

Scientific Curriculum of Andrea Martinelli, Ph.D.

WORK EXPERIENCE

2010 – current Associate Professor of Macromolecules at Department of Chemistry of Sapienza University of Rome

1999 – 2010 Assistant Professor at Department of Chemistry of Sapienza University of Rome,
1998 Adjunct Professor of Material Chemistry for BS in Science and Technology of Materials-
Roma Tre University

1997 Post-doc research fellow from Department of Environmental Science- University Ca' Foscari of Venice

1997 Post-doc research fellow from Department of Earth Sciences of Sapienza University of Rome

1994-1996 Italy Post-doc research fellow from Department of Chemistry of Sapienza University of Rome

EDUCATION AND TRAINING

1990 – 1993 PhD in Chemical Science

Department of Chemistry of Sapienza University of Rome

1988 Laurea Degree (MSc) in Industrial Chemistry

Department of Chemistry of Sapienza University of Rome

TEACHING ACTIVITY

2010 – current Laboratory of Macromolecules (9 cfu) - M.S. in Industrial Chemistry

2013 – current Macromolecules (6 cfu) - M.S. in Industrial Chemistry

2004 – 2008 Material Science and Technology (6cfu) - M.S. in Industrial Chemistry

1999 – 2004 Laboratory of Macromolecular Chemistry (9 cfu) - B.S. in Industrial Chemistry

He has been supervisor of several Master thesis in Industrial Chemistry and Pharmaceutical Science and Technology. He was tutor of 5 PhD students in Materials Science and Chemical Industrial Processes. He is currently tutor of two PhD students in Chemical Sciences and Mathematical Model for Engineering, Electromagnetism and Nanoscience.

He is member of the PhD College in "MATHEMATICAL MODELS FOR ENGINEERING, ELECTROMAGNETISM AND NANOSCIENCES"

RESEARCH FIELDS

Chemical physical, spectroscopic and mechanical characterization of amorphous and semi-crystalline polymers

- Investigation on thermal, morphological, structural and mechanical properties of polymer materials
- Studies on glass transition and crystallization of polymers
- Polymer transition investigation by variable temperature and time resolved FTIR spectroscopy

Conducting Polymers

- Relationship among morphological-structural features and conductivity of doped poly(p-phenylene sulfide) (PPS)
- Synthesis and characterization of electrical and mechanical properties of polyurethane and olefinic elastomers grafted with polyaniline
- New polyanionic substrate for poly(3,4-ethylenedioxythiophene) (PEDOT) polymerization

Synthesis and Characterization of Polymer Systems for Biomedical Application

- Synthesis and characterization of biomaterials with biocompatible, haemocompatible and antimicrobial properties for biomedical device preparation.
- Preparation, functionalization and characterization of polymer scaffolds for tissue engineering

Carbon Nano-Tubes

- Adhesion properties of MWCNT membranes (buckypaper) on animal wet tissues
- Preparation and evaluation on prosthetic devices based on buckypaper
- Buckypaper for analytical solid phase extraction devices

Biopolymers and plastic degradation

- Surface modification and characterization of biodegradable poly(L-lactide)
- Extraction from biomass and Characterization of PHA obtained from mixed microbial cultures
- Bacterial degradation of PET and compostable plastic films in collaboration with the research group of IRSA-CNR of Rome.

SCIENTIFIC COLLABORATIONS AND PROJECTS

- 2002 Co-I Programmi di Ricerca Scientifica di Rilevante Interesse Nazionale (PRIN) *Polymer matrices for drug delivery studied by nuclear magnetic resonance and calorimetric techniques*
- 2004 Scientific advice with Fidia Farmaceutici SpA *Viscosity properties of therapeutic gels*
- 2004 Co-I PRIN *New polymeric bioactive materials for tissue engineering. Synthesis and characterization by nuclear magnetic resonance and thermal analysis*
- 2006 Co-I PRIN *Bioactive materials based on polyesters: synthesis, modifications and characterization*
- 2006 P.I. of research project with Bridgestone Technical Center Europe *Study on sulfur blooming of crude elastomeric compounds*
- 2005 P.I. of research project with Fidia Farmaceutici SpA *Determination of mechanical and viscous properties of gels*
- 2008 P.I. of research project with Bridgestone Technical Center Europe *Study and evaluation of surface tension of water-rubber suspensions*
- 2012 P.I. Progetto Ricerche di Ateneo Sapienza *Preparation and evaluation of buckypaper-based composite prostheses for abdominal surgery*
- 2013 P.I. of Department of Chemistry for research project POR Abruzzo (POR FESR Abruzzo 2007-2013) *Application of new bio-adhesive materials for medical devices*
- 2014 P.I. of research project with Chimec SpA *Effects of new surfactants on water-organic liquids interface tension*
- 2017 – 2019 Participant to REsources from URban Blo-waSte (RES URBIS) (GA 7303499) project in the European Horizon 2020 (Call CIRC-05-2016) program *Extraction and characterization of poly(hydroxy alkanoate)s from mixed microbial cultures*
- 2002-2018 Co-I of Progetti Ricerche di Ateneo Sapienza
- 2019-2022 Participant to European Project Horizon2020 USABLE Packaging (Unlocking the potential of Sustainable Biodegradable packaging); Grant Agreement: 836884 ;
- 2023- current Participant to European Project Horizon Europe AgriLoop (Pushing the frontier of circular agriculture by converting residues into novel economic, social and environmental opportunities); Grant Agreement: 101081776.

PUBLICATIONS

Scopus Author ID: 16167069300; Orcid ID 0000-0002-6401-9988

Author of: 106 documents indexed in Scopus,

2 book chapters

140 communications to international and national congresses

Istitutional Activity

Member of the Teacher Boards of Doctorate in Mathematical Models for Engineering, Electromagnetics and Nanosciences

Chairman of the Stakeholder Committee of the Department of Chemistry

Member of the Placement Committee of Faculty of Mathematics, Physics, and Natural Sciences