CURRICULUM VITAE ET STUDIORUM

of Dr. Luigi Gurreri

Personal information

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Education and qualifications

- 07/10/2022-present: "Abilitazione Scientifica Nazionale" in "Settore concorsuale 09/D3 – Impianti e processi industriali chimici", "fascia II";
- 10/06/2021-present: "Abilitazione Scientifica Nazionale" in "Settore concorsuale 09/D2 – Sistemi, metodi e tecnologie dell'ingegneria chimica e di processo", "fascia II";
- 01/01/2012-31/12/2014: PhD in Chemical and Materials Engineering, with certification of *Doctor Europaeus*, at the University of Palermo, Palermo, Italy;
- 09/2007-11/2009: M. Sc. in Environmental Engineering, obtained on 20/11/2009 at the University of Palermo with honours (110/110 cum laude);
- 09/2001-05/2007: B. Sc. in Land and Environmental Engineering, obtained on 04/05/2007 at the University of Palermo (106/110);
- 09/96-07/2001: Secondary education diploma obtained at the Liceo Classico Empedocle in Agrigento, Italy (100/100).

Work experience

- 01/01/2022 – present: Assistant Professor ("Ricercatore a Tempo Determinato, tipo A") of Chemical Plants at the University of Catania, Department of Electric, Electronic and Computer Engineering, with project on "Smart systems for the production of energy and high added value compounds using algal and/or bacterial biomass reactors";
- 24/06/2021 – 31/03/2023: "Cultore della Materia" for the course of "Tecnologie a membrana per l'ingegneria biomedica" at the University of Palermo, Engineering Department;
- 04/05/2021 – 04/11/2021: Post-doctoral research on "*Mathematical modelling and numerical simulation of electrodialysis and reverse electrodialysis systems*", lasting 6 months, at the University of Palermo, Engineering Department;
- 20/06/2019-19/06/2021: "Cultore della Materia" for the courses of "Tecnologie a membrana per l'ingegneria biomedica" (membrane technologies for biomedical engineering) and "Operazioni di separazione a membrana" (membrane separation operations) at the University of Palermo, Engineering Department;

- 04/04/2019 – 03/04/2021: Post-doctoral research on "*Mathematical modelling and numerical simulation of electrodialysis and reverse electrodialysis systems*", lasting 24 months, at the University of Palermo, Engineering Department;
- 01/02/2017 – 31/01/2019: Post-doctoral research on "*Mathematical modelling of electrodialysis systems for sea and brackish waters desalination*", lasting 24 months, at the University of Palermo, Dipartimento dell'Innovazione Industriale e Digitale (DIID) - Ingegneria Chimica, Gestionale, Informatica, Meccanica;
- 21/07/2015 – 20/01/2017: Post-doctoral research on "*Membrane separation processes: CFD modelling and process simulation*", lasting 18 months, at the University of Palermo, Dipartimento di Ingegneria Chimica, Gestionale, Informatica, Meccanica;
- 27/04/2015 – 26/05/2015: Consulting work on "*Analysis and characterization of the thermofluidodynamic behaviour of spacer-filled channels for membrane distillation modules in presence of overlapped and woven spacers*", at the University of Palermo, Dipartimento di Ingegneria Chimica, Gestionale, Informatica, Meccanica;
- 01/01/2012 – 31/12/2014: PhD in Chemical and Materials Engineering, at the University of Palermo, Dipartimento di Ingegneria Chimica, Gestionale, Informatica, Meccanica; Thesis: *Computational fluid dynamics of reverse electrodialysis systems*;
- 21/06/2011 – 20/12/2011: post-graduated scholarship on "*Mathematical modelling and numerical simulation of reverse electrodialysis units*", lasting 6 months, at the University of Palermo, Dipartimento di Ingegneria Chimica, Gestionale, Informatica, Meccanica.

Teaching activity

Lectures:

1. Teacher of the course "Industrial Chemistry and Technologies", A.Y. 2024/2025, 29 hours, 3 CFU, SSD ING-IND/27, SC 09/D3, English, Università di Catania, master degree in Chemical Engineering for Industrial Sustainability;
2. Teacher of the course "Industrial Chemistry and Technologies", A.Y. 2023/2024, 58 hours, 6 CFU, SSD ING-IND/27, SC 09/D3, English, Università di Catania, master degree in Chemical Engineering for Industrial Sustainability;
3. Teacher of the course "Industrial symbiosis and circular economy in industrial engineering", A.Y. 2022/2023, 30 hours, 3 CFU, SSD ING-IND/25, SC 09/D3, Italian, Università di Catania, degree in Industrial Engineering;
4. Teacher of lessons on "Industrial symbiosis", A.Y. 2021/2022, 6 hours, SSD ING-IND/25, SC 09/D3, Italian, Università di Catania, second level master "MAnagemenT della Transizione Ecologica di Impresa (MATTEI)".

Tutorials for the following courses:

- A.Y. 2022/2023, "Chemical plants" (12 CFU, SSD ING-IND/25), 15 hours, participating in the exam commissions, Università di Catania, Departement of Civil Engineering and Architecture (DICAR), master degree in Chemical Engineering for Industrial Sustainability;
- A.Y. 2020/2021 e 2021/2022, "Membrane technologies for biomedical engineering" (6 CFU, SSD ING-IND/26), 23 hours, participating in the exam commissions, Università degli Studi di Palermo, Engineering Department, bachelor degree in Biomedical Engineering;
- A.Y. from 2018/2019 to 2020/2021, "Membrane separation operations" (6 CFU, SSD ING-IND/26), about 20 hours, participating in the exam commissions, Università degli Studi di Palermo, Engineering Department, bachelor degree in Chemical Engineering;
- A.Y. from 2018/2019 to 2021/2022, "Models for thermofluid dynamics" (6 CFU, SSD ING-IND/19) 24 hours, Università degli Studi di Palermo, Engineering Department, master degree in Energy Engineering.

Other didactics activity

Co-supervisor of:

- 4 theses for bachelor degree;

- 16 theses for master degree;
- 1 PhD thesis.

Speaker in seminars:
- 2017, "COMSOL Webinar: multi-physical simulation of electrochemical processes", 1 hour.

"Cultore della Materia":
- 24/06/2021 – 31/03/2023 for the course of "Tecnologie a membrana per l'ingegneria biomedica" at the University of Palermo, Engineering Department;
- 20/06/2019-19/06/2021 for the courses of "Tecnologie a membrana per l'ingegneria biomedica" and "Operazioni di separazione a membrana", at the University of Palermo, Engineering Department.

Professional skills

- Life cycle assessment, sustainability analysis of microalgae systems
- Computational fluid dynamics (CFD), simulation of transport phenomena and process modelling for electrodialysis, reverse electrodialysis and other membrane processes;
- Experimental testing of laboratory membrane units;
- Use of chemical and electrochemical laboratory instrumentation;
- Drafting and revising reports and scientific articles.

Computer skills

- Office suite (Excel, Word, Power Point) and Web browser.
- Technical software: SimaPro, ANSYS CFX, ANSYS WORKBENCH, ANSYS MECHANICAL, CAD.

Language skills

- Mother tongue: Italian.
- Good level of knowledge of written and spoken English.
- Basic user of French.

Conferences attended as presenter

1. *11th International Conference on Sustainable Solid Waste Management*, Rhodes, Greece, 19-22 June, 2024, oral presentation: L. Gurreri, G. Mancini, A. Luciano, M. Calanni Rindina, D. Bonanno, D. Fino, *Sustainability of microalgal industries: meta-analysis and prospects for the development of a viable bio-economy*;
2. *E2DT 2023 – 2nd International Conference on Energy, Environment & Digital Transition*, Palermo, Italy, 22-25 October, 2023, oral presentation: L. Gurreri, M. Calanni Rindina, A. Luciano, L. Falqui, G. Mancini, D. Fino, *Life Cycle Inventory based on primary data of an industrial plant for the cultivation of chlorella vulgaris*;
3. *10th International Conference on Sustainable Solid Waste management*, Chania, Greece, 21-24 June, 2023, oral presentation (on-line): L. Gurreri G. Mancini, A. Luciano, M. Calanni Rindina, L. Falqui, D. Fino, *Life cycle inventory of microalgae production in a real industrial plant*;
4. *European symposium on electrochemical engineering – ESEE – Electrochemistry for electrification and energy transition toward a sustainable future*, Leeuwarden, the Netherlands, 13-17 June, 2021, oral presentation (on-line): L. Gurreri, A. Cosenza, A. Zaffora, L. Muratore, D.A. Agnello, A. Tamburini, G. Micale, *Lab-scale experiments on a novel acid/base electrodialytic flow battery with bipolar membranes*;

5. *Membrane and electromembrane processes – MELPRO 2020*, Prague, Czech Republic, 08-11 November, 2020, oral presentation (on-line): A. Culcasi, A. Zaffora, A. Cosenza, M. Di Liberto, L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, *A validated multi-scale model of a novel electrodialytic acid-base flow battery*;
6. *Membrane and electromembrane processes – MELPRO 2020*, Prague, Czech Republic, 08-11 November, 2020, oral presentation (on-line): G. Battaglia, L. Gurreri, A. Cipollina, A. Tamburini, M. Ciofalo, A. Pirrotta, G. Micale, *A process model of electrodialysis including membrane deformation effects*;
7. *12th European Congress of Chemical Engineering ECCE 12*, Florence, Italy, 15-19 September, 2019, oral presentation: L. Gurreri, I. El Mokhtar, S. Al Tahar Bouguecha, M. La Cerva, A. Tamburini, A. Cipollina, M. Ciofalo, G. Micale, *Numerical simulations supporting process models of chemical engineering: applications for membrane systems*;
8. *Desalination for the Environment: Clean Water and Energy - Science, Research, Innovation, Industry, Business*, Athens, Greece, 3-6 September, 2018, oral presentation: M. La Cerva, L. Gurreri, A. Cipollina, A. Tamburini, M. Ciofalo, G. Micale, *Modelling hybrid systems for seawater desalination: electromembrane processes (RED, ARED and ED) coupled with RO*;
9. *Euromembrane* 2018, Valencia, Spain, 9-13 July, 2018, poster presentation: L. Gurreri, M. Di Liberto, L. Scelsi, A. Tamburini, A, Cipollina, M. Ciofalo, G. Micale, *CFD study on the influence of water transpiration on flow and mass transfer in channels with bipolar membranes*;
10. *Euromembrane* 2018, Valencia, Spain, 9-13 July, 2018, poster presentation: G. Battaglia, M. Ciofalo, A. Cipollina, A. Di Matteo, L. Gurreri, A. Pirrotta, A. Tamburini, G. Micale, *Mechanical-fluid dynamics coupled model for profiled Ion Exchange Membranes design*;
11. *Desalination for Clean Water and Energy Cooperation around the World*, Tel Aviv, Israel, 9-12 May, 2017, oral presentation: M. La Cerva, L. Gurreri, A. Cipollina, A. Tamburini, M. Di Liberto, M. Ciofalo, G. Micale, *Coupling CFD simulation with a simplified process model for reverse electrodialysis units*;
12. *International Conference on Membranes in Drinking and Industrial Water Production*, Leeuwarden, the Netherlands, 6-8 February, 2017, oral presentation: M. La Cerva, L. Gurreri, A. Cipollina, A. Tamburini, M. Ciofalo, G. Micale, *CFD simulation of Electrodialysis channels equipped with profiled membranes*;
13. *Desalination for the Environment: Clean Water and Energy*, Roma, Italy, 22-26 May, 2016, oral presentation: L. Gurreri, F. Santoro, G. Battaglia, A. Cipollina, A. Tamburini, G. Micale, M. Ciofalo, *Multi-physical modelling of Reverse ElectroDialysis*;
14. *Desalination for the Environment: Clean Water and Energy*, Roma, Italy, 22-26 May, 2016, poster presentation: L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, M. Ciofalo, *Heat-transfer performance comparison between overlapped and woven spacers for membrane distillation*;
15. *Euromembrane 2015*, Aachen, Germany, 6-10 September, 2015, poster presentation: L. Gurreri, F. Santoro, A. Cipollina, A. Tamburini, M. Ciofalo, G. Micale, *A multi-physics modelling tool for Reverse Electrodialysis*;
16. *Euromed 2015 - Conference and Exhibition on Desalination for Clean Water and Energy*, Palermo, Italy, 10-14 May, 2015, oral presentation: L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, M. Ciofalo, *Pressure drop in woven-spacer-filled channels for reverse electrodialysis: CFD prediction and experimental validation*;
17. *Second International Conference on Salinity Gradient Energy*, Leeuwarden, The Netherlands, 10-12 September, 2014, oral presentation: L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, M. Ciofalo, *CFD analysis of mass transfer in spacer-filled channels for reverse electrodialysis*;

18. *Conference and Exhibition on Desalination for the Environment, Clean Water and Energy*, Limassol, Cyprus, 11-15 May, 2014, oral presentation: L. Gurreri, M. Ciofalo, A. Cipollina, A. Tamburini, W. van Baak, G. Micale, *CFD modelling of profiled membranes channels for reverse electrodialysis*;
19. *International Workshop on Salinity Gradient Energy*, Milan, Italy, 4-6 September, 2012, oral presentation: L. Gurreri, A. Tamburini, A. Cipollina, M. Ciofalo, G. Micale, *CFD analysis of concentration polarization phenomena in spacer-filled channels for Reverse Electro-Dialysis*.
20. *Conference and Exhibition on Desalination for the Environment, Clean Water and Energy*, Barcelona, Spain, 22-26 April, 2012, oral presentation: L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, *Geometrical characterization of reverse electrodialysis stack via CFD simulations*, Conference and Exhibition on Desalination for the Environment.

Activities of conferences organization

- *Desalination for the Environment: Clean Water and Energy*, Roma, Italy, 22-26 May, 2016;
- *Euromed 2015 - Conference and Exhibition on Desalination for Clean Water and Energy*, Palermo, Italy, 10-14 May, 2015;
- *Conference and Exhibition on Desalination for the Environment, Clean Water and Energy*, Limassol, Cyprus, 11-15 May, 2014;
- *Conference and Exhibition on Desalination for the Environment, Clean Water and Energy*, Barcelona, Spain, 22-26 April, 2012.

Participation in editorial boards

Topical Advisory Panel member of the journal Membranes, 01 August 2021 - present;

Topic Editor of the journal Membranes, 09 November 2020 – 31 July 2021;

Guest Editor of the Special Issue "Electromembrane Processes: Experiments and Modelling" in Membranes (MDPI) https://www.mdpi.com/journal/membranes/special_issues/electromembrane_processes

Awards and prizes

- The scientific activities in which the undersigned has actively participated, relating to the production of electricity from saline gradients by means of Reverse Electrodialysis (activity subject of the European project REAPower) and the conversion of waste heat into electric current by means of a salinity gradient heat engine (called also closed-loop reverse electrodialysis) (activity covered by the European RED Heat-to-Power project) aroused the interest of the well-known Super Quark program with scientific content, which carried out two days of filming on the aforementioned activities. The service aired on the Italian national television channel RAI 1.

03-08-2016.

https://drive.google.com/file/d/1X2XhOuwpUyaUMHyLWJxckeGu3yISHFpe/view?usp=sharing

- Best paper award at the Engineering Department of the University of Palermo awarded to the article "A. Campione, L. Gurreri*, M. Ciofalo, G. Micale, A. Tamburini, A. Cipollina, *Electrodialysis for water desalination: A critical assessment of recent developments on process fundamentals, models and applications*. Desalination. 434 (2018) 121–160, https://doi:10.1016/j.desal.2017.12.044", second prize for the journal's normalized position in the ranking of the prestige indicator (subject category: water science and technology).

18-12-2019.

- The scientific review article "L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, *Electrodialysis Applications in Wastewater Treatment for Environmental Protection and Resources Recovery: A Systematic Review on Progress and Perspectives*. Membranes. 10 (2020) 146. https://doi:10.3390/membranes10070146" has been recognized as having high scientific value and used for illustration on the cover of an issue of the Membranes journal, MDPI, https://www.mdpi.com/2077-0375/10/7.

10/07/2020.

- Best poster award for the work "G. Battaglia, L. Gurreri, A. Tamburini, A. Pirrotta, A. Cipollina, M. Ciofalo, G. Micale, *A novel 2D process model of electrodialysis units in cross-flow layout for the assessment of membrane deformation effects*", presented at the conference "Desalination for the Environment: Clean Water and Energy, Las Palmas de Gran Canaria, Spain, 20 – 23 June, 2022".

23-06-2022.

Scientific activity

The experience gained in the field of scientific research in the period 2022-present has been mainly devoted to the sustainability assessment (LCA) of microalgal plants at the industrial scale, and to innovative civil and industrial wastewater treatment plants.

In the period 2009-2021, the scientific activity has been mainly oriented to the study of membrane processes, such as electrodialysis, reverse electrodialysis, and membrane distillation. In particular, the scientific activity has been focusing on:

- Computational fluid dynamics (CFD) simulation for membrane processes;
- Mathematical modelling of transport phenomena and process simulation of membrane systems;
- Experimental analysis of laboratory and prototype scale membrane units.

This scientific activity has been largely carried out in the framework of several national and international projects.

European projects

- LIFE PHARMA-DETOX – Demonstration of an innovative method for the detoxification of pharmaceutical wastewater from pharmaceutical facilities – LIFE Programme, LIFE20 ENV/CY/000615, https://pharmadetox.eu;
- SEArcularMINE – Circular Processing of Seawater Brines from Saltworks for Recovery of Valuable Raw Materials – Horizon 2020 Programme, Grant Agreement no. 869467, www.searcularmine.eu;
- BAoBaB – Blue Acid/Base Battery, Horizon 2020 programme, Grant Agreement no. 731187, www.baobabproject.eu;
- REvivED – Low energy solutions for drinking water production by a Revival of ElectroDialysis system – Horizon 2020 programme, Grant Agreement no. 685579, www.revivedwater.eu;
- RED-Heat-to-Power – Conversion of Low Grade Heat to Power through closed loop Reverse Electro-Dialysis – Horizon 2020 programme, Grant Agreement no. 640667, http://www.red-heat-to-power.eu;
- REAPower – Reverse Electrodialysis Alternative Power production – EU-FP7 Programme, Grant Agreement no. 256736, www.reapower.eu.

Italian projects

- SMARTEE-PLANTS – Smart Energy-Efficiency wastewater treatment Plants – Action 1.1.5 PO FESR Sicilia 2014-2020, project number 08CT3600000330, CUP G57H18002050006.

Leadership activity within EU projects

Responsibility of Work Packages of EU projects:

- SEArcularMINE – Circular Processing of Seawater Brines from Saltworks for Recovery of Valuable Raw Materials – Horizon 2020 Programme, Grant Agreement no. 869467, www.searcularmine.eu, responsible of WP7 Process modelling and development of a Simulation Platform;
- BAoBaB – Blue Acid/Base Battery, Horizon 2020 programme, Grant Agreement no. 731187, www.baobabproject.eu, responsible of WP4 System and grid integration;
- REvivED – Low energy solutions for drinking water production by a Revival of ElectroDialysis system – Horizon 2020 programme, Grant Agreement no. 685579, www.revivedwater.eu, responsible of WP6 Multi-stage ED and Integrated RED-ED system – pilot plant development and demonstration for SW desalination, and of WP7 Integrated ED/RED - RO system - pilot plant development and demonstration for SW desalination.

Research activity performed abroad

- At FUJIFILM Europe, Tilburg (The Netherlands), November-December 2015, on the experimental characterization of "breathing cell" dynamic systems of reverse electrodialysis units;
- At the University of Twente, Faculty of Science and Technology, Membrane Science & Technology group, Enschede (The Netherlands), April-July 2013, on the experimental investigation of limiting current phenomena in electromembrane processes.

Scientific production

The results of the performed scientific activity have been presented to the scientific community by the works listed below:

- **Articles indexed in Scopus and/or WoS**

1. A. Cosenza, S. Lima, L. Gurreri, G. Mancini, F. Scargiali, *Microalgae in the Mediterranean area: A geographical survey outlining the diversity and technological potential*, Algal Res. 82 (2024), 103669. https://doi.org/10.1016/j.algal.2024.103669;
2. L. Gurreri, M. Calanni Rindina, A. Luciano, L. Falqui, G. Mancini, *Life Cycle Assessment Based on Primary Data of an Industrial Plant for Microalgae Cultivation*, Chem. Eng. Trans. 109 (2024) 493-498. https://doi.org/10.3303/CET24109083;
3. L. Gurreri, M. Calanni Rindina, A. Luciano, L. Falqui, D. Fino, G. Mancini, *Microalgae production in an industrial-scale photobioreactors plant: A comprehensive Life Cycle assessment*, Sustain. Chem. Pharm. 39 (2024) 101598. https://doi.org/10.1016/j.scp.2024.101598;
4. A. Politano, R.A. Al-Juboori, S. Alnajdi, A. Alsaati, A. Athanassiou, M. Bar-Sadan, A.N. Beni, D. Campi, A. Cupolillo, G. D'Olimpio, G. D'Andrea, H. Estay, D. Fragouli, L. Gurreri, J. Gilron, N. Hilal, J. Occhiuzzi, M. Roldan Carvajal, A. Ronen, S. Santoro, M. Tedesco, R.A. Tufa, M. Ulbricht, D.M. Warsinger, G. Zaragoza, D. Xevgenos, Y.-W. Zhang, M. Zhou, E. Curcio, *2024 roadmap on membrane*

desalination technology at the water-energy nexus, J. Phys. Energy. 6 (2024) 021502. https://doi.org/10.1088/2515-7655/ad2cf2;

5. L. Gurreri, M. Calanni Rindina, A. Luciano, L. Falqui, G. Mancini, D. Fino, *Life cycle inventory based on primary data of an industrial plant for the cultivation of chlorella vulgaris*, Chem. Eng. Trans. 105 (2023) 229-234. https://doi.org/10.3303/CET23105039;
6. L. Gurreri, M. Calanni Rindina, A. Luciano, S. Lima, F, Scargiali, D. Fino, G. Mancini, *Environmental Sustainability of Microalgae-Based Production Systems: Roadmap and Challenges towards the Industrial Implementation*, Sustain. Chem. Pharm. 35 (2023) 10119.1 https://doi.org/10.1016/j.scp.2023.101191;
7. A. Culcasi, L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, *Performance and perspectives of an acid/base flow battery*, Chem. Eng. Trans. 100 (2023) 667-672 https://doi.org/10.3303/CET23100112;
8. N. Cancilla, L. Gurreri, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *Hydrodynamics and mass transfer in straight fiber bundles with non-uniform porosity*, Chem. Eng. Sci. 279 (2023) 118935. https://doi.org/10.1016/j.ces.2023.118935;
9. A. Culcasi, L. Gurreri, A. Tamburini, A. Cipollina, I.D.L. Bogle, G. Micale, *Improving efficiency and discharge power of acid-base flow battery via a bi-objective optimisation*, J. Energy Storage. 66 (2023) 107429. https://doi.org/10.1016/j.est.2023.107429;
10. A. Filingeri, L. Gurreri, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *Current distribution along electrodialysis stacks and its influence on the current-voltage curve: behaviour from near-zero current to limiting plateau*, Desalination. 556 (2023) 116541. https://doi.org/10.1016/j.desal.2023.116541;
11. N. Cancilla, L. Gurreri, M. La Rosa, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *Influence of bundle porosity on shell-side hydrodynamics and mass transfer in regular fiber arrays: A computational study*, Int. J. Heat Mass Transf. 203 (2023) 123841. https://doi.org/10.1016/J.IJHEATMASSTRANSFER.2022.123841;
12. A. Culcasi, L. Gurreri, A. Tamburini, I.D.L. Bogle, G. Micale, *A Bi-objective Optimization Study of an Acid-Base Flow Battery for High Efficiency and Improved Power Density*, Chem. Eng. Trans. 96 (2022) 133–138. https://doi.org/10.3303/CET2296023;
13. F. Giacalone, P. Catrini, L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, A. Piacentino, *Exergy analysis of electrodialysis for water desalination: Influence of irreversibility sources*, Energy Convers. Manag. 258 (2022) 115314. https://doi.org/10.1016/j.enconman.2022.115314;
14. A. Culcasi, L. Gurreri, A. Cipollina, A. Tamburini, G. Micale, *A comprehensive multi-scale model for bipolar membrane electrodialysis (BMED)*, Chem. Eng. J. 437 (2022) 135317. https://doi.org/10.1016/j.cej.2022.135317;
15. N. Cancilla, L. Gurreri, G. Marotta, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *Performance Comparison of Alternative Hollow-Fiber Modules for Hemodialysis by Means of a CFD-Based Model*, Membranes (Basel). 12 (2022) 118. https://doi.org/10.3390/membranes12020118;
16. L. Gurreri, M. La Cerva, J. Moreno, B. Goossens, A. Trunz, A. Tamburini, *Coupling of electromembrane processes with reverse osmosis for seawater desalination: Pilot plant demonstration and testing*, Desalination. 526 (2022) 115541, https://doi.org/10.1016/j.desal.2021.115541;
17. N. Cancilla, L. Gurreri, G. Marotta, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *A porous media CFD model for the simulation of hemodialysis in hollow fiber membrane modules*, J. Memb. Sci. 646 (2022) 120219, https://doi.org/10.1016/j.memsci.2021.120219;

18. I. El Mokhtar, L. Gurreri, A. Tamburini, A. Cipollina, M. Ciofalo, S. al Taher Bouguecha, G. Micale, *CFD prediction of flow, heat and mass transfer in woven spacer-filled channels for membrane processes*, Int. J. Heat Mass Transf., 173 (2021) 121246, https://doi.org/10.1016/j.ijheatmasstransfer.2021.121246;
19. L. Gurreri, A. Tamburini, G. Micale, Electromembrane Processes: Experiments and Modelling, Membranes (Basel). 11 (2021) 149. https://doi.org/10.3390/membranes11020149;
20. A. Culcasi, L. Gurreri, G. Micale, A. Tamburini, *Bipolar Membrane Reverse Electrodialysis for the sustainable recovery of energy from pH gradients of industrial wastewater: Performance prediction by a validated process model*, J. Environ. Manag. 287 (2021) 112319, https://doi.org/10.1016/j.jenvman.2021.112319;
21. L. Gurreri, A. Filingeri, M. Ciofalo, A. Cipollina, M. Tedesco, A. Tamburini, G. Micale, *Electrodialysis with asymmetrically profiled membranes: Influence of profiles geometry on desalination performance and limiting current phenomena*, Desalination. 506 (2021) 115001, https://doi.org/10.1016/j.desal.2021.115001;
22. N. Cancilla, L. Gurreri, G. Marotta, M. Ciofalo, A. Cipollina, A. Tamburini, G. Micale, *CFD prediction of shell-side flow and mass transfer in regular fiber arrays*, Int. J. Heat Mass Transf. 168 (2021) 120855, https://doi.org/10.1016/j.ijheatmasstransfer.2020.120855;
23. G. Battaglia, L. Gurreri, M. Ciofalo, A. Cipollina, I.D.L. Bogle, A. Pirrotta, G. Micale, *A 2-D model of electrodialysis stacks including the effects of membrane deformation*, Desalination 500 (2021) 114835, https://doi.org/10.1016/j.desal.2020.114835;
24. A. Culcasi, L. Gurreri, A. Tamburini, A. Cipollina, G. Micale, *Effect of Design Features and Operating Conditions on the Performance of a Bipolar Membrane-Based Acid/Base Flow Battery*, Chem. Eng. Trans., 86 (2021) 1387-1392, https://doi.org/10.3303/CET2186232;
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Catania, 22 October 2024 Signature