



Maila Castellano

Associate Professor

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Education and training

1995

Graduated in Chemistry

Effetto del peso molecolare nella cristallizzazione del policaprolattone
University of Genoa – Genoa - IT

1999

PH.D. in Chemistry

Relazioni struttura-proprietà in sistemi elastomerici rinforzati
University of Genoa – Genoa - IT

Academic experience

2005 - 2021

Researcher

University of Genoa – Genoa - IT

2021 - ONGOING

Associate Professor

University of Genoa – Genoa - IT

Language skills

English

Independent

Teaching activity

My actual teachings are:

- **“Industrial Chemistry II”** (5 CFU, Master Degree in Industrial Chemistry)
- **“Properties of the polymer and polymeric composites”** (6 CFU, Master Degree in Science and Technology of Materials)
- **“Recovery and recycling of polymeric materials”** (4 CFU, Bachelor Degree in Materials Science).
- **“Biotechnological plants and processes”** (0,5 CFU Bachelor Degree in Biotechnology)
- **“Industrial Chemistry”** (Mod. II) (4CFU) Master Degree in Sustainable polymer and process chemistry)
- **“Chimica Macromolecolare”** (Mod. II) (2CFU) Bachelor Degree in Chemistry and Chemical Technologies,

I am a member of the exam committee of various courses within the Bachelor Degrees in Chemistry and Chemical Technologies and Materials Science and in the Master Degrees in Industrial Chemistry and Science and Technology of Materials.

I have been supervisor of various students during their Master Degree thesis.

Postgraduate research and teaching activity

Supervision of PhD students, residents and post-doctoral fellows

I have been supervisor of various students during their fellowships:

- AA.2010-2011: Chemical modification of natural rubber latex and fillers and their chemical-physical characterization;
- AA2009-2010: "Use of ionizing radiation, photochemical methods and nanochemistry on materials and in the process of tire manufacturing within the MIUR FIRB ELASTORAD project (FIRB2006)
- AA 2014-2015: Polydimethylsiloxane membranes preparation, by electrospinning technique, with additions of suitable additives for photocatalytic applications, and their characterization.
- AA 2014-2015: Development of polymer composites with inorganic reinforcement and their characterization..
- AA 2016-2017: I have been supervisor of students during ERASMUS + Learning Agreement for student mobility for traineeships per AA 2016/2017 with Edinburgh Napier University, School of Engineering and the Built Environment, Edinburgh, Scotland (UK):
A microrheological study of biopolymer solutions and hydrogels.

I have been Tutor of Ph. D. Students:

- AA 2017-2020: supervisor of a Doctorate fellowship in Science and Technologies of Chemistry and Materials (XXXIII Cycle). Title of Ph. D. thesis: Polysaccharide-based nanostructured materials for special applications
- AA 2017-2020: supervisor of a Doctorate fellowship in Science and Technologies of Chemistry and Materials (XXXIII Cycle). Title of Ph. D. thesis: Engineered poly(vinylidene fluoride) based composites containing inorganic inclusions as smart materials for energy conversion and storage: process-structure-properties correlations. (co-supervisor: Dr.ssa Paola Stagnaro ISMAC-CNR Genova)
- AA 2022-2025: Co-Supervisor of a Doctorate fellowship in Science and Technologies of Chemistry and Materials (XXXVIII Cycle). Title of Ph.D. thesis: Use of electrospun and bacterial encapsulation methods on polysaccharide gels in the field of biocleaning and disinfection of Cultural Heritage.
Fellowship founded by DM 352/22 PNRR Ambito Patrimonio Culturale.
- AA 2023-2026 Co-Supervisor of a Doctorate fellowship in Science and Technologies of Chemistry and Materials (XXXIV Cycle) Title of Ph.D. thesis: Treatment of decommissioned wind turbine blades for glass fibre recycling
Fellowship co-founded by Regione Liguria.

Research interests

The research activity has been focused on the correlation between molecular structure and thermodynamic, mechanical, rheological and morphological properties of mono and multicomponent synthetic macromolecular systems. In particular, present research lines include: functional polymeric materials, biomaterials, polymeric nanostructures, study of the physical properties, rheology and mechanical properties of polymers, surface modification and surface properties characterization of polymeric materials. More in detail, competences are related to: (i) the study of structure-property

relationships in natural and synthetic polymers, copolymers and polymer blends to design new polymeric materials with physical properties aimed to specific applications; (ii) rheological, mechanical, dynamic-mechanical, morphological, and thermal characterization of macromolecular systems; (iii) surface functionalization through chemical and physical methods and surface characterization of polymeric materials; (iv) use of the electrospinning technology to produce innovative nanostructured porous materials. Moreover, part of research activity was carried out in Grenoble at the "Laboratoire de Matériaux Polymères" of the "Ecole Française de Papeterie et des Industries Graphiques INPG-EFPG". The research involved the surface modification of the lignocellulosic fibres and their Physical-Chemical Characterization, in order to obtain modified natural fiber used as reinforcement in polymeric composites. I published 88 papers among them 81 on international journals (Scopus: h-Index 28), 4 chapters in the book of National School. I'm co-inventor of 1 Italian patents. I have participated to 76 national and international conferences, having talks and showing posters (more than 120 communications), and to 16 schools and courses. I contributed to the organization of schools, conferences and workshop.

I have participated in one finalized Projects funded by CNR, two FSE Projects (Fondo Sociale Europeo) financed by Regione Lombardia in one FIRB project funded by Italian Ministry of Research and University, in nine projects financed by University of Genoa, in one Project funded by Cariplo foundation, in one Project financed by National Institute for Nuclear Physics (INFN), one PRIN project funded by Italian Ministry of Research and University and one European INTERREG IT/FR Project. Moreover, I have participated in many research projects financed by the national or international industries

Editorial activity

Guest Editor of the Special Issue: "Electrospinning Technology to Produce Innovative Nanostructured Materials: Current Applications and Future Perspectives" in *Polymers* (MDPI) IF: 5. (https://www.mdpi.com/journal/polymers/special_issues/Electrospinning_Technol) and Guest Editor of the Special Issue: "Alginate-based Biomaterials and Drug Delivery" in *Marine Drugs* (MDPI) IF 5,4 (https://www.mdpi.com/journal/marinedrugs/special_issues/RGFT9513N3)

I'm reviewer in the following scientific journals:

- *Applied Materials and Interfaces* (ACS); *Macro letters* (ACS).
- *Carbohydrate Polymers* (Elsevier); *Food Hydrocolloids* (Elsevier); *International Journal of Biological Macromolecules* (Elsevier); *International Biodeterioration & Biodegradation* (Elsevier).
- *Polymers for Advanced Technologies* (Wiley); *Polymers Engineering and Science* (Wiley); *Macromolecular Materials and Engineering* (Wiley); *Journal of Applied Polymer Science* (Wiley).
- *Colloid and Polymer Science* (Springer); *Journal of Polymers and the Environment* (Springer); *Journal of Materials Science* (Springer); *Drug Delivery and Translational Research* (Springer).