OLGA MUCCIOLI

CURRICULUM VITAE

WORK EXPERIENCE

• March 2025 – Ongoing

Co-founder of Proceed S.r.l. (Academic Spin-off) - Processes and Catalysis for Energy and Environmental Depollution

University of Salerno, Fisciano (SA), ITALY

Overview of the Spin-off: development of high-performance catalysts, chemical reactors, and modeling tools to support industrial decarbonization and process innovation.

Activities:

- Design and production of high-performance catalysts
- Mathematical and CFD modeling of reaction kinetics and transport phenomena (COMSOL, MATLAB)
- Experimental testing of catalytic processes
- Design and construction of lab-scale and pre-pilot reactors
- Electrified and externally heated reactor systems
- Physicochemical characterization of materials
- Strategic and technical consulting for industrial process innovation

• October 2024 – Ongoing

Research Fellow – Sapienza University

Chemical Engineering Materials Environment Department, Sapienza University, Rome (RM), ITALY

Project Title: Carbon dioxide capture via nano-adsorbents and subsequent catalytic conversion

• October 2021 – October 2024

Ph.D. Degree, Industrial Engineering – University of Salerno

Industrial Engineering Department, University of Salerno, Fisciano (SA), ITALY

Final evaluation: Excellent

New electrified catalysts for process intensification and environmental sustainability – Application of microwaves and Joule effect as innovative heating methods to the catalytic dehydrogenation of propane to propylene.

• February 2021 – August 2021

Internship - AC Industrial Components Srl

R&D activities at AC Industrial Components srl, Castel San Giorgio (SA), ITALY

- Analysis of materials and applications of industrial conveyor belts;
- development of a new material resources planning (MRP);
- Structuring articles and categories for SEO (search engineering optimisation);

- Advanced use of Microsoft Excel for data analysis;
- Development of business processes;
- In-depth study on automatic handling systems and mechanical components.

ACADEMIC STUDIES AND ACTIVITIES

• August 2024

Guest Editor Assistant of Special Issue
Journal: Catalysts – Open Access Journal by MDPI
Title: Current Status and Future Aspects of Bimetallic and Trimetallic Catalysts

• January 2024

GRICU PhD School
14-19 January 2024, Bardonecchia (TO), ITALY
Topic: Surface and interface chemical engineering; digital tools for chemical engineering.

• July 2023

Online course with final exam - Formazione Lavoratori Rischio Basso
University of Salerno, Fisciano (SA), ITALY

• April 2023

Course with final exam - From Idea to Multiscale analysis in Chemistry: modelling and simulation of chemical kinetics
11-14 April 2023; Held by Ghent University (Belgium) at Ischia (SA), ITALY

• January 2023

Abilitazione alla professione di Ingegnere – Sezione A – Settore Ingegneria Industriale
31 January 2023; University of Salerno, Fisciano (SA), ITALY
Final mark: 50/50

• November 2022

Course with final exam - Energy sustainability and sustainable energy technologies
Held by Ontario Tech University (Canada) at Università di Salerno, Fisciano (SA), ITALY

• October 2022

DAET Online PhD School
13-28 October 2022, Università di Salerno, Fisciano (SA), ITALY
Topic: Process decarbonization and energy transition

• July 2022

GRICU PhD School
06-09 July 2022, Ischia (SA), ITALY
Topic: Catalysis and Catalytic Reaction Engineering, Electrochemical Energy Conversion and Storage

• March 2022

Online course with final exam – Discrete event simulation to model industrial systems
Held by University of Perugia, ITALY

• February 2022

Smart Industry 4.0 PhD School
University of Salerno, Fisciano (SA), ITALY
Come scrivere un progetto Europeo
Project: Hybrid System implementation – Photovoltaic plant coupled with natural gas/hydrogen turbine for energy supply and carbon emissions reduction.

• July 2021

Master's degree – Chemical Engineering
University of Salerno, Fisciano (SA), ITALY
Final mark: 110/110
Thesis: "Microwave-assisted catalytic decomposition of N_2O" in collaboration with *Air Liquide* company.
Analysis of scientific literature data; preparation and characterization of powder and structured Catalysts.
Characterization techniques: SEM, XRD, XRF, Hg porosimetry, physical characterization with adsorption and desorption of N at 77 K, ultrasound adhesion test.
Test of catalytic activity carrying out heating the reaction system using two methods: conventional external heating and microwave irradiation.

• **March 2020**	**Erasmus for traineeship** Universidad de Sevilla, CSIC – Instituto de Ciencia de Materiales de Sevilla, SPAIN Activity: Synthesis, characterization and testing of supported catalysts active in the CO_2 reduction to valuable chemicals
• **December 2017**	**Bachelor's degree – Chemical Engineering** University of Salerno, Fisciano (SA), ITALY Final mark: 100/110 Thesis: Study of nickel-based catalysts for the methanation reaction from CO_2

PERSONAL SKILLS AND COMPETENCIES.

LANGUAGE	**ITALIAN**
OTHER LANGUAGES	
	ENGLISH
• Reading	C1
• Writing	C1
• Listening	C1
SOFT SKILLS	COMMITMENT TO ACHIEVE GOALS; SPIRIT OF INITIATIVE; PROACTIVITY; TRUSTWORTHINESS; AUTONOMY; CREATIVITY; TEAMWORK; COMMUNICATION; DYNAMISM; ADAPTABILITY; SELF-CONFIDENCE.
TOOLS AND TECHNOLOGY SKILLS	ORIGIN, ASPEN PLUS, COMSOL MULTIPHYSICS, GASEQ, AUTOCAD, LABVIEW, SOLIDWORKS, MATLAB, MOLDFLOW.
DRIVING LICENCE	B/car

SCIENTIFIC CURRICULUM

Participation in European projects:

- **PLUG-IN** Process for low-carbon blue & green hydrogen generation via intensified electrified reforming of natural gas/biogas
- **MACBETH** Research and Innovation Programme - Development of innovative catalysts for the process intensification of the propane dehydrogenation reaction realized by integrating a dense membrane for the H2 removal.

Conferences

- **ICSET 2025 –** International congress on sustainable energy and related technologies, Lipari, ITALY
  Oral contribution about Electrified structured catalysts for high selective dehydrogenation of propane to propylene

- **CHISA 2024 –** International Conference of Chemical and Process Engineering, Prague, CZECH REPUBLIC
  Oral contribution about Electrified catalysts for the direct dehydrogenation of propane to propylene: sustainability and process intensification.

- **E2DT 2023 –** International Conference on Energy, Environment and digital transition, Palermo, ITALY
  Oral contribution about Microwave-assisted catalytic dehydrogenation of propane to propylene.

- **GIC2023 –** International conference on Catalysis as a golden lighthouse for green chemistry and energy-related technologies.
  Poster contribution about Microwave-assisted catalytic dehydrogenation of propane to propylene.

- **E2DT 2022 –** International Conference on Energy, Environment and digital transition, Milan, ITALY
  Oral contribution about Catalytic decomposition of N2O over nickel-cobalt mixed oxides – MW-heating technology.

- **ANM 2022 –** International conference on advanced nano materials, Aveiro, PORTUGAL
  Oral contribution about: Microwave-assisted dehydrogenation of propane to propylene.
  Poster contribution about: Hydrotalcite-based catalysts for propane dehydrogenation reaction.

Publications of journal articles:

- **O. Muccioli**, E. Meloni* and V. Palma, Microwave-susceptible structured catalysts for highly selective dehydrogenation of propane to propylene, Chemical Engineering Journal, **2025**, 520, 166082. DOI: 10.1016/j.cej.2025.166082

- C. Ruocco, E. Meloni*, **O. Muccioli***, V. Palma, Intensified methanol steam reforming over active and stable CeO2-Al2O3 supported catalysts, Fuel Processing Technology, **2025**, 272, 108212. DOI: 10.1016/j.fuproc.2025.108212

- **O. Muccioli**, C. Ruocco* and V. Palma, Bimetallic and Trimetallic Catalysts Advancements in the Conventional and MW-Assisted Propane Dehydrogenation Process, Catalysts **2024**, 14, 950. DOI: 10.3390/catal14120950

- **O. Muccioli**; E. Meloni*; S. Renda; M. Martino, F. Brandani; P. Pullumbi; V. Palma; NiCoAl-Based Monolithic Catalysts for the N2O Intensified Decomposition: A New Path towards the Microwave-Assisted Catalysis. Processes **2023**, 11, 1511. DOI:10.3390/pr11051511

- E. Meloni*, M. Martino, S. Renda, **O. Muccioli**, P. Pullumbi, F. Brandani, V. Palma, Development of Innovative Structured Catalysts for the Catalytic Decomposition of N2O at Low Temperatures, Catalysts **2022**, 12, 1405. DOI: 10.3390/catal12111405

- **O. Muccioli***, E. Meloni, M. Martino, S. Renda, P. Pullumbi, F. Brandani, V. Palma, Decomposition of N2O over NixCo3-xO4 Catalyst, Chemical Engineering Transactions, **2022**, 96, 283-288. DOI:10.3303/CET2296048

Updated on October 2025

Autorizzo il trattamento dei miei dati personali presenti nel curriculum vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 e del GDPR (Regolamento UE 2016/679).