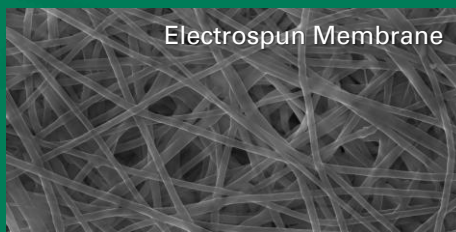


## MSc THESIS

SMART offers numerous opportunities for industrial and research theses on cutting-edge and fundamental topics.

- Nano- and meso-structures in sensing, biomedicine, and advanced photocatalysis applications.
- Fabrication of polymer membranes and composites via electrospinning.
- Semicrystalline polymers: processing, structure, properties & additive manufacturing.
- Integration of hybrid and polymer nanostructures for sustainable advances in photonics.
- Design and development of new bioplastics.
- Polymer gels for biomedicine and environment management.
- Membrane processes: from synthesis to water treatment and environmental recovery technologies.
- Development of industrial catalysts for the hydrogen economy.
- Simulation, modelling and engineering of physico-chemical sustainable processes.
- Process System Engineering and Process Analytical Technologies.

Other topics are accessible through Italian and international research Institutes, as well as via Erasmus programs and collaborations with industrial partners.



## JOB PLACEMENTS

The SMART graduate embodies a versatile professional capable of pursuing a variety of opportunities in both industry and academia:

- R&D roles in Industry or Academia
- Industrial manufacturing and operation
- In-line quality control
- Product and technology developers in polymer synthesis and manufacturing and process industry
- Waste/water treatment technologies and operations
- Energy management
- Commercial product management
- Process Analytical Control
- HSE (Health, Safety and Environment)
- Doctoral programs

## CONTACTS

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🌐 <https://chimica.unige.it/node/1816>



Università  
di Genova

Master of Science

**SUSTAINABLE  
POLYMER AND  
PROCESS  
CHEMISTRY**

**SMART**

QR code

More info



## MSc CONTENTS

The Sustainable polyMer And pRocess chemisTry (SMART) MSc program offers a unique opportunity to gain skills in chemistry and technology of polymer materials, sustainable industrial chemical processes oriented to circular economy, environmental protection, and products end-of-life management.

The 2-year Master of Science is crafted to train multidisciplinary scientists and professionals capable of tackling technological challenges for national and international companies across those sectors interfacing chemistry, processes chemistry, and engineering. The curriculum is tailored to impart expertise and competencies in:

- Promoting sustainable development through the creation of new chemical processes with a sharp focus on 'product design' over 'process design', to address environmental challenges such as waste reduction through smart reconversion into chemical feedstocks.
- Crafting sustainable smart polymers, inorganic, and hybrid materials from natural sources to fulfill market and industrial needs, while ensuring their reusability and recyclability in alignment with the principles of the circular economy.



Polymers from Renewable Sources

- Developing micro- and nanostructured polymeric and hybrid materials with smart properties to meet the sustainability imperatives of modern society (CO<sub>2</sub> emissions reduction, energy saving, environmental and water remediation, atoms economy, catalysis and photocatalysis) all aligned with the 12 principles of Green Chemistry.
- Technical and managerial issues related to polymers and inorganics recycling and environmental remediation.

Specialist lectures and seminars on sustainability, recycling, circular economy, and on intellectual property management are also offered by specialized experts from companies and associations.



Mechanochromic Photonic Sensor

## ADMISSION

Applicants must hold a relevant Bachelor's degree from an accredited institution in Italy or an equivalent degree from abroad. English language proficiency at B2 level is also required. Applicants must provide evidence of the following:

### - CURRICULAR REQUIREMENTS

Applicants must exhibit adequate personal preparation in inorganic chemistry, organic chemistry, physical chemistry, analytical chemistry, engineering, mathematics, and physics, coupled with proficient chemical laboratory skills.

### - 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.



## SOFT SKILLS & EMPLOYMENT

SMART provides a platform to enhance soft skills and refine career orientation through a spectrum of activities such as seminars, theses, industry meetings, visits to companies, and tours of industrial plants.