

Marcello Maria Bozzini

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in marcello-bozzini



Experience

Politecnico di Milano, PhD researcher in Chemical Engineering

- PhD researcher in the [SuPER team](#) at the Department of Chemistry, Materials and Chemical Engineering "Giulio Natta" with Prof. Flavio Manenti.
- Research activity focus on Waste-to-X technologies, methanol synthesis, process optimization and techno-economic assessment.

Milano, Italy
December 2022 – Present

Politecnico di Milano, Teaching Assistant – Chemical Plants II / Chemical Plants and Process Operation Management

- Held part of the lectures and practical exercises for the MSc course Chemical Plants II, later renamed Chemical Plants and Process Operation Management.
- Delivered teaching support for 4 consecutive academic years, supervising practical sessions, exercises, and applied industrial case studies.

Milano, Italy
December 2022 – Present

Instituto Superior Técnico, Lisbon, Visiting PhD researcher in Chemical Engineering

- Visiting PhD researcher in the [Cegist team](#), under the supervision of Prof. Ana Paula Barbosa Pova.
- Research activity focused on the development of the supply chain for the production and utilization of bio-methanol.

Lisbon, Portugal
September 2025 – Present

I.C. Borghetto Lodigiano and Belgioioso, Middle School Mathematics and Science Teacher

- Taught mathematics and science at lower secondary school (middle school) level.

Lombardy, Italy
September 2020 – June 2022

AVIS comunale di Belgioioso, President – Volunteer Blood Donor Association

- Elected president of the local AVIS (Italian blood donation association) chapter in Belgioioso.
- Coordinate and supervise all association activities, including donor outreach and volunteer engagement.
- Serve as the Quality Management Representative (QMR/RGQ), overseeing compliance with national quality standards and procedures.

Belgioioso, Italy
February 2021 – Present

Education

BSc Politecnico di Milano, Chemical Engineering

Design and investment cost comparison of integrated columns and heat exchangers in an Air Separation Unit (ASU) using three equations of state commonly adopted in Process Systems Engineering (PSE)., 99/110

Milan, Italy
September 2017 – October 2020

MSc Politecnico di Milano, Chemical Engineering

CORO (Capex/Opex Robust Optimizer) A Simulation-based Process Optimization software, 110/110

Milano, Italy
October 2020 – December 2022

Projects

FAT (Fattoria Autonoma Tabacchi)

- Operation and process engineering of an industrial demonstrative [biogas reforming plant](#) on site with WS Reformer and Smea Engineering.

Umbria, Italy
February 2023 - June 2024

ITT/ Brembana&Rolle/ HTE/ HBI/ Alfatest

- Basic Engineering of industrial scale units. Engineering Commissioning for laboratory-scale units.

Milano, Italy
April 2024 - Present

Saipem SpA

- Technology scouting on possible renewable production routes for offshore applications.

Fano, Italy
February 2024 - May 2024

PRIN 2022 - DIGITAL FOOD

- Development of data analysis tools and integrated process optimization for applications in the food industry.

Milano, Italy
October 2023- October 2025

Alcoplast Srl

- Optimization and efficiency improvement of the Vercelli industrial site through the identification of technical solutions, including the digitalization of industrial processes, and the devel-

Vercelli, Italy
October 2024- January 2025


opment of a feasibility plan.

Flexby – Project Funded by the European Union

- Basic engineering of an innovative process for fuel production from algae wastewater via microwave pyrolysis.

Milan, Italy
May 2024- Present

Publications

- Energy-efficient start-up optimization via digital twin for a vegetable broth sterilization process** Journal of Food Engineering, 2026
[10.1016/j.jfoodeng.2025.112822](https://doi.org/10.1016/j.jfoodeng.2025.112822) 
Marcello Bozzini, Marco Menegon, Alberto di Loreto, Gaia Lunari, Silvia Serena Mariani, Mattia Vallerio, Laura Piazza, Flavio Manenti
- A hybrid surrogate and simulation-based framework for efficient CapEx/OpEx optimization in complex chemical plants** Chemical Engineering and Processing - Process Intensification, 2026
[10.1016/j.cep.2025.110638](https://doi.org/10.1016/j.cep.2025.110638) 
Luis Felipe Sanchez, *Marcello Bozzini*, Mattia Vallerio, Flavio Manenti
- Comparative techno-economic analysis on a biogas reforming plant: Case study on partial upgrading with a pressure swing water absorption** Chemical Engineering Science, 2026
[10.1016/j.ces.2025.122602](https://doi.org/10.1016/j.ces.2025.122602) 
Loretta Salano, *Marcello Bozzini*, Emanuele Moioli, Flavio Manenti
- Techno-Economic-Assessment of the Methanol Synthesis from Captured Co2 and Modular Nuclear Power-Based Electrolysis** Journal of CO₂ Utilization, 2025
[10.1016/j.jcou.2025.103186](https://doi.org/10.1016/j.jcou.2025.103186) 
Marcello Bozzini, Margherita Signorelli, Emanuele Moioli, Flavio Manenti
- Analysis of a methanol synthesis reactor operating in non-isothermal cooling conditions** Fuel Processing Technology, 2025
[10.1016/j.fuproc.2025.108288](https://doi.org/10.1016/j.fuproc.2025.108288) 
Grazia Leonzio, Giovanni Manenti, *Marcello Bozzini*, Roberto Baratti, Flavio Manenti
- Sustainability-Oriented Process Optimization for Biogas to Methanol: Balancing Safety, Economics, and Environmental Parameters** Industrial & Engineering Chemistry Research, 2025
[10.1021/acs.iecr.5c00494](https://doi.org/10.1021/acs.iecr.5c00494) 
Giuseppe Andriani, Loretta Salano, *Marcello Bozzini*, Paolo Mocellin, Flavio Manenti, Chiara Vianello
- Integration of an Autothermal Outer Electrified Reformer Technology for Methanol Production from Biogas: Enhanced Syngas Quality Production and CO₂ Capture and Utilization Assessment** Processes, 2024
[10.3390/pr12081598](https://doi.org/10.3390/pr12081598) 
Loretta Salano, *Marcello Bozzini*, Simone Caspani, Giulia Bozzano, Flavio Manenti

Others

Software: Microsoft Office, Aspen HYSYS, Aspen Plus, Unisim, AVEVA Process Simulation, AVEVA Dynamic Simulation, JMP, Origin, Visual Studio, Visual Studio Code, GitHub,
Programming: Python, MatLab, C++, Visual Basic (VBA and VB.NET), LaTeX
Languages: **English:** IELTS (International English Language Testing System) – Overall Band Score: 7.0/9, **Italian:** Native Proficiency
Soft Skills: Leadership, Team player, Communication, Problem-Solving, Analytical Thinking, Strong work ethic
Interests: Travelling, Tennis, Reading, Voluntary work

Autorizzo il trattamento dei dati personali nelle modalità previste dal Regolamento UE 2016/679

Milan, February 5, 2026

Marcello Maria Bozzini