach and applications in the energy-environmental field. New inorganic and organic catalysts, active under solar light, are investigated to be applied to photocatalytic systems for H ₂ production from wastewater and (waste) biomass	  	Andrea Speltini (+39 0382987350) <i>andrea.speltini@unipv.it</i>
Circular economy	Development of new synthetic methods through green processes. New paradigms in the circular economy field	  	Giuseppe Zanoni (+39 0382987321) <i>giuseppe.zanoni@unipv.it</i>
Molecular recognition	Design and preparation of (supra)molecular systems and materials for recognition, separation and sensing	  	Valeria Amendola (+39 0382987338) <i>valeria.amendola@unipv.it</i>
Terapie mirate	Synthesis of nucleic acid binders and conjugates for targeted diagnostics and therapeutic applications	  	Mauro Freccero (+39 0382987668) <i>mauro.freccero@unipv.it</i>
Solar cells	Research on Hybrid Perovskite Solar Cells: from innovative materials to advanced device fabrication	  	Giulia Grancini (+39 0382987245) <i>giulia.grancini@unipv.it</i>
Drug design	Research spans computational chemistry, structural biochemistry, molecular design and drug discovery	  	Giorgio Colombo (+39 0382987044) <i>g.colombo@unipv.it</i>
Stoccaggio H₂	Synthesis, characterization and functional evaluation of carbon-based nanostructures from agro-food waste and of hydride compounds from industrial metal waste for solid state hydrogen storage	  	Chiara Milanese (+39 0382987556) <i>chiara.milanese@unipv.it</i>
Antimicrobial	Preparation and application of new materials (nanoparticles, nanocomposites, functionalized surfaces) to fight microbial infections	  	Angelo Maria Taglietti (+39 0382987342) <i>angelo.taglietti@unipv.it</i>
Bioinorganic chemistry	Role of transition metals in neurodegenerative diseases	  	Simone Dell'Acqua (+39 382987354) <i>simone.dellacqua@unipv.it</i>
Colorimetric sensors	Development of sensors where receptors fixed on a solid phase (silica /plastic materials (EVOH) /compostable materials (cellulose, CMC)) change color by interaction with an analyte or class of analytes. All device development and testing are based on multivariate and DOE analysis, aimed at food and environmental applications	  	Raffaella Biesuz (+39 0382987348) <i>raffaella.biesuz@unipv.it</i>
Adsorbent materials	Development and physico-chemical characterization of adsorbents and composites for drug delivery and emerging pollutants remediation	  	Doretta Capsoni (+39 0382987213) <i>capsoni@unipv.it</i>
Studi strutturali	Advanced characterization of functional materials	  	Mauro Coduri (+39 0382987212) <i>mauro.coduri@unipv.it</i>
Forensic analysis	Development of electroanalytical methods applied to substances of pharmaceutical and forensic interest. Application of optical and chromatographic methods to the study of forensic evidence (gunshot residues, substances of abuse)	  	Daniele Merli (+39 0382987580) <i>daniele.merli@unipv.it</i>
Antibiotics	Biocatalytic green transition of industrial processes for the production of Cephalosporin and Carbapenem antibiotics	  	Filippo Doria (+39 0382987668) <i>filippo.doria@unipv.it</i>

Smart packaging	Plastic films from renewable or fossil sources, with additional properties for food preservation	 	   	Piersandro Pallavicini (+39 0382987336) <i>psp@unipv.it</i>
Green chemistry	Eco-sustainable photochemical processes using visible light	 	   	Stefano Protti (+39 0382987314) <i>stefano.protti@unipv.it</i>
Stress ossidativo	Studies on the reactivity of metal-complexes with neuronal peptides and proteins involved in neurodegenerative processes	 	   	Chiara Bacchella (+39 3496850123) <i>chiara.bacchella@unipv.it</i>
XAS operando	Determination of the mechanisms of heterogeneous reactions	 	   	Paolo Ghigna (+39 0382987574) <i>paolo.ghigna@unipv.it</i>
Preservation	Preparation and application of new materials (gels, nanoparticles, nanocomposites) to the conservation of artworks	 	   	Maurizio Licchelli (+39 0382987936) <i>maurizio.licchelli@unipv.it</i>
Sensors	Development of chemically modified electrodes and optical sensors for selective and highly sensitive detection of analytes of environmental, food and clinical interest	 	   	Giancarla Alberti (+39 0382987057) <i>giancarla.alberti@unipv.it</i>
Solidi farmaceutici	Solid state of API and their interactions with excipients, methods to improve solubility and dissolution rate	 	   	Giovanna Bruni (+39 0382987667) <i>giovanna.bruni@unipv.it</i>
Struttura proteine	Protein 3D structure prediction and analysis; Datamining the Protein Data Base and other data collections	 	   	Oliviero Carugo (+39 0382987858) <i>olicar04@unipv.it</i>
Metalloproteins	Effects of oxidative stress and precursors of neuronal damage on peptides and proteins	 	   	Stefania Nicolis (+39 0382987340) <i>stefania.nicolis@unipv.it</i>
Photocatalysis	Sustainable organic synthesis via photochemical/photocatalytic conditions and processes under flow conditions	 	   	Davide Ravelli (+39 0382987316) <i>davide.ravelli@unipv.it</i>

COLLABORATIONS WITH COMPANIES

Research and/or PhD collaborations are active with the following companies:

- De Nora S.p.A.
- Endeavour S.r.l.
- Edison S.p.A.
- ENI S.p.A.
- Flamma S.p.A.
- Gruppo PER
- Millbo S.r.l.
- Olon S.p.A.
- RSE S.p.A.
- Sodai S.p.A.
- Solvay SA

PUBBLICAZIONI



UNIVERSITÀ DI PAVIA
Dipartimento di
Biologia e Biotecnologie
"Lazzaro Spallanzani"



SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi di Pavia
Department of Biology and Biotechnology L. Spallanzani
Via Ferrata 9 - 27100 Pavia (PV)
sito web: <http://dbb.unipv.it>

CONTACTS

Prof. Marco BIGGIOGERA
+39 0382986446

DETAILED INFORMATION

Staff: 14 Full Professors

25 Associate Professors

20 Researchers

2 Technologists

24 Structured and Administrative Technicians

1 General Services

Registered students: 1,992 (Academic year 2022/2023)

Post Lauream Training: 50 enrolled in doctoral programs in in Genetics, Molecular and Cellular Biology

12 enrolled in doctoral programs in Biomolecular sciences and biotechnology

8 enrolled in doctoral programs in Biomedical sciences

2 enrolled in doctoral programs in Bioengineering, Bioinformatics and Health technologies

34 enrolled in II level Master biennale in Discipline Regolatorie "G. Benzi"

17 enrolled in II level Master in "Human Nutrition"

23 enrolled in II level Master in "Biologia e biotecnologie della riproduzione: dalla ricerca alla clinica"

26 Research fellows

8 fellows

Patents: 7 <https://dbb.dip.unipv.it/en/research/innovation/patents>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Dermocosmetics

Development and implementation of new tests on reconstituted human tissues for cosmetic products and medical devices



Ornella Pastoris (+39 0382986393)
ornella.pastoris@unipv.it

Seed priming

New molecular hallmarks and priming agents for the optimization of seed priming techniques



Alma Balestrazzi (+39 0382985435)
alma.balestrazzi@unipv.it

Nutraceuticals

Production of flavorings and nutraceutical foods from *Hericium erinaceus*, *Lentinula edodes* and *Grifola frondosa*



Paola Rossi (+39 0382986076)
paola.rossi@unipv.it

Anionic biopolymers

Fermentative synthesis of an anionic biopolymer usable in the food, biomedical, cosmetic, agriculture and metal recovery sectors



Cinzia Calvio (+39 0382985559)
cinzia.calvio@unipv.it

Infertility

Fighting infertility: a biotechnological platform to evaluate the effects of chemicals and physical agents on oocytes and sperm quality



Maurizio Zuccotti (+39 0382986323)
maurizio.zuccotti@unipv.it

Molecular biotechnology	Biochemical and structural studies on enzymes relevant for industrial biocatalysis	    	Andrea Mattevi (+39 0382985525) <i>andrea.mattevi@unipv.it</i>
Biocompatible polymers	Biocompatible materials: optimization of silicon-based coatings and interaction with tissues	    	Maurizia Dossena (+39 0382986468) <i>maurizia.dossena@unipv.it</i>
New antibiotics	Active compounds against pathogenic bacteria and study of their mechanism of action and resistance	    	Maria Rosalia Pasca (+39 0382985576) <i>mariarosalia.pasca@unipv.it</i>
Biostimulants	Development of biostimulants from sustainable raw material for seed priming treatments	    	Anca Macovei (+39 0382985435) <i>anca.macovei@unipv.it</i>
Circular economy	Phytochemicals from vegetable waste using an enzyme-assisted extraction method	    	Daniela Buonocore (+39 038296390) <i>daniela.buonocore@unipv.it</i>
Molecular biotechnology	"Customized" production of recombinant proteins using prokaryotic and eukaryotic expression systems	    	Federico Forneris (+39 0382985228) <i>federico.forneris@unipv.it</i>
Circular economy	Biotechnological Recycling of Liquid Organic Waste Using Microalgae	    	Alberta Pinnola (+39 0382985524) <i>alberta.pinnola@unipv.it</i>
Drug design	Drug design studies on monoamine oxidases as validated targets for neurological diseases	    	Claudia Binda (+39 0382985527) <i>claudia.binda@unipv.it</i>

OTHER R&D ORGANIZATIONS

Alga&Zyme Factory S.r.l.	Spin-off that produces industrial enzymes in tobacco plants Contacts: Rino Cella (+39 0382985570) - rino.cella@unipv.it
bioRESTART S.r.l.	Spin-off for the sustainable recovery of bioactive compounds from vegetable waste Contacts: Daniela Buonocore (+39 0382987530) - daniela.buonocore@unipv.it Web site: https://www.f6s.com/biorestart
Centro Grandi Strumenti - CGS	The center hosts tools, large equipment (e.g. super resolution equipment) and services for scientific research Contacts: (+39 0382987530) - cgs@unipv.it Web site: https://cgs.unipv.it/
MICONET S.r.l.	Spin-off that develops and produces new foods derived from mushrooms Contacts: Paola Rossi (+39 0382986076) - paola.rossi@unipv.it Web site: http://www.miconet.it

COLLABORATIONS WITH COMPANIES

- Bio Basiceurope S.r.l.
- Gek S.r.l.
- Merck serono S.p.A.
- Professional Dietetics S.p.A.

PUBBLICAZIONI

- Nat Commun doi: 10.1038/s41467-022-34912-3
- Plant Cell Environ doi: 10.1111/pce.14295
- Plants doi: 10.3390/plants11060816
- Protein Sci doi: 10.1002/pro.4486

MORE INFO

DBB displays a strong vocation for the transfer of research results outside the academic context. The degree course in Advanced Biotechnology participates in the initiative of the University of Pavia "Master's Degrees Plus" which provides for access, on a reward basis, to an extra semester of paid professional training / internship in companies in the biotechnology sector (<https://biotecnologieavanzate.cdl.unipv.it/en/node/164>)



DIPARTIMENTO DI SCIENZE AGRARIE, ALIMENTARI E AMBIENTALI

GENERAL INFORMATION

Università degli Studi di Perugia
Department of Agricultural, Food and Environmental Sciences
 Borgo XX giugno 74 - 06121 Perugia (PG)
 sito web: <http://dsa3.unipg.it/en/>

CONTACTS

Prof. Gaetano MARTINO
 +39 0755856060

DETAILED INFORMATION

Staff: 9 Full Professors
 42 Associate Professors
 21 Researchers
 25 Structured Technicians
 10 Administrative Technicians

Registered students: 570 (Academic year 2022/2023)
Post Lauream Training: 10 Research fellows

Patents: 6

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Circular economy

Agronomic potential of glass-based materials recycled by waste product of ceramic sector as novel inorganic slow-release iron fertilizer



Daniela Businelli (+39 0755856228)
daniela.businelli@unipg.it

Nanomaterials

Evaluation of biologically-based nanomaterials for crop protection from biotic agents



Gianandrea Salerno (+39 0755856034)
gianandrea.salerno@unipg.it

Green chemistry

Use of lignocellulosic biomasses as C sources for producing biofuels and biochemicals by microorganisms



Benedetta Turchetti (+39 0755856487)
benedetta.turchetti@unipg.it

Circular economy

Valorisation of agro-industrial waste to obtain bioactive substances that can be used as biostimulants in agriculture



Daniele Del Buono (+39 0755856225)
daniele.delbuono@unipg.it



A.D. 1308
unipg

DEPARTMENT OF CHEMISTRY,
BIOLOGY AND BIOTECHNOLOGY



GENERAL INFORMATION

Università degli Studi di Perugia
Department of Chemistry, Biology and Biotechnology
Via Elce di sotto 8 - 06123 Perugia (PG)

CONTACTS

Prof. Alceo MACCHIONI
+39 0755855634

Cristina Mencolini (Administrative Secretary) - +39 075585 5504

DETAILED INFORMATION

Staff: 14 Full Professors

32 Associate Professors

25 Researchers

14 Structured Technicians

10 Administrative Technicians

7 General Services

Registered students: 2,500 (Academic year 2022/2023)

Post Lauream Training: 30 enrolled in doctoral programs in Chemical Sciences

37 enrolled in doctoral programs in Biotechnology

7 enrolled in doctoral programs in Biological and Natural Sciences

46 enrolled in doctoral programs of national interest in Photo-Induced Processes and Technologies

28 enrolled in doctoral programs of national interest in Catalysis

16 Research fellows

14 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Photocatalysis

Degradation of polluting species of wastewater photocatalyzed by TiO₂ and assisted by surfactants



Tiziana Del Giacco (+39 0755855540)
tiziana.delgiacco@unipg.it

CO₂ decomposition

Calculation of kinetic coefficients for the plasma assisted CO₂ splitting to carbon and oxygen



Andrea Lombardi (+39 0755855511)
andrea.lombardi@unipg.it

Micro/nano plastics

Toxicity assessment of micro- and nano-plastics isolated from environmental matrices



Roberto Fabiani (+39 0755857332)
roberto.fabiani@unipg.it

Activation

Cooperative small molecule activation by apolar and weakly polar M-M' bonds is studied through a suitable computational protocol which allows to both rationalize the observed reactivities and infer general principles applicable to activation processes



Paola Belanzoni (+39 0755855520)
paola.belanzoni@unipg.it

Artificial intelligence

Design and implementation of chemical systems that mimic some performances of human intelligence



Pier Luigi Gentili (+39 0755855573)
pierluigi.gentili@unipg.it

Lipidomics	Lipidomic profile from biological samples	  	Gabriele Cruciani (+39 0755855629) <i>gabriele.cruciani@unipg.it</i>
Vesicole extracellulari	Purification of plant derived Extracellular vesicles with anticancer, antiinflammatory and antioxidant activity	  	Carla Emiliani <i>carla.emiliani@unipg.it</i>
Struttura proteine	Design of Invariant parameters for the classification of biomolecular structure by machine learning methods	  	Andrea Lombardi (+39 0766855511) <i>andrea.lombardi@unipg.it</i>
Renewable materials	Development of methods of storage of small gas molecules by adsorption (CO ₂ / CH ₄ /H ₂) on various types of carbon-nanostructures using semi-empirical potentials relating to the formulation of the Van der Waals (vdW) intermolecular interaction	  	Noelia Faginas Lago (+39 0755855527) <i>noelia.faginaslago@unipg.it</i>
Catalysis	Development of homogeneous and heterogeneous catalysts to facilitate the production and storage of fuels from renewable sources and for energy storage	  	Alceo Macchioni (+39 3404778271) <i>alceo.macchioni@unipg.it</i>
Catalysis	Mechanistic study and optimization of catalytic processes through quantum chemical simulations and machine learning techniques. Development of computational models and protocols for applications in catalysis	  	Giovanni Bistoni (+39 3791928461) <i>giovanni.bistoni@unipg.it</i>
Nanomaterials	Moledding and simulation of carbon membranes for CO ₂ separation	  	Noelia Faginas lago (+39 0755855511) <i>noelia.faginaslago@unipg.it</i>
Polymers	Synthesis, characterization and application of catalytic systems for olefin polymerization and plastic depolymerization	  	Cristiano Zuccaccia (+39 0755855578) <i>cristiano.zuccaccia@unipg.it</i>
Biological markers	Identification of new biological markers in cancer and mendelian diseases	  	Paolo Gorello <i>paolo.gorello@unipg.it</i>
Medicinal mushrooms	Bioactivity and mycochemical profile of medicinal mushrooms cultivated on different agri-food byproducts	  	Paola Angelini (+39 0755857346) <i>paola.angelini@unipg.it</i>
Protein hydrolysates	Production of Protein Hydrolysates from waste biomasses to create high-added value products	  	Carla Emiliani <i>carla.emiliani@unipg.it</i>
Chemo-prevention	Valorisation of molecules with anti-tumour activities from agro-food chain wastes	  	Patrizia Rosignoli (+39 0755857336) <i>patrizia.rosignoli@unipg.it</i>
Biomass	Carbon-based materials derived from biomass waste	  	Assunta Marrocchi (+39 0755855536) <i>assunta.marrocchi@unipg.it</i>
Drug discovery	Design, synthesis and optimization of organic compounds endowed with anticancer and antiviral drugs	  	Laura Goracci (+39 0755855632) <i>laura.goracci@unipg.it</i>
Ionic channels	Role of ion channels in cell volume regulation, migration, and invasion of glioblastoma cells, underlying tumor malignancy	  	Luigi Catacuzzeno (+39 0755855755) <i>luigi.catacuzzeno@unipg.it</i>

Tissue engineering	Development of tissue engineering models with stem cells and biomaterials	  	Sabata Martino <i>sabata.martino@unipg.it</i>
Ionic channels	Use of electrophysiology and molecular dynamics techniques to study the gating and selectivity of ion channels	  	Luigi Catacuzzeno (+39 0755855758) <i>luigi.catacuzzeno@unipg.it</i>
Contaminant analysis	Quantification of essential and toxic elements in environmental matrices (soil, water, vegetal biomass, selected animal tissues, particulate matter)	  	David Cappelletti (+39 0755855528) <i>david.cappelletti@unipg.it</i>
Aptamers	Development of aptamers through computational systems	  	Francesco Morena <i>francesco.morena@unipg.it</i>
Polaritonic chemistry	Use of quantum electromagnetic fields to control properties and chemical processes in molecular systems	  	Enrico Ronca <i>enrico.ronca@unipg.it</i>
Biochemical assays	Development of biochemical assays for monitoring enzymatic activity and antibodies in biological samples of patients with genetic diseases after gene therapy	  	Sabata Martino <i>sabata.martino@unipg.it</i>
Metabolomics	Metabolomic profile from biological samples	  	Gabriele Cruciani (+39 0755855629) <i>gabriele.cruciani@unipg.it</i>
Nanomaterials	Synthesis of inorganic nanostructured microporous materials for gas sorption/separation and catalysis	  	Ferdinando Costantino (+39 0705855563) <i>ferdinando.costantino@unipg.it</i>
Insect-environment interaction	Sensory biology and attachment ability of insects	  	Manuela Rebora (+39 0755855722) <i>manuela.rebora@unipg.it</i>
ADME	Prediction and experimental evaluation of ADME properties of chemical compounds	  	Gabriele Cruciani (+39 0755855629) <i>gabriele.cruciani@unipg.it</i>
Organometallic chemistry	Synthesis of organometallic and coordination compounds for mechanistic investigations on stoichiometric and catalytic small molecule activation reactions	  	Luca Rocchigiani (+39 0755855577) <i>luca.rocchigiani@unipg.it</i>
Artificial intelligence	Artificial intelligence for the automatic identification of impurities in synthetic processes	  	Gabriele Cruciani (+39 0755855629) <i>gabriele.cruciani@unipg.it</i>
Photovoltaic	Characterization and optimization of hybrid organic/inorganic materials for photovoltaics using computational simulations	  	Francesca Nunzi (+39 0755855607) <i>francesca.nunzi@unipg.it</i>
Enzymatic immobilisation	Enzyme Immobilization for industrial and biomedical application	  	Carla Emiliani <i>carla.emiliani@unipg.it</i>
Atmospheric modelling	Investigation into the transport and transformation of atmospheric pollutants	  	Stefano Crocchianti (+39 0755855515) <i>stefano.crocchianti@unipg.it</i>

OTHER R&D ORGANIZATIONS

SMAArt Centre of Excellence (Scientific Methodologies applied to Archaeology and Art)

S.M.A.Art is a Centre of research and education of the University of Perugia devoted to develop activities such as to promote the co-operation between human and physical sciences; to offer academic and research Institutions, dedicated to the study and preservation of national and European cultural heritage, an integrated body of resources and competence in both historical and scientific fields; to create, through research, new highly-qualified professional figures with a knowledge on the cultural heritage also from the point of view of materials and their properties; to develop new investigation methods and portable instruments for non-destructive in situ studies

Contacts: Aldo Romani (+39 0755855620)

Web site: <https://smaart.unipg.it/en/>

Istituto CNR di Scienze e Tecnologie Chimiche "Giulio Natta" (CNR-SCITEC)

"SCITEC in Perugia carries out research activities aimed at developing knowledge and technologies in the field of materials science relating to the following topics: computational methods for predictive modeling of processes and functionality of materials in photovoltaic, optoelectronics and catalysis applications; chemical methodologies and technologies for the knowledge, conservation and protection of our cultural heritage

Contacts: Laura Cartechini (+39 0755855645)

Simona Fantacci (+39 0755855522)

Web site: <https://www.scitec.cnr.it/en/>

COLLABORATIONS WITH COMPANIES

- Italmatch Chemicals S.p.A.
- Master-tec S.r.l.

PUBBLICAZIONI

- Valença Ferreira de Aragão E, Mancini L, Faginas-Lago N, Rosi M, Skouteris D, Pirani F., **"Semiempirical Potential in Kinetics Calculations on the HC3N + CN Reaction"**, Molecules. 2022; 27(7):2297. <https://doi.org/10.3390/molecules27072297>



SUSCHEM^{IT}



Dipartimento di Scienze e Tecnologie Chimiche

GENERAL INFORMATION

Università degli Studi di Roma "Tor Vergata"
Department of Chemical Sciences and Technologies
Via della Ricerca Scientifica 1 - 00133 Roma (RM)
sito web: <http://www.stc.uniroma2.it>

CONTACTS

Prof.ssa Valeria CONTE
+39 0672594014

DETAILED INFORMATION

Staff: 14 Full Professors
28 Associate Professors
17 Researchers
9 Structured Technicians
5 Administrative Technicians
Registered students: 470 (Academic year 2022/2023)
Post Lauream Training: 24 enrolled in doctoral programs in Chemical Science
33 enrolled in doctoral programs in Materials for Sustainable Development
25 Research fellows
4 fellows
Patents: 28 Licensing list

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Pollution reduction	Porphyrinoids based Chemical Sensors							Roberto Paolesse (+39 0672594752) paolesse@uniroma2.it
Health	Structural and dynamic characterization of synthetic polymers by molecular modeling methods							Ester Chiessi (+39 0672594462) ester.chiessi@uniroma2.it
Alternative energies	Functionalization of carbon based materials (fullerenes, graphene and carbon nanospheres) for photovoltaic cells							Pietro Tagliatesta (+39 0672594759) pietro.tagliatesta@uniroma2.it
Health	DNA Sensors for clinical applications							Francesco Ricci (+39 0672594422) francesco.ricci@uniroma2.it
Nutrition	Immunosensors development for food field applications							Giulia Volpe (+39 0672594411) giulia.volpe@uniroma2.it
SSbD	Sustainable Catalytic Oxidations and Bromination							Pierluca Galloni (+39 0672594380) galloni@scienze.uniroma2.it

CRM	Synthesis of tungsten monocarbide powders	  	Riccardo Polini (+39 0672594414) <i>polini@uniroma2.it</i>
Health	Bioactive peptides aggregation studies. Antibacterial coating with antimicrobial peptides	  	Mariano Venanzi (+39 0672594468) <i>venanzi@uniroma2.it</i>
Alternative energies	Diamond-base devices for current generation under concentrate solar power	  	Riccardo Polini (+39 0672594414) <i>polini@uniroma2.it</i>
Alternative energies	Electrochemical materials and devices for energy production and storage (fuel cells, flow batteries)	  	Silvia Licoccia (+39 0672594386) <i>licoccia@uniroma2.it</i>
Environmental sensors	Synthesis and reactivity of porphyrins and corroles	  	Manuela Stefanelli (+39 0672594732) <i>manuela.stefanelli@uniroma2.it</i>
Biodegradability	Biobased, biodegradable and compostable plastics	  	Emanuela Gatto (+39 0672594469) <i>emanuela.gatto@uniroma2.it</i>
Health	Design of polymer-structured micro and nanosystems for diagnostics and controlled drug release	  	Gaio Paradossi (+39 0672594464/4454) <i>paradossi@stc.uniroma2.it</i>
Ecological transition	Development of sustainable electrodes for solar cells	  	Emanuela Gatto (+39 0672594469) <i>emanuela.gatto@uniroma2.it</i>
Health	Synthesis of porphyrin analogues	  	Sara Nardis (+39 0672594732) <i>nardis@scienze.uniroma2.it</i>
Nanotechnologies	Development of electrochemical sensors modified with nanomaterials	  	Fabiana Arduini (+39 0672594404) <i>fabiana.arduini@uniroma2.it</i>
Cultural heritage	Development of new monitoring methods for cultural heritage	  	Laura Micheli (+39 0672594420) <i>laura.micheli@uniroma2.it</i>

OTHER R&D ORGANIZATIONS

Centro NAST	Nanosciences, Nanotechnology and Advanced Instrumentation in Multidisciplinary Applications Contacts: Silvia Licoccia (+39 0672594386) - licoccia@uniroma2.it Web site: http://centronast.it
SENSORGROUP- Laboratorio Sensori	Developing chemical sensor matrices for food, environmental and medical diagnostic applications Contacts: Roberto Paolesse (+39 0672594752) - paolesse@uniroma2.it Web site: http://sensorsgroup.eln.uniroma2.it

COLLABORATIONS WITH COMPANIES

More information

PUBBLICAZIONI

- R. Salvio et al, Inorganica Chimica Acta 2021, 522, 120288
- A. Operamolla et al, ACS Appl. Mater. Interfaces 2021, 13, 37, 44972–44982
- R. Polini et al, ACS Sustainable Chem. Eng. 2021, 9, 25, 8458–8466
- E. Gatto et al, "Plastica compostabile a base di proteine del latte e relativo processo di preparazione", Italian Patent N. 10202000029684 (granted on 15/12/2022)
- V. Caratelli et al, J. Mater. Chem. B 2022, 10, 9021-9039
- W. Da Silva Freitas et al, J. Power Sources 2022, 550, 232135
- J. Montero et al, ChemElectroChem 2023, 10, e202201002

MORE INFO

"The Department of Chemical Sciences and Technologies (DSTC) is strongly active on the front of the TM, for both the economic enhancement of knowledge (spin-offs and industry funded research grants), and for the support provided to the society, in order to increase its cultural and social well-being.

The DSCT supports and has supported the industrial activity through the development of new products, processes and analytical methods for small, medium and large national and international companies and consortia.

In many cases the collaboration between companies and DSTC has led to the development and commercialization of innovative processes and products, as well as international patents."



GENERAL INFORMATION

Università degli Studi di Salerno

Department of Chemistry and Biology "A. Zambelli"

Via Giovanni Paolo II, 132 - 84084 Fisciano (SA)

sito web: <https://www.dcb.unisa.it/en>

CONTACTS

Prof. Carmine CAPACCHIONE

+39 089969413

DETAILED INFORMATION

Staff: 14 Full Professors

32 Associate Professors

12 Researchers

4 Structured Technicians

15 Administratives

Registered students: 900(A.A. 2022/2023)

Post Lauream Training: 49 enrolled in doctoral programs in Chemical biological and environmental sciences

15 Research fellows

20 fellows

Patents: 10

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Organocatalysis

Synthesis of biodegradable polyesters by copolymerization of epoxides and anhydrides by organocatalysis



Mina Mazzeo (+39 089969566)
mmazzeo@unisa.it

Flow chemistry

Study of new processes in flow for the preparation of intermediates and compounds with potential pharmaceutical applications



Irene Izzo (+39 089969560)
iizzo@unisa.it

Vitrimeri

Polyester networks



Mina Mazzeo (+39 089969566)
mmazzeo@unisa.it

Organic synthesis

Synthesis of cyclic peptides and peptoids; complexing and catalytic properties, applications in organic synthesis



Francesco De Riccardis (+39 089969552)
dericca@unisa.it

Environmental monitoring

Developing innovative platforms for environmental monitoring and ecological assessment



Daniela Baldantoni (+39 089969542)
dbaldantoni@unisa.it

Ecosystem management

Fostering circular economy and fighting desertification through biowaste valorization



Daniela Baldantoni (+39 089969542)
dbaldantoni@unisa.it

Depolymerisation

Chemical depolymerization of waste plastics



Mina Mazzeo (+39 089969566)
mmazzeo@unisa.it

Sustainable catalysis	Development of sustainable catalytic processes for the synthesis of bioactive compounds and building blocks in optically active form	  	Alessandra Lattanzi (+39 089969563) <i>lattanzi@unisa.it</i>
Green chemistry	Valorization of biobased chemicals obtained from biomasses and waste biomasses	  	Raffaele Cucciniello (+39 089969575) <i>rcucciniello@unisa.it</i>
Sustainability	Synthesis of oleochemicals and polymers from renewable sources through olefin metathesis reactions	  	Fabia Grisi (+39 089969557) <i>fgrisi@unisa.it</i>
Organic synthesis	Synthesi of biologically active natural products and their analogues	  	Irene Izzo (+39 089969560) <i>iizzo@unisa.it</i>
Biodiversity	Understanding biodiversity and its drivers to preserve ecosystem functioning and dynamics	  	Daniela Baldantoni (+39 089969542) <i>dbaldantoni@unisa.it</i>
Ecological restoration	Forecasting ecological restoration actions outcomes through ecological modelling	  	Daniela Baldantoni (+39 089969542) <i>dbaldantoni@unisa.it</i>
Biobased polymers	Synthesis of new polymeric materials by using as starting monomer terpenes derived from biomass	  	Carmine Capacchione (+39 089969543) <i>ccapacchione@unisa.it</i>
Biopolymers	Synthesis of catalytic systems for the production of biodegradable polyesters and polycarbonates, deriving from renewable sources	  	Marina Lamberti (+39 089969562) <i>mlamberti@unisa.it</i>
LCA	Life cycle assessment	  	Raffaele Cucciniello (+39 089969575) <i>rcucciniello@unisa.it</i>

OTHER R&D ORGANIZATIONS

Thermal Analysis Laboratory	Contacts: Ivano Immediata (+39 089969540) - iimedia@unisa.it Web site: https://www.dcb.unisa.it/dipartimento/strutture?id=66
X-ray Diffraction Laboratory	Contacts: Ivano Immediata (+39 089969540) - iimedia@unisa.it Web site: https://www.dcb.unisa.it/dipartimento/strutture?id=68
Nuclear Magnetic Resonance Laboratory	Contacts: Patrizia Oliva (+39 089969574) - poliva@unisa.it Web site: https://www.dcb.unisa.it/dipartimento/strutture?id=275
Mass Spectrometry Laboratory	Contacts: Patrizia Iannece (+39 089969377) - piannece@unisa.it Web site: https://www.dcb.unisa.it/dipartimento/strutture?id=258

COLLABORATIONS WITH COMPANIES

- 4Achem S.r.l.
- AOP4Water S.r.l.
- Bio Valore World S.r.l.
- Bi-QEM S.p.A.
- Bracco S.p.A.
- Chiesi Farmaceutici S.p.A.
- Cleprin S.r.l.
- ENI S.p.A.
- Lete S.p.A.
- Merck S.p.A.
- Nano Active Film S.r.l.
- Pirelli S.p.A.
- Prometeon Tyre Group S.r.l.
- Prysmian Group S.p.A.
- Recordati Industria Chimica e Farmaceutica S.p.A.

PUBBLICAZIONI

- <https://pubs.acs.org/doi/10.1021/acs.macromol.9b02646>
- <https://pubs.acs.org/doi/10.1021/acs.macromol.2c00719>
- <https://pubs.acs.org/doi/10.1021/acs.macromol.8b01044>
- <https://www.sciencedirect.com/science/article/pii/S2213343721017796?via%3Dihub>
- <https://pubs.acs.org/doi/10.1021/acs.joc.1c01794>
- <https://pubs.acs.org/doi/10.1021/acsomega.1c01133>
- <https://onlinelibrary.wiley.com/doi/10.1002/mame.202200500>

GENERAL INFORMATION

Università degli Studi di Salerno

Department of Pharmacy

Via Giovanni Paolo II 132 - 84084 Fisciano (SA)

sito web: <https://www.difarma.unisa.it/en>

CONTACTS

Prof. Pietro CAMPIGLIA

+39 089969242

DETAILED INFORMATION

Staff: 19 Full Professors

42 Associate Professors

30 Researchers

6 Structured Technicians

13 Administrative Technicians

Registered students: 1,714 (Academic year 2022/2023)

Post Lauream Training: 38 enrolled in doctoral programs in Drug Sciences

6 enrolled in II level Master in Microbiological controls: quality and safety in production processes

6 enrolled in II level Master in Radiopharmaceutical Management

23 Research fellows

33 fellows

Patents: 6 <https://web.unisa.it/terza-missione/trasferimento-tecnologico/proprieta-intellettuale/portafoglio-brevetti>

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Green extraction

Development of environmentally friendly extraction methods and metabolomics approaches for the exploration of plant matrices as source of bioactive compounds



Sonia Piacente (+39 089969763)
piacente@unisa.it

Drug delivery

Innovative pharmaceutical technologies for the delivery of synthetic and natural bioactive compounds



Pasquale Del Gaudio (+39 089969247)
pdelgaudio@unisa.it

Analytical methods

Development of advanced analytical methods for the determination of polar metabolites, xenobiotics, and microplastics



Carlo Crescenzi (+39 089969746)
carlo.crescenzi@unisa.it

Biodiversity

Food Chemistry, Nutraceuticals and Biodiversity



Luca Rastrelli (+39 089969766)
rastrelli@unisa.it

NMR

Structural studies on drug-DNA interactions by advanced NMR techniques, Molecular Docking and Molecular Dynamics Simulations



Giuseppe Bifulco (+39 089969741)
bifulco@unisa.it

Natural products

Identification of bioactive compounds from natural matrices



Nunziatina De Tommasi (+39 089969754)
detommasi@unisa.it

Health products	Green technologies and micro algae for health and agricultural products	     	Rita Patrizia Aquino (+39 089969737) <i>aquinorp@unisa.it</i>
Artificial intelligence	Development of computational models for drugs and biomaterials design	     	Stefano Piotto (+39 089969795) <i>piotto@unisa.it</i>
Drug discovery		     	Agostino Casapullo (+39 089969243) <i>casapullo@unisa.it</i>
Small molecules	Design and synthesis of biologically active "small molecules"	     	Gianluca Sbardella (+39 089969770) <i>gsbardella@unisa.it</i>
Peptides	Design and Synthesis of Peptides and Peptidomimetics	     	Anna Maria D'Ursi (+39 089969748) <i>dursi@unisa.it</i>
Officinal plants	Chemical and biological study of medicinal and food plants	     	Vincenzo De Feo (+39 089969751) <i>defeo@unisa.it</i>
Nutrition	Study of nutritional molecular processes	     	Mario Felice Tecce (+39 089969772) <i>tecce@unisa.it</i>
Multi-Omics	Omics-Based Strategies in Precision Medicine	     	Pietro Campiglia (+39 089969242) <i>pcampiglia@unisa.it</i>

OTHER R&D ORGANIZATIONS

Preclinical Experimentation Laboratory	The Preclinical Experimentation Laboratory aims to support the scientific activity of university researchers working in the field of life sciences, allowing them to carry out "in vivo" research in compliance with CEE directives of D.L. 26/2014, and according to the international standards of "Good Laboratory Practice". The Laboratory provides users with structures, personnel, basic equipment for keeping animals and for experimental procedures. The Laboratory, compatibly with institutional tasks, may also carry out activities on behalf of third parties by entering into agreements or contracts in compliance with current legislation Contacts: Secretariat (+39 089969764)
Observatory on the Parks and Protected Areas, Laboratories, Libraries, Multimedia Classrooms	The center proposes to integrate the development of the Third Mission with the territorial competences of the Parks by carrying out research and training activities in the context of the government and management of parks and protected areas Web site: https://www.difarma.unisa.it/dipartimento/strutture?id=394
Pharmanomics	Interdepartmental Center for Research in Pharmaceutical Technologies and Pharmacoeconomics - The formula of the Interdepartmental Center (Department of Pharmacy, Department of Medicine, Surgery and Dentistry, Department of Business Sciences - Management & Innovation System) represents a suitable structural and organizational solution for implementing an interdisciplinary network between departments. In particular, researchers and experts of the University of Salerno, through the Interdepartmental Center, are encouraged to promote the scientific debate at the local level and to extend it to national and international level, in line with national and European Community guidelines Contacts: Secretariat (+39 089969151) Web site: https://www.pharmanomics.unisa.it/en

COLLABORATIONS WITH COMPANIES

Active agreements for job placement:

- Alfa Instruments S.r.l.
- Analisis S.r.l.
- Anseris Pharma S.r.l.
- Aphros Cosmetics
- Aqua Biotech S.r.l.
- ATM Service S.r.l.
- Biocentro S.r.l.
- Evra S.r.l. Società Benefit
- Fisiopharma S.r.l.
- Fondazione Telethon ETS
- Franzese S.p.A.
- Genelife S.r.l.
- Genetic S.p.a.
- Herbelia Cosmetici S.r.l.
- Hosmotic S.r.l.
- Laboratori Nutriphyt S.r.l.
- Magipharma S.r.l.
- NEILOS S.r.l.
- Pharmatec S.r.l.
- Renée Blanche S.r.l.
- Svas Biosana S.p.A.
- Teina Adam
- Zafferano Lucano

Active agreements for Phd program:

- Angelini Pharma S.p.A.
- Arterra Bioscience
- EPI-C S.r.l.
- Home Medicine Italia S.r.l.
- Hosmotic S.r.l.
- ImmunePharma S.r.l.
- Laboratori Biokyma S.r.l.
- Merck Italia
- Nippon Gases Industrial S.r.l.
- Nutriphyt srl, Paolillo S.r.l.
- SCAl Lab S.r.l.
- Shedir Pharma S.r.l.
- SmartVase S.r.l.
- Soft-Mining-an artificial intelligence (AI)-powered drug discovery company
- Spectra 2000 S.r.l. Parte di R&D Chemicals Group S.r.l.
- Tescan Brno
- Theorem@ S.r.l.

PUBBLICAZIONI

- Anseris Pharma S.r.l., Journal of Cardiovascular Development and Disease, 10.3390/jcdd9120423
- DODACO S.r.l., Antioxidants, 10.3390/antiox9050378
- Centrale del Latte di Salerno, Journal of Functional Foods, 10.1016/j.jff.2016.08.021
- San Salvatore, Food Research International, 10.1016/j.foodres.2017.12.038
- Felix S.r.l., International Journal of Molecular Sciences, 10.3390/ijms20236087
- Coppola S.p.a., Food Chemistry, 10.1016/j.foodchem.2012.10.023
- EPO S.r.l., Biomedicine & Pharmacotherapy, <https://doi.org/10.1016/j.biopha.2020.110670>



GENERAL INFORMATION

Università degli Studi di Sassari
Department of Agriculture
 Viale Italia 39 - 07100 Sassari (SS)
 sito web: <https://www.agrariaweb.uniss.it/en>

CONTACTS

Prof. Pier Paolo ROGGERO
 +39 079229226

DETAILED INFORMATION

Staff: 18 Full Professors
 32 Associate Professors
 35 Researchers
 3 Technologists
 49 Structured and Administrative Technicians
Registered students:
Post Lauream Training: 48 enrolled in doctoral programs
 21 Research fellows
 51 fellows
Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Remediation	Use of organic and inorganic soil amendments for the recovery of soils contaminated by Potentially Toxic Elements (PTE)	 	   	Maria Vittoria Pinna (+39 079229349) <i>mavi@uniss.it</i>
Remediation	Biological strategies for the recovery of contaminated soils and waters	 	   	Giovanni Garau (+39 079229210) <i>ggarau@uniss.it</i>
Remediation	Development of protocols for the management and use of microorganisms and pedofauna for the recovery of degraded areas	 	   	Stefania Diquattro (+39 079229213) <i>sdiquattro@uniss.it</i>
Recycling	Study of the evolution of organic matter during the composting process of waste biomasses	 	   	Paola Castaldi (+39 079229214) <i>castaldi@uniss.it</i>

OTHER R&D ORGANIZATIONS

Laboratory of Agricultural Biochemistry | **Contacts:** Maria Vittoria Pinna (+39 079229349) - *mavi@uniss.it*

Laboratory of Soil Chemistry | **Contacts:** Maria Vittoria Pinna (+39 079229349) - *mavi@uniss.it*

Laboratory of Instrumental Chemistry (Spectroscopy and Potentiometry) | **Contacts:** Matteo Garau (+39 079229348) - *matteo_gp@libero.it*

Laboratory of Chromatography | **Contacts:** Gian Paolo Lauro (+39 079229215) - *gplauro@uniss.it*



GENERAL INFORMATION

Università degli Studi di Siena
Department of Biotechnology, Chemistry and Pharmacy
Via Aldo Moro 2 - 53100 Siena (SI)

CONTACTS

Prof.ssa Agnese MAGNANI
+39 0577232108

DETAILED INFORMATION

Staff: 8 Full Professors

38 Associate Professors

17 Researchers

19 Structured Technicians

4 Administrative Technicians

Registered students: 1,228 (Academic year 2021/2022)

Post Lauream Training:

104 enrolled in Doctorates in Biochemistry & Molecular Biology (BiBiM2.0), Chemical & Pharmaceutical Sciences

41 enrolled in Masters

10 fellows

Patents: 22

OTHER R&D ORGANIZATIONS

**R2ES Lab - Research on
Renewable Energy and
Sustainability**

Contacts: info@r2eslab.com

Web site: <http://www.r2eslab.com>



SUSCHEM^{IT}



GENERAL INFORMATION

Università degli Studi di Torino

Department of Chemistry

Via Pietro Giuria 7 - 10125 Torino (TO)

sito web: <https://www.chemistry.unito.it/do/home.pl>

CONTACTS

Prof. Lorenza OPERTI

+39 0116707510

DETAILED INFORMATION

Staff: 24 Full Professors

46 Associate Professors

31 Researchers

16 Research Technicians

Registered students: 1,868 (Academic year 2021/2022)

Post Lauream Training: 101 enrolled in Doctorates in Chemistry and Industrial Chemistry

32 Research fellows

23 fellows

Patents: -

OTHER R&D ORGANIZATIONS

C3S

Competence Centre for Scientific Computing

Contacts: Lorenzo Maschio (+39 0116707564) - lorenzo.maschio@unito.it

Web site: <https://c3s.unito.it/>

"G. Scansetti" Centre

"G. Scansetti" Interdepartmental Centre for Studies on Asbestos and Other Toxic Particulates

Contacts: Francesco Turci (+39 0116707566) - francesco.turci@unito.it

Web site: <http://www.centroscansetti.unito.it>

CrisDi

Center for Crystallography

Contacts: Domenica Marabello (+39 0116707505) - domenica.marabello@unito.it

Web site: <http://www.crisdi.unito.it>

ICxT

Interdepartmental Center for the innovation

Contacts: Claudia Barolo (+39 0116707594) - claudia.barolo@unito.it

Web site: <https://icxt.di.unito.it/>

NIS

Interdepartmental Center and INSTM Reference Centre

Contacts: Gabriele Ricchiardi (+39 011 6707503) - gabriele.ricchiardi@unito.it

Web site: <http://www.nis.unito.it>



GENERAL INFORMATION

University of Torino

Department of Life Sciences and Systems Biology

Via Accademia Albertina 13 - 10123 Torino (TO)

sito web: <http://www.dbios.unito.it>

CONTACTS

Prof.ssa Consolata SINISCALCO

+39 0116704506

DETAILED INFORMATION

Staff: 14 Full Professors

37 Associate Professors

27 Researchers

47 Structured Technicians

Registered students: 3.535 (Academic Year 2021-2022)

Post Lauream Training: 53 enrolled in Doctorates in Biological Sciences and Applied Biotechnologies, Pharmaceutical and Biomolecular Sciences, Complex Systems for Life Sciences, Neuroscience, Experimental Medicine and Therapy, Psychological, Anthropological Educational Sciences

24 Research fellows

36 fellows

Patents: 39 (period 2000-2022)

OTHER R&D ORGANIZATIONS

**MYCOTHECA UNIVERSITATIS
TAURINENSIS**

Mycoteca of the University of Turin

Contacts: Giovanna Cristina Varese (+39 0116705984) - cristina.varese@unito.it

Web site: <https://www.tucc-database.unito.it/mut>



GENERAL INFORMATION

Università degli Studi di Trento
Department of Industrial Engineering
 Via Sommarive 9 - 38123 Trento (TN)
 sito web: <https://www.dii.unitn.it/en>

CONTACTS

Prof. Alessandro PEGORETTI
 +39 0461282500 / +39 0461282503

DETAILED INFORMATION

Staff: 15 Full Professors
 27 Associate Professors
 8 Researchers
 17 Structured Technicians
 9 Administrative Technicians
Registered students: 1,056 (Academic year 2022/2023)
Post Lauream Training: 86 enrolled in the Doctorate in Materials, Mechatronics and Systems Engineering
 34 Research fellows
 24 fellows
Patents: 4

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Recycling	Plastic materials recycling	 	   	Alessandro Pegoretti (+39 0461282452) <i>alessandro.pegoretti@unitn.it</i>
Batteries	Materials for lithium ions batteries	 	   	Gian Domenico Sorarù (+39 0461282454) <i>giandomenico.soraru@unitn.it</i>
SOFC-SOEC	Materials for solid oxide fuel cells (SOFC)	 	   	Vincenzo M. Sglavo (+39 0461282468) <i>vincenzo.sglavo@unitn.it</i>
Sintering	Advanced processes for ceramics production (cold sintering, flash sintering and UHS)	 	   	Vincenzo M. Sglavo (+39 0461282468) <i>vincenzo.sglavo@unitn.it</i>
Stoccaggio energia	Materials for thermal energy storage (TES)	 	   	Alessandro Pegoretti (+39 0461282452) <i>alessandro.pegoretti@unitn.it</i>
Photoactive materials	Synthesis and characterization of photoactive materials	 	   	Francesco Parrino (+39 0461285295) <i>francesco.parrino@unitn.it</i>
Piezoelectric	Sol-gel synthesis of nanoparticles and coatings for piezoelectric nanocomposites and photodetectors	 	   	Sandra Dirè (+39 0461282456) <i>sandra.dire@unitn.it</i>
Waste recovery	Recovery of industrial wastes for the production of ceramics and glasses	 	   	Vincenzo M. Sglavo (+39 0461282468) <i>vincenzo.sglavo@unitn.it</i>

Oxidation	Advanced oxidation processes	     	Francesco Parrino (+39 0461285295) <i>francesco.parrino@unitn.it</i>
Perovskites	Synthesis of perovskites by reverse micelles route	     	Riccardo Ceccato (+39 0461282466) <i>riccardo.ceccato@unitn.it</i>
Photocatalysis	Green photocatalytic synthesis of high added value industrial compounds	     	Francesco Parrino (+39 0461285295) <i>francesco.parrino@unitn.it</i>
Nanopowders	Synthesis of innovative calcium-phosphates nano-powders from natural sources	     	Vincenzo M. Sglavo (+39 0461282468) <i>vincenzo.sglavo@unitn.it</i>
DSSC cells	DSSC cells	     	Riccardo Ceccato (+39 0461282466) <i>riccardo.ceccato@unitn.it</i>
Aerogel	Aerogel in the Si-C-N-O system	     	Gian Domenico Sorarù (+39 0461282454) <i>giandomenico.sorarù@unitn.it</i>

COLLABORATIONS WITH COMPANIES

The Department has several partnerships with Italian and foreign companies on research and development projects regarding materials technology, mechatronics and system engineering

PUBBLICAZIONI

- Pegoretti, A, **Material circularity in rubber products** in EXPRESS POLYMER LETTERS, v. 17, n. 4 (2023), p. 352-352. - DOI: 10.3144/expresspolymlett.2023.25
- Sandra Dirè, Taffelli, Alberto; Ligorio, Giovanni; Panzeri, Lucio; Quaranta, Alberto; Ceccato, Riccardo; Chiappini, Andrea; Nardi, Marco Vittorio; List-Kratochvil, Emil J. W.; Dirè, Sandra, **Large area MoS₂ films fabricated via sol-gel used for photodetectors** in OPTICAL MATERIALS, v. 135, (2023), p. 113257.1-113257.8. - DOI: 10.1016/j.optmat.2022.113257
- Zorzi, V.; Berardinelli, A.; Gozzi, G.; Ragni, L.; Vannini, L.; Ceccato, R.; Parrino, F., **Combined effect of atmospheric gas plasma and UVA light: A sustainable and green alternative for chemical decontamination and microbial inactivation of fish processing water** in CHEMOSPHERE, v. 317, (2023), p. 137792. - DOI: 10.1016/j.chemosphere.2023.137792
- Dirè, S.; Callone, E.; Ceccato, R.; Parrino, F.; Di Credico, B.; Mostoni, S.; Scotti, R.; D'Arienzo, M., **Structural effects of TiO₂ nanoparticles in photocurable ladder-like polysilsesquioxane nanocomposites** in JOURNAL OF SOL-GEL SCIENCE AND TECHNOLOGY, v. 2023, (2023). - DOI: 10.1007/s10971-023-06127-5
- Galotta, Anna; Sglavo, Vincenzo Maria, **The cold sintering process: A review on processing features, densification mechanisms and perspectives** in JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, v. 41, n. 16 (2021), p. 1-17. - DOI: 10.1016/j.jeurceramsoc.2021.09.024
- Zambotti, A.; Ionescu, E.; Gargiulo, N.; Caputo, D.; Vakifahmetoglu, C.; Santhosh, B.; Biesuz, M.; Soraru, G. D., **Processing of polymer-derived, aerogel-filled, SiC foams for high-temperature insulation** in JOURNAL OF THE AMERICAN CERAMIC SOCIETY, v. 106, n. 8 (2023), p. 4891-4901. - DOI: 10.1111/jace.19118
- Valentini, F.; Roux, Jc; Lopez-Cuesta, Jm; Fambri, L.; Dorigato, A; Pegoretti, A, **Fire behaviour of EPDM/NBR panels with paraffin for thermal energy storage applications. Part 1: Fire behaviour** in POLYMER DEGRADATION AND STABILITY, v. 207, (2023), p. 110240. - DOI: 10.1016/j.polymdegradstab.2022.110240



UNIVERSITÀ DEGLI STUDI DI TRIESTE



GENERAL INFORMATION

Università degli Studi di Trieste

Department of Life Sciences

Via Weiss 2 (Palazzina Q) - 34128 Trieste (TS)

sito web: <http://dsv.units.it/>

CONTACTS

Prof. Mauro TRETIAH

+39 0405588788

DETAILED INFORMATION

Staff: 14 Full Professors

35 Associate Professors

31 Researchers

9 Structured Technicians

20 Administrative Technicians

Registered students: 1,860 (Academic year 2020/2021)

Post Lauream Training: 87 enrolled in Doctoral programs

13 students of the Specialization School

30 Research fellows

Patents: 19



GENERAL INFORMATION

Università degli Studi di Trieste

Department of Chemical and Pharmaceutical Sciences

Via Licio Giorgieri 1 - 34127 Trieste (TS)

sito web: <http://dscf.units.it/eng>

CONTACTS

Prof. Paolo TECILLA

+39 0405583904

DETAILED INFORMATION

Staff: 13 Full Professors

25 Associate Professors

16 Researchers

1 Technologist

11 Structured Technicians

9 Administrative Technicians

Registered students: 887 (Academic year 2022/2023)

Post Lauream Training: 54 enrolled in doctoral programs in Chemistry and Nanotechnologies

8 Research fellows

Patents: 2

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Cheminformatics

Computational pipelines to design new bioactive compounds and identify putative targets for drugs and natural compounds



Emanuele Carosati (+39 0405583671)
emanuele.carosati@units.it

Materials

Design and development of materials for electrocatalysis and photocatalytic organic synthesis



Michele Melchionna (+39 0405583940)
melchionnam@units.it

Functional materials

Synthesis of chromophores for catalytic solar hydrogen production. Synthesis and study of redox switches and their subsequent implementation in polymeric materials.



Jacopo Dosso (+39 3714320384)
jacopo.dosso@units.it

Crystal engineering

Synthesis and characterization of nanoporous/elastic/polar crystals and development of artificial receptors for biologically active molecules



Silvano Geremia (+39 0405583936)
sgeremia@units.it

Photocatalysis

Design and development of molecular and nanostructured catalysts for the photo- and electrocatalytic activation and conversion of small molecules to fuels and value-added chemicals



Federico Franco (+39 0405583922)
federico.franco@units.it

Biobased chemistry

Design, synthesis and/or production of new polymers, materials from renewable sources and biomass. Integration of chemoenzymatic and computational methods for the eco-design of biodegradable polymers and study of the impact at marine level



Lucia Gardossi (+39 0405583103)
gardossi@units.it

Functional materials

Carbon nanostructures for bioapplication and for materials applications



Tatiana Da Ros (+39 0405583597)
daros@univ.trieste.it

Biosensors	Design, synthesis and evaluation of peptides and polymeric materials as biosensors transducers for the quality control in agrifood		   	Federico Berti (+39 0405583920) <i>fberti@units.it</i>
Functional materials	Developmnet of functional (pharmaceutical and cosmetic) materials through weak supramolecular interactions		   	Dritan Hasa (+39 0405583987) <i>dhasa@units.it</i>
Heterogeneous catalysis	Design and synthesis of materials for energy and environment related catalytic applications		   	Paolo Fornasiero (+39 0405583973) <i>pfornasiero@units.it</i>
Archaeometry	Analysis of archaeological materials, or related to Cultural Heritage, particularly for the identification of biomolecular markers of nutraceutical or psychotropic substances of archaeological significance, the study of paleodiets, and the mobility of ancient populations		   	Enrico Greco (+39 0405583941) <i>enrico.greco@units.it</i>
Plasmonic materials	Development and application of time-dependent theoretical methods for molecular plasmonics and ultrafast spectroscopies		   	Emanuele Coccia (+39 0405583972) <i>ecoccia@units.it</i>
Medical chemistry	Design and synthesis of antifungal and antimycobacterial compounds		   	Maria Grazia Mamolo (+39 0405583724) <i>mamolo@units.it</i>
Natural products	Identification of natural products in plants and synthesis of natural product derivatives with biological activity		   	Cristina Forzato (+39 0405583921) <i>cforzato@units.it</i>
Bioorganic chemistry	Design and synthesis of enzymatic inhibitors with antitumor and antiviral activity		   	Fulvia Felluga (+39 0405583924) <i>ffelluga@units.it</i>
Medical chemistry	Design and development of protein kinase inhibitors		   	Stephanie Federico (+39 0405583671) <i>sfederico@units.it</i>
Heterogeneous catalysis	Synthesis and characterization of nanostructured materials for photothermal and photocatalytic application in the energy field		   	Tiziano Montini (+39 0405583981) <i>tmontini@units.it</i>
Environmental chemistry	Analytical chemistry applied to the determination of metals in the environment (water and sediments) and cultural heritage (paper and monetary artefacts)		   	Gianpiero Adami (+39 0405583996) <i>gadami@units.it</i>
Functional materials	Design and synthesis of hybrid materials for application in biomedicine and material science and study of the relation structure-activity		   	Lucia Pasquato (+39 0405582406) <i>lpasquato@units.it</i>
Biomimetics	Development of biomimetic materials for energy and public health		   	Pierangelo Gobbo (+39 3475812606) <i>pierangelo.gobbo@units.it</i>
Medical chemistry	Design and synthesis of adenosine receptor antagonists		   	Giampiero Spalluto (+39 0405583726) <i>spalluto@units.it</i>
Skin permeation	Skin permeation studies of toxic substances (particularly metallic species) in the context of environmental and occupational health.		   	Matteo Crosera (+39 0405583992) <i>mcrosera@units.it</i>

Supramolecular chemistry	Development of metalcomplex-chromophore conjugates for artificial photosynthesis, photo-catalysis and molecular recognition	     	Elisabetta Iengo (+39 0405583955) <i>eiengo@units.it</i>
Rare diseases	Design and synthesis of GCS inhibitors for the treatment of Gaucher disease	     	Prencipe Filippo (+39 3926675225) <i>filippo.prencipe@units.it</i>
Air quality	Physical, chemical and microbiological characterization and control technologies of aerosols and vapors. Risk assessment and LCA	     	Pierluigi Barbieri (+39 0405583950) <i>barbierp@units.it</i>
Structural biology	3D structural characterization of proteins and complexes via crystallography using synchrotron radiation and cryo-electron microscopy	     	Rita De Zorzi (+39 0405583935) <i>rdezorzi@units.it</i>
Phytomedicine	Development of new formulations containing actives of natural origin	     	Dario Voinovich (+39 0405583106) <i>d.voinovich@units.it</i>
Medical chemistry	Design and synthesis of sigma ligands	     	Daniele Zampieri (+39 04045583677) <i>dzampieri@units.it</i>

OTHER R&D ORGANIZATIONS

Bioaerosol and Air Quality Laboratory (BAQLab)	The laboratory is equipped with sampling and analysis systems for atmospheric particulates and bioaerosols, and for gases. Assemble aerosolization chambers for testing air sanitization technologies Contacts: Sabrina Semeraro (+39 0405583950) - ssemeraro@units.it
Trace Element in the Environment Laboratory (TREELab)	The laboratory is equipped with instrumentation (ICP-AES, ICP-MS, XRF, IC, ...) suitable for the analysis of trace and ultratrace elements in different matrices for research in the environmental, occupational, geochemical and cultural heritage fields Contacts: Gianpiero Adami (+39 0405583991) - gadami@unist.it
Mass Spectrometry Laboratory	The laboratory is equipped with mass spectrometers with ion trap technology for structural elucidation and qTOF and Orbitrap for the determination of accurate masses. The systems are coupled to HPLC and UHPLC chromatographic systems. Contacts: Fabio Hollan (+39 0405583674) - hollan@units.it Web site: https://dscf.units.it/it/servizi-strumenti/strumenti/Spettrometro-di-Massa

COLLABORATIONS WITH COMPANIES

- Basell
- Bracco Imaging
- Demus
- Dr. Shar
- Eni
- Enphos
- Esteco
- Eurofins
- FIS
- Illy
- Phenbiox srl
- TCR Tecora
- Versalis

PUBBLICAZIONI

- ACS Catal.2022, 12, 3430–3443, 10.1021/acscatal.1c05326 **Tunable“In-Chain”and“At the End of the Branches”MethylAcrylate Incorporation in the Polyolefin Skeleton through Pd(II)Catalysis** - Chiara Alberoni, Massimo C. D’Alterio, Gabriele Balducci, Barbara Immirzi, Maurizio Polentarutti, Claudio Pellicchia, and Barbara Milani
- Chem Catalysis, 2022, 2, 1177–1190, 10.1016/j.checat.2022.03.015 **Defect engineering over anisotropic brookite toward substrate-specific photo-oxidation of alcohols** - S. M. Hossein Hejazi, Mahdi Shahrezaei, Piotr Błonski, Mattia Allietta, Polina M. Sheverdyeva, Paolo Moras, Zdenek Badura, Sergii Kalytchuk, Elmira Mohammadi, Radek Zboril, Stepán Kment, Michal Otyepka, Alberto Naldoni, and Paolo Fornasiero
- ACS Nano2022,16, 20902–20914, 10.1021/acsnano.2c08467 **Spotting local environments in self-assembled monolayer-protected gold nanoparticles** - Cristian Gabellini, Maria Şologan, Elena Pellizzoni, Domenico Marson, Mario Daka, Paola Franchi, Luca Bignardi, Stefano Franchi, Zbyšek Posel, Alessandro Baraldi, Paolo Pengo, Marco Lucarini, Lucia Pasquato, and Paola Posocco
- J. Am. Chem. Soc. 2022, 144, 31, 14021–14025, 10.1021/jacs.2c05857 **Enhancing Oxygenic Photosynthesis by Cross-Linked Perylenebisimide “Quantasomes”** - Thomas Gobbato, Francesco Rigodanza, Elisabetta Benazzi, Paolo Costa, Marina Garrido, Andrea Sartorel, Maurizio Prato, Marcella Bonchio
- Environmental Pollution 292 (2022) 118353, 10.1016/j.envpol.2021.118353 - **Percutaneous metals absorption following exposure to road dust powder** - Greta Camilla Magnano , Giovanna Marussi , Elena Pavoni , Gianpiero Adami, Francesca Larese Filon, Matteo Crosera
- Construction and Building Materials, Volume 338, 4 July 2022, 127349, 10.1016/j.conbuildmat.2022.127349 **Photocatalytic TiO2 nanosheets-SiO2 coatings on concrete and limestone: An enhancement of de-polluting and self-cleaning properties by nanoparticle design** - M. Luna, J.J. Delgado, I. Romero, T. Montini, M.L. Almoraima Gil, J. Martínez-Lopez, P. Fornasiero, M.J. Mosquera
- ACS Catal. 2022, 12, 8, 4290–4295, 10.1021/acscatal.2c00565 **Unveiling the Synthetic Potential of Substituted Phenols as Fully Recyclable Organophotoredox Catalysts for the Iodosulfonylation of Olefins** - Cristian Rosso, Sara Cuadros, Giorgia Barison, Paolo Costa, Marina Kurbasic, Marcella Bonchio, Maurizio Prato, Luca Dell’Amico, and Giacomo Filippini



GENERAL INFORMATION

Università degli Studi di Trieste
Department of Engineering and Architecture - DIA
Via Alfonso Valerio 6/1 - 341127 Trieste (TS)
sito web: <https://dia.units.it>

CONTACTS

Prof. Paolo GALLINA
+39 0405587300

DETAILED INFORMATION

Staff: 22 Full Professors
51 Associate Professors
38 Researchers
12 Structured Technicians
16 Administrative Technicians
1 General Services
Registered students: 2,175 (Academic year 2022/2023)
Post Lauream Training: 73 enrolled in Doctoral programs in Engineering
13 enrolled in II level Master in Management in clinical engineering
27 Research fellows
6 fellows
Patents: 11

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Tecnologie no-solvente

Supercritical carbon dioxide extraction of natural bioactive compounds from plant materials



Angelo Cortesi (+39 0405583755)
angelo.cortesi@dia.units.it

Soft materials

Modeling and rheological, Low field NMR, UV and laser light scattering characterisation of controlled drug delivery systems, gels and biological tissues



Mario Grassi (+39 0405583435)
mario.grassi@dia.units.it

Bionanotechnology

Computer-aided design (HPC-based Molecular Simulation) and experimental characterization with calorimetric (ITC) and spectroscopic (UV, CD and Fluorescence) techniques of bionanotechnological systems



Erik Laurini (+39 0405583432)
erik.laurini@dia.units.it

Sustainable processes

Design of chemical and biochemical processes of industrial relevance in the energy, biotechnological and pharmaceutical fields. Use of process simulators and professional SW for environmental impact assessments (LCA) according to ISO 14040



Maurizio Fermeglia (+39 0405583438)
maurizio.fermeglia@units.it

COLLABORATIONS WITH COMPANIES

- Fibre-Net
- Serichim Srl

PUBBLICAZIONI

- **Use of low-field NMR and rheology to evaluate the microstructure and stability of a poly(D,L-lactide-co-glycolide)-based W/O emulsion to be processed by spray drying** Ana Juric Simci, Michela Abrami, Iva Erak, Iva Paladin, Biserka Cetina Cizmek, Anita Hafner, Mario Grassi, Jelena Filipovic-Grcic. International Journal of Pharmaceutics 2023, 631, 122471, 1-10
- **Desorption of artemisinin extracts of CIM-Arogya by supercritical carbon dioxide** Negi, A.S., Cortesi, A., Kikic, I., Calabrese, M., Solinas, D; Journal of Supercritical Fluids, 2018, 133, pp. 42-48
- Russi M, Valeri R, Marson D, Danielli C, Felluga F, Tintaru A, Skoko N, Aulic S, Laurini E, Pricl S. **Some things old, new and borrowed: Delivery of dabrafenib and vemurafenib to melanoma cells via self-assembled nanomicelles based on an amphiphilic dendrimer.** Eur J Pharm Sci. 2023 Jan 1;180:106311.
- A Mio, E Barbera, AM Pavan, R Danielis, A Bertucco, M Fermeglia, 2023, **Analysis of the energetic, economic, and environmental performance of hydrogen utilization for port logistic activities**, Applied Energy 347, 121431



UNIVERSITÀ DEGLI STUDI DI UDINE

hic sunt futura



GENERAL INFORMATION

Università degli Studi di Udine

Department of Agricultural, Food, Environmental and Animal Sciences

Via delle Scienze 206 - 33100 Udine (UD)

sito web: <http://www.uniud.it>

CONTACTS

Prof. Edi PIASENTIER

+39 0432558670

DETAILED INFORMATION

Staff: 24 Full Professors

50 Associate Professors

47 Researchers

40 Structured Technicians

20 Administrative Technicians

Registered students: 1800 (Academic year 2022/2023)

Post Lauream Training: 40 enrolled in the Ph.D. program in Food Human Health, Agricultural Biotechnology Sciences

31 research fellows

2 fellows

Patents: 52

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Solventi eutettici

Development of innovative electrochemical detection strategies based on ILs and DESs for the rapid quantification of volatile compounds and allergenic proteins in food products. Ionic liquids (ILs) and a subclass of them known as "deep eutectic solvents" (DESs) are ionic solvents considered "green solvents" due to their biodegradability and low toxicity. Application of these solvents both in the development of electrochemical sensors capable of operating in the gas phase and biosensors based on the use of synthetic bioreceptors such as aptamers. Synthesis of aptamers into DESs for their subsequent use in the selective recognition of proteins (food allergens) in the same solvents adopted as extractors by exploiting an electrochemical assay. Study for the gas phase transfer of the operation of cost-effective electrochemical transduction systems printed on paper or commercially available screen-printed electrodes



Rosanna Toniolo (+39 0432558885)

rosanna.toniolo@uniud.it

Peptidomimetics

Synthesis of peptide and peptidomimetic with biological activity and their functionalization on nanoparticles of synthesis, for applications in therapy, as drug delivery or nano-carriers, and diagnosis



Rossella De Marco (+39 0432558876)

rossella.demarco@uniud.it

Biomaterials	Development of processes for the synthesis of eco-friendly polymeric materials. Chemical modification of biomass syntones lignocellulosic for the production of value-added products that can act as bio-building blocks for the preparation of new Renewable Polymer Materials	  	Paolo Strazzolini (+39 0432558870) <i>paolo.strazzolini@uniud.it</i>
Homogeneous catalysis	Development of ruthenium catalysts for the hydrogenation of carbonyl and carboxylic derivatives of biomass to high value-added products under low environmental impact conditions	  	Walter Baratta (+39 0432558836) <i>walter.baratta@uniud.it</i>
Antimicrobials	Development of materials with antimicrobial activity for the control and prevention of bacterial contamination in both industrial/productive and healthcare. Development of antimicrobial materials for use in new water disinfection processes low environmental impact	  	Clara Comuzzi (+39 0432558845) <i>clara.comuzzi@uniud.it</i>
Biosensors	Development of low-cost, green biosensors aimed at guaranteeing food safety, avoiding waste and reducing the exposure of humans and animals to chemical and biological risks. In particular, the research focuses on electrochemical devices that exploit the use of a green class of solvents called Deep Eutectic Solvents (DESs) and aptamers as recognition elements.	  	Rossella Svegli (+39 0432558848)
Sustainable chemistry	Development of transition metals-based catalysts with traditional and advanced techniques with lower environmental impact	  	Eleonora Aneggi (+39 0432558840) <i>eleonora.aneggi@uniud.it</i>
Sustainable chemistry	Study of sustainable techniques to reduce MOAH (mineral oil aromatic hydrocarbons) contamination in vegetable oils (PNRR PhD with Unigrà). Development of sustainable biofilms with barrier properties against contaminants released from recycled paper (Cibiamo departmental project) Valorization of vegetable waste (project funded by ARSS Slovenia).	  	Sabrina Moret (+39 0432558146) <i>sabrina.moret@uniud.it</i>
Green chemistry	Green synthesis and catalytic applications of ruthenium complexes through mechanochemistry	  	Daniele Zuccaccia (+39 0432558819) <i>daniele.zuccaccia@uniud.it</i>
Portable analytical devices	The common commitment to limit the use of toxic and environmentally harmful substances and to reduce energy consumption, combined with the ever-increasing demand and need for portable analytical instrumentation, has led research towards the development of miniaturized analytical devices characterized by a reduced consumption of solvents / reagents and usable "in field" in compliance with the fundamental principles of GAC ("Green Analytical Chemistry). In this context, the research activity is focused on the development of low-cost and easy-to-use miniaturized electrochemical and optical analytical devices, using simple constructive approaches based on the use of commonly used instruments (cutting plotter, office or 3D printers, open-source microcontrollers and smartphone) and using eco-friendly and readily available materials (graphite-pencil, paper and cotton). These devices have been used for the determination and quantification of analytes of agro-food and environmental interest	  	Nicolò Dossi (+39 0432558835) <i>nicolo.dossi@uniud.it</i>

COLLABORATIONS WITH COMPANIES

103 Regional, domestic and foreign companies

PUBBLICAZIONI

381 publications (31/12/2022)



1506
UNIVERSITÀ
DEGLI STUDI
DI URBINO
CARLO BO

DISPEA
DIPARTIMENTO DI
SCIENZE PURE E APPLICATE



GENERAL INFORMATION

Università degli Studi di Urbino Carlo Bo

Department of Pure and Applied Sciences

Via S. Andrea 34 – 61029 Urbino (PU)

sito web: <https://www.uniurb.it/ateneo/persone-e-strutture/dipartimenti/dipartimento-di-scienze-pure-e-applicate-dispea>

CONTACTS

Prof. Andrea VICERÉ

+39 0722303385

DETAILED INFORMATION

Staff: 12 Full Professors

24 Associate Professors

24 Researchers

16 Structured Technicians

Registered students: 563 (A.A. 2021/2022)

Post Lauream Training: 80 enrolled in Doctorates in Research Methods in Science and Technology

13 Research fellows

Patents: 15



GENERAL INFORMATION

Università della Calabria

Department of Chemistry and Chemical Technologies

Via P. Bucci 12/C – 87036 Rende (CS)

site web: https://www.unical.it/portale/strutture/dipartimenti_240/ctc/

CONTACTS

Prof.ssa Anna Maria Carmela NAPOLI

+39 0984492845

DETAILED INFORMATION

Staff: 9 Full Professors

25 Associate Professors

9 Researchers

3 Structured Technicians

8 Administrative Technicians

Registered students: 274 (Academic year 2022/2023)

Post Lauream Training: 5 enrolled in doctoral programs in life science and technology

6 enrolled in doctoral programs in Translational Medicine

6 enrolled in doctoral programs in Environmental, construction and energy Sciences and Technologies

6 enrolled in doctoral programs in Physical, Chemical and Materials Sciences and Technologies.

6 Research fellows

2 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Nutraceuticals

Extraction methods of active principles in foods and vegetables



Lucia Bartella (+39 0984493317)
lucia.bartella@unical.it

Environment

Preparation and characterization of gels and aerogels as insulating materials containing coordination complexes based on silver and copper.



Francesca Scarpelli
francesca.scarpelli@unical.it

Stoccaggio CO2

Nanostructured materials and biocompatible polymers for the separation and storage of gases, and particularly CO2



Isabella Nicotera (+39 0984493379)
isabella.nicotera@unical.it

Health

MS-based analytical methods for 'targeted' and 'untargeted' determination of biomolecules and secondary metabolites.



Vincenzo Lettera (+39 0984493311)
vincenzo.lettera@unical.it

Heterocycles

Eco-compatible synthesis of high value-added heterocycles with potential biological activity



Loredana Maiuolo (+39 0984492853)
maiuolo@unical.it

Circular economy

Innovative processes for the valorization of waste



Amerigo Beneduci (+39 0984492117)
amerigo.beneduci@unical.it

Agrifood

Assessment of specific properties of foods by mass spectrometry



Leonardo Di Donna (+39 098449285)
l.didonna@unical.it

Environment	Study of environmental impacts on the biology and physiology of marine plants in the Mediterranean basin	  	Silvia Mazzuca (+39 0984492967) <i>silvia.mazzuca@unical.it</i>
Health	Application of semi-quantitative expression proteomics at different stages of development, photosynthesis ecophysiology, response to biotic and abiotic stress of marine and land plants	  	Silvia Mazzuca (+39 0984492967) <i>silvia.mazzuca@unical.it</i>
Circular economy	Development and application of technological innovations for the extraction and optimization of plant fibers for the textile and fashion supply chain.	  	Amerigo Beneduci (+39 0984492117) <i>amerigo.beneduci@unical.it</i>
Materials	Synthesis and characterization of multifunctional hybrid organic-inorganic materials. Structure and properties correlation	  	Nicolas Godbert (+39 0984492881) <i>nicolas.godbert@unical.it</i>
Environment	Solid state preparation and structural studies of coordination complexes as bio-active additives for biopolymeric "active" packaging films.	  	Alessandra Crispini (+39 0984492888)
Analytical methods	Development of new analytical protocols based on microextraction techniques for the determination of pollutants in environmental matrices and biological fluids, and for the determination of markers of pathologies in biological fluids. Analytical techniques for the determination of geographical origin of foods.	  	Antonio Tagarelli (+39 0984493332) <i>a.tagarelli@unical.it</i>
CO2 valorisation	Chemical valorization of CO2 through its incorporation into organic substrates for the synthesis of high value added compounds	  	Gabriele Bartolo (+39 0984492815) <i>bartolo.gabriele@unical.it</i>
Catalysis	Development of catalytic methods for the synthesis of high value added molecules (bioactive compounds in particular)	  	Gabriele Bartolo (+39 0984492815) <i>bartolo.gabriele@unical.it</i>
Catalysis	Preparation and structural characterization through X ray diffraction, of molecular and polymeric coordination complexes as green catalysts and sensors.	  	Nadia Marino (+39 0984492064) <i>nadia.marino@unical.it</i>
Environment	Development of innovative materials and processes for the purification of water from specific pollutants, of an organic and inorganic nature.	  	Amerigo Beneduci (+39 0984492117) <i>amerigo.beneduci@unical.it</i>
Environment	Environmental monitoring of the quality of surface and groundwater	  	Amerigo Beneduci (+39 0984492117) <i>amerigo.beneduci@unical.it</i>
Biomaterials	Synthesis of biomaterials deriving from waste for the production of food films	  	Paola Costanzo (+39 0984492850) <i>paola.costanzo@unical.it</i>
Energy	PDLC, electrochromic molecules, and nanostructured semiconductors, to employ them in the design and realization of smart windows and solar cells.	  	Gianni De Filpo (+39 098442095) <i>gdefilpo@unical.it</i>
Carbonylation	Novel processes for the incorporation of CO into organic substrates for the synthesis of carbonyl compounds	  	Gabriele Bartolo (+39 0984492815) <i>bartolo.gabriele@unical.it</i>

Environment	Development and validation of innovative analytical methods: characterisation of complex matrices in clinical, food and environmental fields.		   	Anna Maria Napoli (+39 0984493311) <i>amc.napoli@unical.it</i>
Fuel cells	Design, development and characterization of polymeric, proton and anion electrolyte membranes for PEM and AEM hydrogen fuel cells		   	Isabella Nicotera (+39 0984493379) <i>isabella.nicotera@unical.it</i>
Energy	Preparation and characterization of hybrid organic-inorganic nanomaterials for plasmonic optics, therapy, diagnostic and photoconversion		   	Massimo La Deda (+39 0984492887) <i>massimo.ladeda@unical.it</i>
Exposomics	Development of analytical methods and chemical investigations in the environmental, clinical, and food sectors based on the use of environmentally friendly sample preparation strategies coupled with mass spectrometry techniques. Data analysis using chemometric techniques.		   	Attilio Naccarato (+39 0984492055) <i>attilio.naccarato@unical.it</i>
Membranes	Development of novel nanostructured membranes for applications in the field of water purification and gas separation		   	Gabriele Bartolo (+39 0984492815) <i>bartolo.gabriele@unical.it</i>
Computational chemistry	The research is based on molecular modelling of very complex systems such as biological ones to simulate energy and binding properties (quantum-mechanical methods) and conformational changes coupled to these on a longer time scale (molecular dynamics).		   	Tiziana Marino (+39 098844920085) <i>tmarino@unical.it</i>
Batteries	Development of advanced polymer electrolytes for next-generation all-solid-state lithium and post-lithium batteries		   	Isabella Nicotera (+39 0984493379) <i>isabella.nicotera@unical.it</i>
Food	Development of ambient mass spectrometry methods for the detection of active principles in food		   	Fabio Mazzotti (+39 0984493317) <i>fmazzotti@unical.it</i>
Environment	Synthesis and characterization of nanoporous materials (MOFs) for water decontamination, recover of rare metals and heterogenous catalysis.		   	Donatella Armentano (+39 0984493305) <i>donatella.armentano@unical.it</i>
Health	Sequestering ability of natural ligands towards bioavailable metals		   	Emilia Furia (+39 0984492831) <i>emilia.furia@unical.it</i>
Molecular modelling	Molecular modeling; Fundamental chemical-physical issues regarding quantum noise, chirality and group theory		   	Giorgio Celebre (+39 0984493321) <i>giorgio.celebre@unical.it</i>
Inorganic materials	Design and synthesis of inorganic complexes with luminescence, liquid crystalline, photorefractive, photoconductive, electrochromic and antitumoral properties.		   	Iolinda Aiello (+39 0984492892) <i>iolinda.aiello@unical.it</i>
Environment	Preparation and characterization of polymeric mix membranes containing nanoporous fillers for water treatment.		   	Teresa Fina Mastropietro (+39 0984492069) <i>teresa.mastropietro@unical.it</i>
Biomaterials	Advanced mass spectrometry techniques for the characterisation of biomolecules and biomaterials. Qualitative-quantitative assays.		   	Donatella Aiello (+39-0984493311) <i>donatella.aiello@unical.it</i>

Biopolymers	Synthesis of biopolymers deriving from modified cellulose for the removal of environmentally hazardous contaminants	  	Antonio De Nino (+39 0984492043) <i>denino@unical.it</i>
Environment	Research is focused on materials made of nanometric particles such as SWNT, TiO ₂ , WO ₃ , ZnO, with the purpose of preparing systems able to remove pollutants typically found in wastewater	  	De Filpo Giovanni (+39 0984492095) <i>defilpo@unical.it</i>
Food	Identification of allergens in fruits and its derivatives; omics (proteomic and genomic) technologies applied to agro-foods; development of physical methods for the stabilization and pasteurization of agro-foods	  	Silvia Mazzuca (+39 0984492967) <i>silvia.mazzuca@unical.it</i>
Materials	Formulation and development of new bioadditives for environmentally friendly bituminous systems to improve road pavement	  	Cesare Oliviero Rossi (+39 0984492045) <i>cesare.oliviero@unical.it</i>
Bioactivity	NMR methodologies applied to the metabolic study of natural bioactive materials of nutraceutical, pharmaceutical and cosmetic interest	  	Giuseppina De Luca (+39 0984493323) <i>giuseppina.deluca@unical.it</i>
Hydrogen	Design and fabrication of nanocomposite electrolyte membranes for PEM- and AEM-type electrolyzers (anionic and protonic polymer membrane)	  	Isabella Nicotera (+39 0984493379) <i>isabella.nicotera@unical.it</i>
Health	Modeling Hypoxia-Active Anticancer Photoagents for Light-mediated therapeutic approaches	  	Marta Erminia Alberto (+39 0984492105) <i>marta.alberto@unical.it</i>
Energy	Development of energy saving materials. Creation of devices for the control of solar radiation using electrochromic and electrofluorochromic plastic films. Experimentation with self-assembly techniques of liquid-crystalline organic semiconductors for the production of electro-optical devices, electrochemical energy storage devices	  	Amerigo Beneduci (+39 0984492117) <i>amerigo.beneduci@unical.it</i>
Security	development of new technologies and applications to ensure brand recognition, traceability and enhancement. Development of fibres, fabrics and electrochromic/supercapacitor devices with high technological value, which allow the brand to be uniquely identified and enhanced	  	Amerigo Beneduci (+39 0984492117) <i>amerigo.beneduci@unical.it</i>

OTHER R&D ORGANIZATIONS

CF- INABEC	Chemical-physics Lab for Industrial, Environmental and Cultural Heritage Contacts: Giuseppe Chidichimo - giuseppe.chidichimo@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca/
La.Bio.PRO.VE	Laboratory of Plant Biology and Plant Proteomics Contacts: Silvia Mazzuca - silvia.mazzuca@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca/
Environmental Chemistry Laboratory	Environmental Chemistry Laboratory part of the research infrastructure SILA Contacts: Amerigo Beneduci (0984492117) - amerigo.beneduci@unical.it Web site: https://www.unical.it/storage/laboratories/782/

LabOrSy	Laboratory of Organic Synthesis and Chemical Preparations Contacts: Antonio De Nino - denino@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca/
LISOC	Laboratory Of Industrial And Synthetic Organic Chemistry Contacts: Bartolo Gabriele - b.gabriele@unical.it Web site: http://www.lisoc.it
LXNMR_S.C.An.	Liquid X-tal NMR Structural and Conformational-orientational Analysis Contacts: Giuseppina De Luca - Giuseppina.deluca@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca
MAT-in LAB	Laboratory Of Inorganic Molecular Materials Contacts: Giovanni De Munno - demunno@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca/
PCAM lab	Physical Chemistry and Applied Materials laboratory Contacts: Isabella Nicotera (+39 0984493379) - isabella.nicotera@unical.it Luigi Coppola (+39 0984492023) - luigi.coppola@unical.it Cesare Oliviero Rossi (+39 0984492045) - cesare.oliviero@unical.it Web site: https://pcamlab.ctc.unical.it/
PROMOCS	Molecular Design and Chemistry of Complex Systems Contacts: Emilia Sicilia - siciliae@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca
QUASIORA Laboratory	Laboratory for the Food Quality, Safety and Origin (laboratory of the Agrifood research network) Contacts: Leonardo Di Donna (+39 0984492857) - l.didonna@unical.it Web site: https://www.unical.it/ricerca/strutture-di-ricerca/infrastrutture/rete-ricerca-agro/
TRANSMED&AGRI FOOD-LAB	Contacts: Anna Napoli - amc.napoli@unical.it Web site: http://www.unical.it/portale/strutture/dipartimenti_240/ctc/strutture/laboratoriricerca/

COLLABORATIONS WITH COMPANIES

- CALABRA MACERI SPA
- Esserre Pharma SrL R&D Department
- EUROPAN-SUD Srl
- ITERCHIMICA S.r.l.
- JRS SILVATEAM INGREDIENTS SRL
- Politex Sas di Freudenberg Politex Srl
- POLYGLASS
- TIFQLAB SRL
- VIACHEM Srl
- VIBAC S.p.A

PUBBLICAZIONI

- **Structural Characterization of Peripolin and Study of Antioxidant Activity of HMG Flavonoids from Bergamot Fruit** - Antioxidants Volume 11, Issue 10 October 2022, 1847
- **Preparation and characterization of silver (I) ethylcellulose thin films as potential food packaging materials** - ChemPlusChem Volume 85, Issue 3, 2020, 426
- **Effect and Mechanism of Rejuvenation of Field-Aged Bitumen Extracted from Reclaimed Asphalt Pavement Transportation** Research Procedia 69 (2023) 863–870
- **Pyrolysis and Gasification of a Real Refuse-Derived Fuel (RDF): The Potential Use of the Products under a Circular Economy Vision** Molecules 2022, 27, 8114
- **NMR Spectroscopy Applied to the Metabolic Analysis of Natural Extracts of Cannabis sativa** - Molecules 2022, 27(11), 3509



GENERAL INFORMATION

Università di Pisa

Department of Pharmacy

Via Bonanno 33 - 56126 Pisa (PI)

sito web: <http://www.farm.unipi.it>

CONTACTS

Prof. Maria Letizia TRINCAVELLI

+39 0502219523

DETAILED INFORMATION

Staff: 15 Full Professors

33 Associate Professors

20 Researchers

Registered students: 1,894 (Academic year 2021/2022)

Post Lauream Training: 36 enrolled in doctoral programs in Science of Drug and Bioactive Substances

5 Research fellows 4 fellows

Patents: -

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Green solvents

Design, synthesis and characterization of ionic liquids and deep eutectic solvents, also from renewable sources, for specific uses: reaction media, extraction of added value compounds/chemicals from complex matrices, treatment and transformation of biomasses, gas capture



Christian Silvio Pomelli (+39

0502219314)

christian.pomelli@unipi.it

Sugar compounds

Transformation of common sugars, such as glucose, galactose and lactose, in complex saccharides, azasugars and glycoconjugates with potential biological activity



Felicia D'Andrea (+39 0502219679)

felicia.dandrea@unipi.it

Bioactive compounds

Extraction, isolation, chemical characterization and quality control of bioactive natural products from medicinal/food plants and their by-products



Marinella De Leo (+39 0502219706)

marinella.deleo@unipi.it

Bioactive compounds

Extraction, isolation, chemical characterization and quality control of bioactive natural products from medicinal/food plants and their by-products



Alessandra Braca (+39 0502219688)

alessandra.braca@unipi.it

Antitumours

Development of new compounds as anticancer agents with innovative mechanisms of action for therapeutic, diagnostic, and theranostic purposes



Concettina La Motta (+39 0502219593)

concettina.lamotta@unipi.it

Bioactive compounds

Analysis of essential oils and aromas of wild, cultivated or micropropagated plants and foods derived from them



Guido Flamini (+39 0502219686)

guido.flamini@unipi.it

PUBBLICAZIONI

- Ascrizzi R, Iannone M, Cinque G, Marianelli A, Pistelli L, Flamini G. **"Hemping" the drinks: Aromatizing alcoholic beverages with a blend of Cannabis sativa L. flowers.** Food Chem. 2020, 325:126909. doi: 10.1016/j.foodchem.2020.126909
- M. De Leo, A. M. Iannuzzi, M. P. Germanò, V. D'Angelo, F. Camangi, F. Sevi, G. Diretto, N. De Tommasi, A. Braca (2021) **Comparative chemical analysis of six ancient Italian sweet cherry (*Prunus avium* L.) varieties showing antiangiogenic activity**, Food Chem., 360, 129999 (DOI: 10.1016/j.foodchem.2021.129999)
- Husano E, Angelica M, Gonzales Rivera J, Mezzetta A, Cabrera Ruiz J, D'andrea F, Pomelli CS, Lorenzo G **Exploiting Deep Eutectic Solvents and Ionic Liquids for the Valorization of Chestnut Shell Waste.** ACS Sus. Chem .Eng. 2020, 8, 18386-18399. 10.1021/acssuschemeng.0c04945
- Florio W, Becherini S, D'Andrea F, Lupetti A, Chiappe C, Guazzelli L. **Comparative evaluation of antimicrobial activity of different types of ionic liquids**, Mat. Sci, Eng. C 2019 104:109907 10.1016/j.msec.2019.109907.

MORE INFO

Search for companies for joint doctoral programs (<https://dottorato.unipi.it/index.php/it/>).

Technology transfer (<https://www.unipi.it/index.php/trasferimento>)



GENERAL INFORMATION

Università di Pisa

Department of: Chemistry and Industrial chemistry

Via Moruzzi 13 - 56124 Pisa (PI)

sito web: <http://www.dcci.unipi.it>

CONTACTS

Prof. Fabio BELLINA

+39 0502219282

DETAILED INFORMATION

Staff: 8 Full Professors

29 Associate Professors

27 Researchers

27 Structured Technicians

13 Administrative Technicians

2 General Services

Registered students: 669 (Academic year 2022/2023)

Post Lauream Training: 50 enrolled in Doctorates in Chemical Sciences

22 Research fellows

13 fellows

Patents: 24

DATASHEET ICONS



PRODUCTS



PROPRIETARY SEARCH



PROCESSES



THIRD PARTY RESEARCH



SERVICES



TECHNOLOGIES

R&D ACTIVITIES DETAIL

Organic synthesis

Development and application of synthetic methodologies to prepare novel chemical structures, through direct arylation reaction: evaluation of the C-H bonds reactivity of (hetero)arene systems in the direct arylation conditions and in the oxidative coupling conditions promote by metal catalysts or photoredox catalysts. Last Stage Functionalisation (LSF) of pharmaceutical interest (Hetero)arenes through C-H bond activation, in collaboration with Chiesi farmaceutici. Development of molecules for special application: synthesis of highly conjugated molecules, with distinctive optical properties, through novel highly efficient and economic approaches. Thanks to their properties those structures will be used in the area of solar and artificial light capture and transformation



Fabio Bellina (+39 0502219282)

fabio.bellina@unipi.it

Heteroaromatic compounds

Study of new methods to create Carbon-Carbon bonds or Carbon-Heteroatom bonds, through reaction catalysed by transition metal or radical reactions. Use of classical batch protocols or mechanochemical approach. Synthesis of High conjugated (Hetero)Aromatic structures for technological application, capture of CO₂ or harvest of light, and biological application, anti cancer activity



Marco Lessi (+39 0502219327)

marco.lessi@unipi.it

Computational chemistry	Theoretical study of solvation processes. Calculation of energy surfaces and inter-molecular potentials. Classical and quantum simulations	   	Franca Maria Floris (+39 0502219393) <i>francamaria.floris@unipi.it</i>
Organic synthesis	Development of sustainable synthetic and catalytic methodologies for C-H bond functionalization. Development of electrochemical methodologies for application in organic synthesis and catalysis. Development of catalytic methodologies for oxidative/reductive and cross-electrophilic coupling reactions in presence of Earth-abundant transition-metals. Design, synthesis and application of new ruthenium-based catalysts for olefinic metathesis. Development of new methodologies for the ¹³ C and ² H labeling of pharmaceuticals	   	Antonio Del Vecchio (+39 0502229275) <i>antonio.delvecchio@gmail.com</i>
Cultural heritage	Development of analytical methods based on analytical pyrolysis, mass spectrometry and chromatography or the analysis and quantification of microplastics in environmental samples. Development of new analytical methods for the characterisation and the study of the degradation of natural and synthetic organic materials, focusing on applications in heritage science	   	Jacopo La Nasa (+39 0502219309) <i>jacopo.lanasa@unipi.it</i>
Second skin	Preparation and characterization of nanocomposite poly(dimethyl siloxane)-based films with a complete UV-blocking action (funded by AIXP)	   	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>
Solventi eutettici	Preparation of new eutectics as innovative solvents, for the reversible absorption of CO ₂ and the chemical recycling of polymer waste items	   	Gianluca Ciancaleoni (+39 0502219351) <i>gianluca.ciancaleoni@unipi.it</i>
Reaction mechanisms	SPEC: spectroscopic analysis of complex systems for reaction mechanisms and speciation. Spectrophotometric, spectrofluorometric and fast kinetics (Stopped-flow, T-jump) approaches (together with electrophoresis and viscometry) are combined to get thermodynamic and kinetic information on complex systems (fluorophores/new materials; metal complexes; small molecules with biosubstrates; pollutants extraction from liquid wastes)	   	Tarita Biver (+39 0502219259) <i>tarita.biver@unipi.it</i>
Metal drugs	AIRC. "A multi-Omics approach to establish the molecular mechanisms of Anticancer Gold Compounds in the Systems Biology Era." This proposal is directed to develop new effective methodologies to determine the mechanism of action of six distinct gold compounds of large interest for medicinal chemistry that are promising experimental anticancer agents	   	Alessandro Pratesi (+39 0502219224) <i>alessandro.pratesi@unipi.it</i>
Porous materials	Development of novel solid adsorbents (metal-organic frameworks, solid amines) for gas separations, with focus on CO ₂ capture from post-combustion flue gas and directly from air	   	Marco Taddei (+39 0502219602) <i>marco.taddei@unipi.it</i>
Conjugated polymers	Development of conjugated polymers for application in organic electronic devices and secondary metal-ion batteries	   	Marco Carloti <i>marco.carloti@unipi.it</i>

Drug delivery	Strategies development for the synthesis of bioactive molecules capable of selectively recognizing specific biomarkers. Development of smart materials for the production of drug delivery systems with controlled and "on-demand" release of active ingredient. Use of nuclear magnetic resonance (NMR) spectroscopy for the in-depth and complete study of the stereochemical, dynamic and thermodynamic characteristics of supramolecular aggregates involving from low to high molecular weight systems	    	Andrea Cesari (+39 0502219315) <i>andrea.cesari@unipi.it</i>
Deep Eutctic Solvents	Deep Eutctic Solvents: optimization of preparation by conventional heating or coaxial microwave antenna; study of density, viscosity, surface tension, thermal properties, etc., and evaluation of structure-properties relationship; study of applications in the field of extraction of high value-added components from biomass, electrodeposition, depolymerization	    	Chiara Pelosi (+39 0502219268) <i>chiara.pelosi@unipi.it</i>
Electrochemistry	Study of the redox processes of new organic, inorganic molecules and mononuclear or polynuclear organometallic transition metal complexes in water or in strictly anhydrous non aqueous solvents, under inert atmosphere. Spectroscopic characterization (UV-vis, IR, EPR) of the relatively long-lived redox intermediates and study of the reactions of the metastable products thanks to "in situ" generation in spectroelectrochemical cells	    	Tiziana Funaioli (+39 0502219239) <i>tiziana.funaioli@unipi.it</i>
Biomimetics	Synthesis and conformational studies of biomimetics with biomedical activity, in particular towards the development of new antibiotics and antitumoral molecules	    	Gaetano Angelici (+39 0502219227) <i>gaetano.angelici@unipi.it</i>
Computational photochemistry	Computational photochemistry. Methodological development. Study of molecular switches and systems of interest in pharmacology and photovoltaics	    	Giovanni Granucci (+39 0502219238) <i>giovanni.granucci@unipi.it</i>
Functional polymers	PRIN2017: functional supramolecular polymers for self-diagnostic composites ERC Mama: functional polymers with mechanochromic features. PRIN2022: luminescent solar concentrators based on recycled poly(methyl methacrylate). ENEA project: preparation of ionomers and polymeric membranes with ionic-exchange features. ENI project: preparation of oil additives with dispersion and anti-friction characteristics	    	Andrea Pucci (+39 0502219270) <i>andrea.pucci@unipi.it</i>
Microplastics	Development of innovative protocols, based on chromatographic techniques coupled with mass spectrometry (GC-MS and LC-MS), for the quantitative analysis of microplastics in environmental matrices and their degradation or leaching products. Development of protocols for the characterization of the inflammatory response of cellular systems exposed to degraded microplastic material in order to assess their impact on cardiovascular diseases. Development and validation of analytical procedures, based on chromatographic techniques coupled with mass spectrometry (GC-MS and LC-MS), for monitoring the health status of individuals through the determination of biomarkers in biological fluids such as saliva, sweat, exhaled breath, nails, plasma, and blood.	    	Tommaso Lomonaco (+39 0502219248) <i>tommaso.lomonaco@unipi.it</i>
Composites	Preparation and characterization of multifunctional composites/nanocomposites based on biopolymers, natural fibers, wastes, inorganic fillers	    	Grazia Totaro (+39 0502219319) <i>grazia.totaro@unipi.it</i>

Nanomaterials	Design, preparation and characterization of nanosystems for optoelectronics, magnetism, nanomedicine and photovoltaics	  	Francesco Pineider (+39 0502219313) <i>francesco.pineider@unipi.it</i>
Chirality	Synthesis of chiral auxiliaries starting from renewable resources and their use in enantiodiscrimination : chiral ligands for asymmetric catalysis in the preparation of API, chiral auxiliaries for the determination of the enantiomeric composition of bioactive compounds	  	Anna Iuliano (+39 0502219232) <i>anna.iuliano@unipi.it</i>
Spectroscopy	Spectroscopy applied to the study of liquid crystals, LC elastomers, memory shaped materials. Spectroscopic methods applied to food and agricultural products.	  	Valentina Domenici (+39 0502219215) <i>valentina.domenici@unipi.it</i>
Transparent wood	Preparation of transparent wood from natural wood and wood waste (VEGETAS project, Regione Toscana and Camarlinghi SpA)	  	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>
Metal drugs	"ACTIVATABLE PT(IV) COMPOUNDS AS POTENTIAL ANTICANCER PRODRUGS AND NEW STRATEGIES TO OVERCOME LIMITS OF PLATINUM-BASED CHEMOTHERAPY IN COLORECTAL CANCER." "The project aims to the synthesis of new Pt(IV) complexes endowed of bioactive axial ligands starting from the oxidation of the respective Pt(II) precursors. Once the syntheses are optimized, alternative Pt complexes will be considered with the purpose of finding compounds with greater bioactivity.	  	Chiara Gabbiani (+39 0502219225) <i>chiara.gabbiani@unipi.it</i>
SSNMR	Application of solid-state NMR spectroscopy to explore the structure and dynamics of porous materials for gas separation and adsorption	  	Francesca Martini (+39 0502219353) <i>francesca.martini@unipi.it</i>
Filler	Synthesis and characterization of inorganic fillers with specific functionalities	  	Grazia Totaro (+39 0502219319) <i>grazia.totaro@unipi.it</i>
Flow chemistry	Development of new methods exploiting continuous-flow reactors for selective organic transformations, either with homogeneous catalysis or with supported systems	  	Alessandro Mandoli (+39 0502219281) <i>alessandro.mandoli@unipi.it</i>
Analytical methods	Development of analytical methods based on liquid chromatography with DAD detection or mass spectrometric detection for the characterisation of organic dyes and pigments in complex matrices (e.g. heritage objects, modern and contemporary textiles, plastic materials employed in design objects and in electronic devices). Application of LC to the characterisation of ageing/degradation products of (bioactive) organic dyes, as a result of natural or artificial ageing, also induced by electrochemical methods (cooperation with Heyrovský Institute, Prague)	  	Ilaria Degano (+39 0502219255) <i>ilaria.degano@unipi.it</i>
GC-MS	Development of analytical methods based on analytical pyrolysis, gas chromatography and mass spectrometry (Py-GC-MS) for the analysis of organic materials	  	Francesca Modugno (+39 0502219303) <i>francesca.modugno@unipi.it</i>
Bioactive compounds	Stereoselective synthesis of bio-active substances, also labelled with stable isotopes, belonging to the oxylipin and 3-amino-2-oxindole classes	  	Alessandro Mandoli (+39 0502219280) <i>alessandro.mandoli@unipi.it</i>

Heterometallic complexes	Synthesis and characterization of heterometallic complexes containing lanthanides and d transition metals, for applications in material chemistry and/or bioinorganics	  	Simona Samaritani (+39 0502219261) <i>simona.samaritani@unipi.it</i>
Microplastics	Methodologies for quantifying microplastics, impact assessment in marine and lake ecosystems, environmental remediation strategies, study of environmental degradation processes and of interaction with living organisms. New unfluorinated products for the hydrophobic and oleophobic surface modification of paper suitable for use as packaging materials and for disposable items as a replacement for plastic materials	  	Valter Castelvetro (+39 0502219256) <i>valter.castelvetro@unipi.it</i>
Polymers	Development of biocompatible and bioactive polymeric materials for biological tissue growth/regeneration and controlled drug release. Additive Manufacturing (3D Printing) and electrospinning of polymers and polymeric matrix composites	  	Dario Puppi (+39 0502219333) <i>dario.puppi@unipi.it</i>
Sustainability	PRA_2022_58 (2022-2024): The project aims at developing and optimising new applications of microwave (MW) irradiation for the treatment of complex samples, exploiting the specificity of MW heating mechanism, which allows a high reaction efficiency while reducing processing time. The project exploiting MW heating to develop and optimise different protocols to treat extremely complex matrices, for the extraction, hydrolysis, and recovery of specific analytes or high value products. In particular, we will treat matrices such as soil and water samples for the analysis of persistent organic pollutants, contaminants of emerging concern (CECs), microplastics and microfibers; biopolymers for the detection of amino acids, monosaccharides and fatty acids; plant biomass for the extraction of lignin and high value products, and poultry feathers for the recovery of keratin	  	Jeannette J. Lucejko (+39 0502219303) <i>jeannette.lucejko@unipi.it</i>
SSNMR	Application of Solid state NMR techniques to study the structural and dynamic properties of pharmaceuticals. Application of Solid state NMR techniques to study the structural and dynamic properties of materials for energy (e.g. photovoltaics) and environment	  	Marco Geppi (+39 0502219289) <i>marco.geppi@unipi.it</i>
Unimere micelles	Synthesis via controlled polymerization of amphiphilic random copolymers and study of their self-assembling behaviour in water for potential application in drug delivery and catalysis (PRIN 2022)	  	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>
Computational chemistry	Computational chemistry. Electronic correlation. Inter-molecular forces. Quantum Monte Carlo. DMRG. Methodological developments	  	Claudio Amovilli (+39 0502219399) <i>claudio.amovilli@unipi.it</i>
Biocatalysis	Enantioselective biotransformations for the synthesis of fine chemicals. Immobilization of enzymes for in batch and continuous flow reactions	  	Antonella Petri (+39 0502219279) <i>antonella.petri@unipi.it</i>
Prevention	Synthesis of non-peptidic small molecules for the prevention of neurodegenerative diseases	  	Rosarita D'Orsi (+39 0502219266) <i>rosarita.dorsi@gmail.com</i>

Algorithms	Development of fast algorithms and numerical techniques to computer molecular properties with multiscale methods. Software development within the Gaussian and C FOUR codes for the simulation of molecular properties and processes	  	Filippo Lipparini (+39 0502219269) <i>filippo.lipparini@unipi.it</i>
Metallic complexes	Synthesis of metal complexes for pharmacological and catalytic applications and their speciation in aqueous solution via IR, NMR and UV-Vis	  	Lorenzo Biancalana (+39 0502219223) <i>lorenzo.biancalana@unipi.it</i>
Carbonylative reactions	The research is focused on organometallic chemistry directed towards organic synthesis and in particular on carbonylative cross coupling reactions applied to the synthesis of carbonylated heterocyclic compounds and their use in solar cells devices and optoelectronics. Carbon monoxide moiety can be introduced as CO gas or by means of surrogates based on simple organic molecules such as HCOOH, CHCl ₃ , oxalyl chloride, CO ₂ and metal carbonyls	  	Laura Antonella Aronica (+39 0502219274) <i>laura.antonella.aronica@unipi.it</i>
Organic synthesis	Development of new protocols for the synthesis of heterocyclic compounds via transition metals-promoted reactions; preparation of organic fluorophores for colourless luminescent solar concentrator (LSC) devices; synthesis and chiroptical characterization of chiral organic π -conjugated materials with outstanding chiroptical features; development of green and sustainable strategies in Palladium-catalyzed coupling reactions	  	Gianluigi Albano (+39 0502219277) <i>gianluigi.albano@unipi.it</i>
Antibiovegetative coatings	Photopolymerized films as protective coatings for marine antifouling and wood applications (funded by Maflon SpA)	  	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>
Biomass	Development of analytical tools mainly based on pyrolysis and mass spectrometry (Py-GC/MS, EGA-MS) to characterise lignocellulosic biomass and to study its reactivity under pyrolysis and co-pyrolysis conditions	  	Erika Ribechini (+39 0502219305) <i>erika.ribechini@unipi.it</i>
Green Hydrogen	Design, preparation and characterization of anion-exchange membrane and ionomers for water electrolysis for water electrolysis and green hydrogen production (funded by Enapter srl, PNRR PE2)	  	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>
Polymers	Synthesis and characterization of polyesters and co-polyesters from bio-based monomers for specific purpose	  	Grazia Totaro (+39 0502219319) <i>grazia.totaro@unipi.it</i>
Bio-based materials	Preparation and functionalization of crystalline nanocellulose. Processes to isolate nanocellulose (nanocrystals or nanofibers) from biomass. For the preparation of nanocellulose, enzymatic or acid hydrolysis of the starting cellulose pulps are preferred. Application of nanocellulose in various fields of materials science, in particular in paper consolidation and in the field of materials for photonics and electronics. Extraction and characterization of lignin materials and their application in optoelectronics and materials science	  	Alessandra Operamolla (+39 0502219342) <i>alessandra.operamolla@unipi.it</i>
Batteries	Design, preparation and characterization of innovative polymeric membranes for redox flow batteries (funded by GES srl)	  	Elisa Martinelli (+39 0502219354) <i>elisa.martinelli@unipi.it</i>

Pharmaceutical products	Consulting activity and scientific support to the industrial production of active pharmaceutical ingredients (API)	  	Alessandro Mandoli (+39 0502219282) <i>alessandro.mandoli@unipi.it</i>
Computational chemistry	Software development for the simulation of molecular properties and processes. Development of computational models for the simulation of light-activated processes in photoresponsive proteins. Computational modeling of energy and charge transfer processes in excitonic systems	  	Benedetta Mennucci (+39 05022192903) <i>benedetta.mennucci@unipi.it</i>
Nanomaterials	Nanocomposite semi-transparent films based on poly(dimethyl siloxane) as sunscreen filters with total UVA and UVB absorption, for skin application that are easily removable for single-use applications, to be used as protective devices for people suffering from genetic pathologies that cause hypersensitivity to solar radiation	  	Valter Castelvetro (+39 0502219256) <i>valter.castelvetro@unipi.it</i>
Metallic compounds	Inorganic and organometallic synthesis, including under inert atmosphere. Anhydrication and purification of solids. Solid state and solution characterization (analytical techniques; IR, NMR and UV spectroscopy). Applications in catalysis and medicine	  	Fabio Marchetti (+39 0502219245) <i>fabio.marchetti@unipi.it</i>

OTHER R&D ORGANIZATIONS

Chema S.r.l.	UNIPi Spin-off: it proposes innovative solutions in Italy and abroad in the fields of applied research, technology transfer and specialist advice in the chemical, environmental and chemical industries. Contacts: Valentina Domenici (+39 3772990144) - info@chemasrl.it Web site: http://www.chemasrl.it
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Spin-PET S.r.l.	Spin-off UNIPi: it is an innovative company born from university research. As a spinoff of the University of Pisa, maintaining its own characteristics of originality, uniqueness and scientific/technological solidity, it carries out activities in the field of new polymer materials Contacts: Francesco Ciardelli (+39 0887274832) - ciardelli@spinpet.it Web site: http://www.spinpet.it/wp-site/it/

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- SIMS SRL
- TCA Spa
- Tecnocreo srl
- TRE ZETA GROUP SRL

PUBBLICAZIONI

- F.Nardelli, F.Martini, E.Carignani, E.Rossi, S.Borsacchi, M.Cettolin, A.Susanna, M.Arimondi, L.Giannini, M.Gepi, and L.Calucci (2021). **Glassy and Polymer Dynamics of Elastomers by 1H-Field-Cycling NMR Relaxometry: Effects of Fillers**, J. Phys. Chem. B, 125, 4546. doi: 10.1021/acs.jpcc.1c00885.
- M.Meucci, S.Haveriku, M.Badalassi, C.Cardelli, G.Ruggeri, A.Pucci (2022). **Effect of Polyolefin Elastomers' Characteristics and Natural Magnesium Hydroxide Content on the Properties of Halogen-Free Flame-Retardant Polyolefin Composites**, Micro, 2, 164. doi: 10.3390/micro2010011.
- P.Minei, M.Lessi, L.Contiero, S.Borsacchi, F.Martini, G.Ruggeri, M.Gepi, F.Bellina, A.Pucci (2020) **Boosting the NIR reflective properties of perylene organic coatings with T thermoplastic hollow microspheres: Optical and structural properties by a multi-technique approach**, Solar Energy, 198, 689. doi: 10.1016/j.solener.2020.02.017.
- G Pecorini, S Braccini, G Parrini, F Chiellini, D Puppi (2022). **Additive Manufacturing of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate)/Poly(D,L-lactide-co-glycolide) Biphasic Scaffolds for Bone Tissue Regeneration**. International Journal of Molecular Sciences, 23(7), 3895. doi: 10.3390/ijms2307389
- D Puppi, A Piroso, G Lupi, PA Erba, G Giachi, F Chiellini (2017). **Design and fabrication of novel polymeric biodegradable stents for small caliber blood vessels by computer-aided wet-spinning**. Biomedical Materials 12 (3): Article number 035011. doi: 10.1088/1748-605X/aa6a28

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20149 Milano
Via Giovanni Da Procida 11
Tel. +39.02.34565.1
Fax. +39.02.34565.310
federchimica@federchimica.it

00186 Roma
Largo Arenula, 34
Tel. +39.06.54273.1
Fax. +39.06.54273.240
ist@federchimica.it

1040 Bruxelles
1, Avenue de la Joyeuse Entrée
Tel. +322.2803292
Fax. +322.2800094
delegazione@federchimica.eu

www.federchimica.it