

# SILVIA D'AURIA, PHD



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## PROFESSIONAL EXPERIENCES

- On going
- POST-DOCTORAL RESEARCH FELLOWSHIP**  
University of Parma, Dalcanale Group, Parma (IT)  
Management of a research group up to 5 people
- Reversibly Crosslinked **Liquid Crystal** Networks.
  - Study of **biocompatible crosslinked PLA**.
  - Design and development of different **Vitrimers**.
  - Preparation of non-covalent crosslinked phenoxy resin as **adhesives** for composite ply.
- Feb 23
- Jan 23
- PH.D. IN SCIENCE AND TECHNOLOGIES OF MATERIALS (STM)**  
University of Parma, Dalcanale Group, Parma (IT) - SABIC Technology center, Geleen (NL)  
Supervisor of bachelor and master students.  
Tutoring for students and educational laboratory support.
- **Non-covalent polymeric networks** for HVDC insulator.
  - **Compatibilization** of PE and EVOH for **food packaging** application.
  - Study of **metal (aluminum and steel) adhesion properties** of ionomers for the development of hot-melt and aging-resilient adhesives.
- Nov 19

## INTERNATIONAL EXPERIENCES

- Dec 23
- POST-DOCTORAL SECONDMENT**  
Consejo Nacional de Investigaciones Cientificas y Tecnicas, Mar del Plata (AR)- Prof. Hoppe
- Preparation and characterization of **epoxy-acid vitrimers** as new self-healable materials with **negative photochromism** triggered by the presence of spiropyran
- Oct 23
- Jul 22
- PH.D. IN STM**  
SABIC Technology center, Geleen (NL)- Dr. Vachon
- Aug 21
- Apr 19
- ERASMUS + TRAINEESHIP**  
University of Aix- Marseille, Institut de sciences moléculaires, Marseille (FR)- Prof. Amatore
- **Microwaves-assisted Synthesis** of silyl enol ether derivatives of 1,3-ketoaldehydes, via Wolff rearrangement.
  - **Enantioselective organocatalyzed** Mannich and aldolization reactions.
- June 19

## EDUCATIONAL CREDENTIAL

- Nov 23
- Qualification to practice as a Chemist achieved at the University of Parma.
- Mar 19
- MASTER'S DEGREE IN ORGANIC CHEMISTRY**  
University of Rome "Sapienza", Rome (IT)  
Graduated with 110/110 cum laude  
Experimental thesis in **organic synthesis**  
Supervisor Dr. Dannibale
- Preparation of **ferrocenyl derivatives of bile acids** as dispersing agents of carbon nanotubes to be employed in biosensor application.
  - Developing excellent capabilities in organic synthesis, **team working, and problem solving**.
- Jan 17
- Dec 16
- BACHELOR'S DEGREE IN CHEMISTRY**  
University of Rome "Sapienza", Rome (IT)  
Experimental thesis in organic synthesis  
Supervisor Dr. Dannibale
- Synthesis of some derivatives of the bile acids to obtain hydrogels and organogels.
- Oct 12

## PATENT AND PUBLICATIONS

- D'Auria et al., Polyethylene Based Ionomers as High Voltage Insulation Materials, Adv. Func. Mat. 2023, DOI: 10.1002/adfm.202301878
- D'Auria et al., Two-photon microscopy as a visual tool for polymer compatibilization monitoring: the PE-EVOH case, Soft Matter, 2023, DOI: 10.1039/d2sm01577c
- D'Auria et al., Polyethylene ionomers as thermally reversible and aging resilient adhesives, Eur. Polym. J. 2024, DOI: 10.1016/j.eurpolymj.2024.113000.
- Pourrahimi et al., Alternative Concepts for Extruded Power Cable Insulation: from Thermosets to Thermoplastics, Adv. Mat., 2024, DOI: 10.1002/adma.202313508
- DC Power cable insulation, SABIC Global Technologies B.V. (NL), 21POLY0080-EP-EPA, 2022
- PE-ionomer as metal adhesion promoter, SABIC Global Technologies B.V. (NL), 23POLY0061-EP-EPA, 2023

## CONFERENCES ATTENDED

- Poster presentation, D'Auria S., Anti-static polyolefin based ionomers for automotive application, Brightlands Polymer Days 2021, Eindhoven (NL).
- Poster presentation, D'Auria S., Two-photon microscopy as a visual tool for polymer compatibilization monitoring: the PE-EVOH case, EUPOC 2023 Dynamic Polymer Networks, Bertinoro (IT).

## TECHNICAL SKILLS

- Mastery of the main organic synthesis technique
- Mastery of several techniques for the characterization of little organic molecules and polymers:
  - NMR spectroscopy (Bruker 400 MHz, Jeol 600 MHz)
  - IR-ATR (FTIR Spectrum Perkin Elmer)
  - DSC (TA Instruments Q20), TGA (Perkin Elmer TGA 8000)
  - DMTA (TA Q800 DMA)
  - Tensile analysis (Zwick type Z020 tensile tester)
  - Rheology, frequency sweep, and temperature ramp mode (Anton Paar MCR702e Space rheometer)
  - MFI and GPC analysis
  - Polymer processing techniques: compression and injection molding, cast film, reactive extrusion.
- Effective dissemination of scientific data and results obtained through presentations, reports and scientific articles

## DIGITAL SKILLS

- Excellent knowledge of **Office Suite**, including Word, Excel and PowerPoint.
- Excellent knowledge of chemistry software like **Mestrenova, Chemdraw, Origin, TA Universal Analysis, TRIOS**.
- Excellent knowledge of Reaxys, Scifinder **database software**.

## SECONDARY ACTIVITIES & VOLUNTARY

- **AGESCI Scout Leader**, from 2013 until 2019
- Occasional activities with **CARITAS ITALIANA**
- **BLSD** training at Croce Rossa Italiana
- Experiences as scrutineer election
- Odd jobs like babysitting and homework support
- **Rhythmic gymnastics** at a competitive level, from 2001 to 2010
- Patent license B

## LANGUAGE SKILLS

- **ITALIAN – MOTHER TONGUE**
- **ENGLISH – B2 LEVEL**