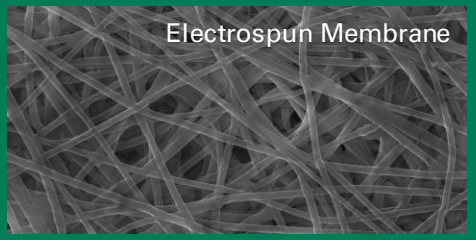
MASTER THESIS

In addition to laboratory activities, SMART provides several opportunities for INDUSTRIAL and/or RESEARCH thesis on hot applied and fundamental topics.

- Nano- and Meso-structures for sensing, biomedicine and advanced photocatalysis.
- Electrospinning of polymer membranes and composites.
- Semicrystalline polymers: processing, structure, properties & additive manufacturing.
- Hybrid and polymer nanostructures for sustainable photonics.
- Design and development of new bioplastics.
- Polymer gels for biomedical and environment management.
- Membrane processes: from synthesis to technology of water treatment and environmental recovery.
- Development of industrial catalysts for hydrogen economy processes
- Simulation, modelling and engineering of physical-chemical sustainable processes.
- Process System Engineering and Process Analytical Technologies.

Additional topics are also available at Italian and foreign Research Institutes, within the Erasmus programs, and at Industrial partners (recently, Evonik. Solvay, Iplom, Biochemtex, Infineum, Eni, Lamberti, Proplast, Boero, Ecospray Technologies, ...).



JOB PLACEMENTS

The SMART graduate is a flexible professional figure who can have access to several industrial and academic positions:

- R & D in Industry or Academia
- Industrial production and operation
- In-line quality control
- Product and technology developer in the polymer and process industry
- Waste/water treatment technologies and processing
- Energy management
- Commercial product management
- Data Science
- HSE (Health, Safety and Environment)
- Doctorate schools

CONTACTS

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Università di Genova

Master Degree Course

SUSTAINABLE POLYMER AND PROCESS CHEMISTRY

SMART

MASTER CONTENTS

Sustainable polyMer And pRocess chemisTry (SMART) provides a unique opportunity to acquire skills in chemistry and technology of polymeric materials, sustainable industrial chemical processes oriented to the circular economy, environmental protection, and end-of-life management of materials.

The degree is designed to form multidisciplinary scientists and professionals who will serve national and international companies to solve technological and process problems in a wide range of sectors, including those at the interface between chemistry, processes and engineering. In particular, the training program is designed to provide knowledge and skills related to:

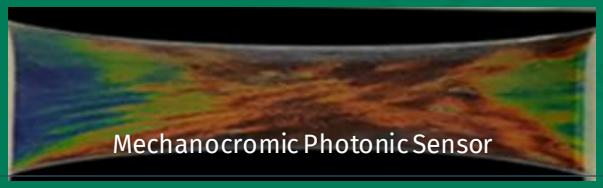
- Sustainable development of new chemical processes focusing on 'product design' rather than 'process design', addressing environmental problems such as waste limitation by smart re-conversion into new chemical feedstock.
- Sustainable design of smart polymer, inorganic and hybrid materials from natural sources, meeting the needs of the modern market and industry, ensuring their reuse and recycling according to circular economy.

UniGe | DCCI

Polymers from Renewable Sources

- Developing micro- and nanostructured polymeric and hybrid materials with smart properties to meet the sustainability challenges of modern society (CO_2 emissions reduction, energy saving, environmental and water remediation, atoms economy, catalysis and photocatalysis) within the framework of the 12 principles of Green Chemistry.
- Technical and managerial issues related to polymers and inorganics recycling and environmental remediation.

Specialized lectures and seminars are also offered by skilled experts from companies and associations on topics related to sustainability, recycling, circular economy, and on intellectual property management.



Mechanocromic Photonic Sensor

ADMISSION

Applicants must have obtained a relevant Bachelor's degree in Italy or an equivalent degree abroad, English B2 proficiency is required. Applicants must demonstrate the following:

- CURRICULAR REQUIREMENTS:

Suitable personal preparation in inorganic chemistry, organic chemistry, physical chemistry, analytical chemistry, engineering, mathematics and physics joined to chemical laboratoriy skills is required.

- PERSONAL REQUIREMENTS:

Applicants must have excellent academic records. The quality of the bachelor, the CGPA, and the ranking of the degree-granting University will also be considered in the admission process.

Sustainable Processes

SOFT SKILLS & EMPLOYMENT

SMART offers the opportunity to improve soft skills as well as professional orientation through activities related to Seminars, Thesis Project, Industrial Meetings, Visits to Companies and Industrial Plants.