

## PERSONAL INFORMATION

## Barbara Bosio



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🌐 <https://dicca.unige.it/rubrica/BarbaraBosio>

## EDUCATION

- 2000 **PhD in Chemical Engineering**  
Polytechnic of Turin (*consortium* with Genoa and Milan), IT
- 1996 **Master degree *summa cum laude* in Chemical Engineering**  
University of Genoa, IT

## JOB POSITION

- 2023 - ongoing **Full Professor**  
University of Genoa, IT  
▪ Research and teaching activities in Applied Physical Chemistry
- 2011 - 2023 **Associate Professor**  
University of Genoa, IT  
▪ Research and teaching activities in Applied Physical Chemistry  
(*firstly in Principles of Chemical Engineering*)
- 2006 - 2011 **Contract Professor**  
University of Trent, IT  
▪ Teaching activities in Principles of Chemical Engineering
- 2000 - 2011 **Contract Researcher**  
University of Genoa, IT  
▪ Research activities in Principles of Chemical Engineering

## INSTITUTIONAL ROLES

- 2017 - ongoing **International Maritime Organization (IMO, specialized agency of the United Nations)**  
▪ Scientific delegate as Italian flag administration for participation in the "Sub-Committee on Carriage of Cargoes and Containers" as fuel cell expert
- 2023 - ongoing **European Energy Research Alliance (EERA, European platform)**  
▪ Official representative of the University of Genoa
- 2023 - ongoing **CapLab - Electrochemical cells for Carbon Capture and Energy Transition (jointed laboratory with the company Ecospray)**  
▪ Co-founder and scientific coordinator
- 2023 - ongoing **ATENA, High Technology in Energy and Environment (high tech district)**  
▪ Delegated in the members' assembly by the Rector of the University of Genoa
- 2023 - ongoing **Joint Commission of the University of Genoa**  
▪ President of the Polytechnic School team
- 2024 - ongoing **Fondazione CARIGE (non-profit organization of social utility)**  
▪ Member of the Steering Committee
- 2013 - ongoing **Doctoral Course in Civil, Chemical and Environmental Engineering at the University of Genoa**  
▪ Member of the Teaching Committee

## WORK EXPERIENCE

## Scientific activity

**Topics and skills:**

- Traditional and innovative fields of the Process Engineering with particular interest in the interaction of technology and environment for the promotion of a sustainable development
- Electrochemical cells for “Gas to Power” as well as “Power to Gas” applications focusing on hydrogen as clean energy carrier
- Molten Carbonate Fuel Cells development for carbon capture applications
- Multiscale modelling, from microscopic phenomena investigation up to system process analysis
- Design of experiments, test execution and data analysis related to prototypes on a laboratory or pilot plant scale

**Supervisor of an average of 7 contract researchers per year**

## Teaching activity

**Actual courses:**

- Applied Physical Chemistry
- Diffusion phenomena in complex systems
- Multiscale models of electrochemical cells applied to energy transition

**Supervisor or co-supervisor of 12 PhD theses and of an average of 10 degree-theses per year**

## Research project management

**Scientific coordinator of national and international projects, for example:**

- 2026-2029: NEREUS, *Next-Generation Scalable Aem Electrolyzers As Sustainable Hydrogen Production System*, European project HORIZON EUROPE,
- 2026: *Experimental study and modelling of the behaviour of high-temperature electrolyzers fed with seawater*, project financed by ENEA,
- 2026: Pre-feasibility study for the application of Molten Carbonate Fuel Cells, project financed by ENI,
- 2022 - 2026: CALIPSO, Innovative high-power fuel cells for stationary and mobility applications, project financed by MASE,
- 2022 - 2026: NEST - Network 4 Energy Sustainable Transition, Spoke 4 “Clean Hydrogen and Final Uses”, national PNRR project,
- 2022 - 2026: RAISE - Robotics and AI for Socio-economic Empowerment, Spoke 3 “Sustainable environmental caring and protection technologies”, national PNRR project,
- 2020 - 2025: Molten Carbonate Fuel Cells industrial technology development. project financed by Ecospray Technologies,
- 2024 - 2025: CO2-STOP, Molten Carbonate Fuel Cells for maritime applications, project financed by FINCANTIERI,
- 2019 - 2022: Ad Astra - Harnessing degradation mechanisms to prescribe accelerated stress tests for the realization of lifetime prediction algorithms, European project HORIZON 2020,
- 2017 - 2020: Investigation of the phenomena occurring in Molten Carbonate Fuel Cells (MCFCs), project financed by Exxon Mobil Research and Engineering, USA,
- 2010 - 2014: Contex - MCFC catalyst and stack component degradation and lifetime fuel gas contaminant effects and extraction strategies, European project FCH JU, steering committee member
- 2006 - 2011: Study of molten carbonate fuel cell systems, project financed by Ansaldo Fuel Cells,
- 2007 - 2009: Biceps - Biogas integrated concept: a European program for sustainability, European project FP6
- 2006 – 2009: Use of hydrogen produced by crude residues gasification for the production of electricity through fuel cells, project financed by Isab Energy Services (ERG),
- 2003 – 2005: Irmatech - Integrated researches on materials technologies and processes to enhance MCFC in a sustainable development, European project FP5.

## Main research collaborations

DTU, Technical University of Denmark – Denmark; KIST, Korea Institute of Science and Technology – Korea; KTH, Royal Institute of Technology – Sweden; ParisTech, École Nationale Supérieure de Chimie – France; SARI, Shanghai Advanced Research Institute – China; ULiège, Université de Liège – Belgio; USAT, Universidad Católica Santo Toribio de Mogrovejo – Peru; University of Edinburgh – United Kingdom; WUT, Warsaw University of Technology – Poland; ENEA and CNR – Italy.

## PUBLICATIONS

**Author of more than 120 scientific papers, published in peer-reviewed journals or presented at international conferences (source: SCOPUS).**

Genoa, March 2026

In witness whereof,

  
Prof. Barbara Bosio