Curriculum vitae di *Emilia Paone*

Sottosettori ERC primari (max 3): *PE4 and PE8*
Eventuali sottosettori ERC secondari (max 3): *PE4_10 Heterogeneous catalysis*

PERSONAL DETAILS

Family name, First name: Paone, Emilia
Birthdate: 14/09/1990
Researcher unique identifier(s): 0000-0001-8184-750X
URL for web site: https://unirc.unifind.cineca.it/resource/person/1275

- **Education and key qualifications**

16/04/2019 PhD
Ph.D. in Civil, Environmental and Safety Engineering (XXXI Cycle)
Università degli Studi Mediterranea di Reggio Calabria/ Italy

2015 Master
Chimica/Università degli Studi di Messina/ Italy

- **Current position(s)**

2024 - present Fixed-Term Researcher RTD-B
Università degli Studi Mediterranea di Reggio Calabria/ Italy

- **Previous position(s)**

2022 - 2024 Fixed-Term Researcher RTD-A
Università degli Studi Mediterranea di Reggio Calabria/ Italy
2019 - 2021 Post-Doctoral Researcher Fellow
Università degli Studi Mediterranea di Reggio Calabria/ Italy
Università degli Studi di Firenze

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

Research achievements

Emilia Paone is author of 43 peer-reviewed publications in international journals and 2 book chapters.
Her research focuses on heterogeneous catalysis for the sustainable transformation of waste and biomass into value-added products. She has contributed to the development of innovative catalytic systems and processes aligned with the circular economy, particularly in the fields of lignocellulosic biorefinery (lignin-first biorefinery), plastic upcycling and e-waste valorization and reuse.
Bibliometric Indicators (Scopus, as of 30/07/2025):
Total citations: 2169
h-index: 21
Emilia research activities is attested by these 10 significant research outputs with a short explanation of their impact:

1. M. Ronda-Leal, A.M. Balu, R. Luque, F. Mauriello, A. Ricchebuono, C. Len, A. A. Romero, **E. Paone***

   Continuous Flow Production of γ-Valerolactone from methyl-levulinate promoted by MOF-derived Al_2O_3-ZrO_2/C catalysts, RSC Sustainablity, 2025, 3(5), 2273-2285.
   Significance: Introduces a continuous flow process for bio-based γ-valerolactone production using MOF-derived catalysts.
   Role: Corresponding author; led catalyst development and continuous flow testing.

2. Paone E.*, M. Miceli, A. Malara*, G. Ye, E. Mousa, E. Bontempi, P. Frontera, F. Mauriello
Direct Reuse of Spent Lithium-Ion Batteries as an Efficient Heterogeneous Catalyst for the Reductive Upgrading of Biomass-Derived Furfural, ACS Sustainable Chemistry & Engineering, 2022, 10, 2275−2281
Significance: Demonstrates direct reuse of Li-ion batteries as active catalysts in biomass conversion.
Role: First and corresponding author; designed the catalyst recovery process and reaction application.

3. Paone E.*, F. Fazzino, D.M. Pizzone, A. Scurria, M. Pagliaro, R. Ciriminna, P.S. Calabrò
Towards the Anchovy Biorefinery: Biogas Production from Anchovy Processing Waste after Fish Oil Extraction with Biobased Limonene, Sustainability, 2021, 13, 2428
Significance: Integrates green solvent extraction and anaerobic digestion to enhance fish waste valorization.
Role: Coordinated the experimental activity and contributed to process optimization.

4. Paone E.*, A. Beneduci, G.A. Corrente, A. Malara, F. Mauriello
Hydrogenolysis of aromatic ethers under lignin-first conditions, Molecular Catalysis, 2020, 497, 111228
Significance: Proposes selective cleavage of lignin-derived ethers for integrated lignocellulosic biorefineries.
Role: First author; led catalyst design and reaction mechanistic studies.

5. Xu C., **Paone E.**, Rodríguez-Padrón D., Luque R., Mauriello F.
Recent catalytic routes for the preparation and the upgrading of biomass derived furfural and 5-hydroxymethylfurfural, Chem Soc Rev, 2020, 49, 4273-4306
Significance: Comprehensive review on recent catalytic strategies for furanic platform molecule valorization.
Role: Co-author; structured the review, contributed to drafting and reviewing the catalytic sections.

6. Paone E., Tabanelli T., Mauriello F.
The rise of lignin biorefinery, Current Opinion in Green and Sustainable Chemistry, 2020, 24, 1-6
Significance: Highlights emerging strategies and challenges in lignin valorization.
Role: First author; structured the review, conducted literature analysis, proposed strategic perspectives and provided insight into future trends.

7. Paone E.*
Young Ideas in Green and Sustainable Catalysis, Current Opinion in Green and Sustainable Chemistry, 2021, 32, 100559
Significance: Editorial introducing a special issue dedicated to early-career researchers in green and sustainable catalysis, aimed at promoting innovative ideas and giving visibility to emerging scientists in the field.
Role: Sole author and guest editor; originated the concept and coordinated the involvement of young researchers as author.

8. Mauriello F., Ariga-Miwa H., **Paone E**., S. Takakusagi, K. Asakura
Transfer hydrogenolysis of aromatic ethers promoted by the bimetallic Pd/Co catalyst, Catalysis Today, 2020, 357, 511-517
Significance: Describes an efficient method for lignin model compound degradation via bimetallic catalysis.
Role: Contributed to catalytic performance evaluation and results analysis.

9. Mauriello F., **Paone E.**, Pietropaolo R., A.M. Balu, R. Luque
Catalytic transfer hydrogenolysis of lignin derived aromatic ethers promoted by bimetallic Pd/Ni systems, ACS Sustainable Chemistry & Engineering, 2018, 6(7), 9269-9276
Significance: Demonstrates high-efficiency catalysts for selective depolymerization of lignin-derived ethers.
Role: Co-author; responsible for catalyst preparation and testing.

10. Paone E., Espro C., Pietropaolo R., Mauriello F.
Selective arene production from transfer hydrogenolysis of benzyl phenyl ether promoted by a co-precipitated Pd/Fe_3O_4 catalyst, Catalysis Science & Technology, 2016, 6(22), 7937-7941

Significance: Early work showing selective arene synthesis from aromatic ethers using Pd/Fe_3O_4 catalysts.
Role: First author; conducted most of the experimental work and data analysis.

Peer recognition

Awards & Recognition

Research Junior Prize 2024
for research activity in the green and sustainable chemistry, granted by the Interdivisional Green Chemistry and Sustainable Chemistry Group of SCI (Italian Chemical Society)

"Young Talent" label"
on the occasion of 18th International Congress on Catalysis (ICC 2024).
Recognition of emerging scientific profiles at one of the world's most prestigious events in catalysis

Premio Telesio 2022
for young researcher distinguished in the in the field of Chemical Sciences in Southern Italy, granted by Calabria section of SCI (Italian Chemical Society)

Research Junior Prize 2022
for successful research activity in the catalysis field, granted by the Interdivisional Catalysis Group of SCI (Italian Chemical Society)

INSTM@ New-Times Prize
for the scientific production, awarded on the occasion of the NewTimes - 1st International Virtual Conference and funded by INSTM (Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali).

Premio "Adolfo Parmaliana" 2020
for the Best PhD Thesis in the field of catalysis for sustainable development, granted by the Interdivisional Catalysis Group of SCI (Italian Chemical Society)

EYCA 2020 (European Young Chemists' Award 2020)
Silver Medal – PhD level
granted by the European Chemical Society (EuChemS), for excellent research carried out by a junior scientist working in Chemistry

The Best "AICIng" PhD Thesis Award (2020)
granted by AICIng (Italian Association of Chemistry for Engineering)

Pietro Bucci Medal 2019
for the PhD Thesis granted by Calabria section of SCI (Italian Chemical Society)

Editorial Roles
Editorial Board Member for:
- Current Opinion in Green and Sustainable Chemistry (since 2021)
- Molecular Catalysis (Early-Career Editorial Board, since 2022)
- Sustainable Chemistry (since 2021)
- Frontiers in Chemistry (since 2023)

Invited Speaker at:
- Workshop del Gruppo Interdivisionale di Green Chemistry-Chimica Verde (Turin, 24-25 October 2024)
- International Congress on Catalysis (ICC 2024) - "Young Talent" Invited Contribution (Lyon, 14-19 July 2024)
- Convegno Congiunto delle sezioni Sicilia-Calabria della Società Chimica Italiana (SCI) (Palermo, 11-12 December 2023)
- XXII Congresso Nazionale di Catalisi - GIC 2022 (Riccione, 11-14 September 2022)
- XII Congresso Nazionale AICIng 2021 (AICIng 2021)

- Scuola di Chimica Industriale 2023 (Turin, 28 May -1 June 2023) –
  Taught a PhD-level lecture titled: "Waste Materials in the Circular Economy"
  National doctoral school organized by the Divisione di Chimica Industriale (SCI), aimed at advanced training in sustainable industrial chemistry.

Roles in Scientific Societies

- Board-Member of Division of Industrial Chemistry of Società Chimica Italiana (Role of Secretary)
- IUPAC Young Observer" (Italian) for 2024-2025
- Delegate and Team Member of the European Young Chemists' Network (EYCN) (2022-2024)
- Board-Member of Gruppo Giovani of Società Chimica Italiana (2019-2024)

ADDITIONAL INFORMATION

Other contributions to the research community

Emilia Paone has made significant contributions to the research community beyond her scientific achievements. She currently serves as the scientific advisor and principal investigator for a collaborative research project with R.ED.EL. S.r.l., focused on the recovery and valorization of electrical and electronic waste. This project exemplifies her engagement with industry and her role in promoting the circular economy through applied research.

Emilia has played an active leadership role in the Italian Chemical Society (SCI), having served two consecutive terms (2019–2024) on the national board of the Young Group, where she represented the Division of Industrial Chemistry. Since 2025, she has continued her involvement as Secretary of the same division, contributing to the strategic direction and community-building efforts within the field.

She has held editorial board positions in several international journals, including *Current Opinion in Green and Sustainable Chemistry*, *Sustainable Chemistry*, *Frontiers in Chemistry*, and *Molecular Catalysis*. Her editorial work also includes roles as Guest Editor and Topic Editor, supporting the dissemination of innovative research in green and sustainable catalysis.

In addition to her publishing and editorial efforts, Emilia serves as a reviewer for numerous high-impact journals and as evaluator for competitive national and international research funding programs, such as the American Chemical Society Petroleum Research Fund, National Science Centre Poland and Università Italo-Francese.

She is actively engaged in teaching and outreach, both nationally and internationally. She has contributed to teaching activities under the Erasmus+ program and has organized and taught in doctoral courses related to circular economy and sustainable chemistry. Her outreach includes seminars and public engagement events, such as her invited seminar on sustainability at the University of Pisa.

Moreover, Emilia Paone has supervised and mentored students at all academic levels and has helped organize multiple national and international scientific congresses. These efforts, combined with her institutional service and industry collaboration, demonstrate her broad and lasting impact on the scientific community.

For more detailed information, please refer to the full CV at the following link:
Emilia Paone's CV

Career breaks, diverse career paths and major life events

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