Dr. Giuseppe Antonio Elia

Current Address: C.so Duca degli Abruzzi 24, 10129 Torino – Italy
Phone: 0039 011 090 4643
email: giuseppe.elia@polito.it

CURRENT POSITION

January 2022 to Present – **Assistant Professor (RTDb)** at the DISAT Department of Applied Science and Technology – Politecnico di Torino (Torino, IT). Responsible for:

- Research and development of experimental activities in the advanced-Li-ion systems and post-Li (e.g., Zn-ion, Na-ion, Al-ion) fields within a multidisciplinary network comprising national and international partners.
- Technical management of national and international research projects.
- Cooperation in industrial funded projects.

OTHER PROFESSIONAL EXPERIENCES

- October 2020 to Present – Member of the **Editorial Board** of Journal of Power Sources, Elsevier.
- June 2021 to Present – **Early Career Researcher Board Member** for Materials Today Sustainability, Elsevier.
- May 2016 to Present – **Research Proposal Reviewer** for the European Commission within the Horizon 2020 program.
- January 2014 to Present – **Article Reviewer** for high impact factor peer-reviewed scientific journals. *137 verified reviews for 33 scientific journals.*

PAST EXPERIENCES

- March 2021 to December 2021 – **Lead Engineer** at the Warwick Manufacturing Group - University of Warwick (Warwick, UK). Responsible for:
  Coordinating the research activities on solid-state batteries within the UK-Innovate funded research project.
  Research and development of experimental activities in the advanced-Li-ion systems and post-Li (e.g., solid-state batteries) fields within a multidisciplinary network comprising national and international partners.
  Technical management of national and international research projects.
  Cooperation in industrial funded projects.
- *March 2019 to February 2021* – Senior Research Scientist within the "Electrochemistry for Batteries" research group of Prof. Stefano Passerini at the Helmholtz Institute Ulm (Ulm, Germany). Responsible for research activities on Calcium-based batteries within the EU-funded research project VIDICAT (*Versatile Ionomers for Divalent Calcium Batteries*). Research and development of experimental activities in the post-Li-ion (e.g., Li-metal) and post-Li (e.g., Na-, K-, Zn-, Ca-, Al-) fields within a multidisciplinary network comprising national and international partners. Technical management of national and international research projects.

- *November 2015 to February 2019* – Research Scientist at the Technische Universität Berlin (Germany) in the research group of Dr. Robert Hahn. Research and development of Al-batteries (project ALIBATT in collaboration with IoLiTec GmbH and ALION in collaboration with Torrecid, Varta Microbattery, Solvionic, Accurec Recycling GmbH and, Acciona S.A).

- *November 2014 to October 2015* – Postdoctoral researcher in Li-ion and Li-air batteries (project ABILE in collaboration with BMW group) at the "Sapienza" University of Rome (Italy) in the research group of Prof. Bruno Scrosati.
  - *June 2015 to October 2015* – Visiting Postdoctoral Researcher at the Helmholtz Institute Ulm (Germany), in the research group of Prof. Stefano Passerini.

- *November 2011 to December* 2014 – Graduate doctoral researcher in Chemistry (project advanced Li-ion and Li-air battery configuration in collaboration with Hanyang University, MEET Battery Research Centre, BMW Group, Evonik Industries AG) at the "Sapienza" University of Rome (Italy) in the research group of Prof. Bruno Scrosati.
  - *August 2014 to September 2014* – Visiting Graduate Doctoral Researcher at the Argonne National Laboratory, Chicago (USA).
  - *October 2013 to December 2013* – Visiting Graduate Doctoral Researcher at the Münster Electrochemical Energy Technology, Münster (Germany).

- *April 2013 to June 2013* – Visiting Graduate Doctoral Researcher at the Hanyang University, Seoul (South Korea).

EDUCATION

- Ph.D. (Chemistry): December 2014, "Sapienza" University of Rome, Department of Chemistry, Rome, Italy, Supervisor: Prof. Jusef Hassoun. Dissertation: "Moving from advanced lithium-ion battery to high energy lithium-air battery".
- M.Sc. (Chemical engineering): October 2011, "Sapienza" University of Rome, Department of Chemistry, Rome, Italy, Supervisor: Prof. Jusef Hassoun.

AWARDS & HONORS

- Metrohm M.Sc. degree prize, Electrochemical Division of the Italian Chemical Society, June 2012.
- Doctoral fellowship, Italian Ministry of Education, University and Research, September 2011.

TEACHING/SUPERVISING EXPERIENCE

2022-now	Professor, Chair of Chemistry (2 classes/year, avg. 420 students per class). High education, MIUR Sector CHIM/07 - Principles of chemistry for applied technologies
2017-2022	***Supervisor***: 2 graduate students, 2 Ph.D. students, 2 PostDocs, 2 Project Engineer
2022-2022	Collaboration in the lab course of "Chimica organica per l'ingegneria chimica e alimentare"
2008-2012	Assistant lecturer for the laboratory course of *"System of energy production and accumulation"* Chemistry Department "Sapienza" University of Rome

ACADEMIC HIGHLIGHTS, AWARDS, AND ACTIVITIES

- Habilitation as an associated professor for the Italian university system in the sector 03/A2, 03/B1 and 03/B2; i.e., Models and Methodologies for Chemical Science, Foundations of Chemical Sciences and Inorganic Systems, Fundamentals of Chemicals Technologies
- Chairman at the CIMTEC2018 conference in Perugia, Italy June 10-14, 2018 and at the 69th Annual ISE Meeting Bologna, Italy, 2-7 September 2018
- Guest editor for the special Issue "Novel Technologies for Metal-Ion and Metal Batteries" in Energies (MDPI)
- Recipient of the Metrohm Master's degree prize, for the best Master thesis, from the Elettrochemical Division of the Italian Chemical Society, June 2012
- Recipient "Jahresprämie" 2021. Award for outstanding scientific performance in 2020 conferred by KIT

TECHNICAL COMPETENCIES AND SKILLS

Practical and Theoretical Proficiency in:

- Coordination of research activities between international research institutes and industrial companies in the framework of EU funded projects.
- Research planning and coordination of beamtime campaigns at large-scale research facilities for XAS/XANES, SAXS, XRD and, XCT to investigate relevant material level metrics and correlate them to the cell performance, including design and realization of cell set-up for electrochemical operando measurements.
- Electrochemical methods of analysis and testing (e.g., cyclic voltammetry, galvanostatic cycling, differential capacity analysis, electrochemical impedance spectroscopy).
- Preparation and characterization of electrodes and electrolytes for metal-ion, metal batteries and supercapacitors, and of polymer-based electrolytes for lithium-ion, lithium-air, and aluminum batteries.
- Full- and half- cells assembly by using dry-box equipment (three- and two-electrodes Swagelok-type cells, coin cells, and EL-CELL type cells).
- Synthesis and production (including electrodeposition, electrophoretic deposition, sol-gel and, solid-state synthesis) of Li-ion, Zn-ion, Ca-ion and, Al-ion battery active materials.
- Thermal methods of analysis (scanning calorimetry and thermogravimetric analysis).
- Analytical techniques (Structural, morphological, chemical characterization, e.g., X-ray diffraction, X-ray photoelectron spectroscopy, Scanning electron microscopy).
- Computer Proficiency in Windows operative system, Office package, data analysis software (Origin), electrochemistry measurement software (Maccor, Basitec, EC-lab).

Theoretical Proficiency (e.g., data analysis) in:

Mass spectrometry, inductively coupled plasma analysis, Raman spectroscopy, transmission

electron microscopy, atomic force microscopy, IR spectroscopy, UV vis, NMR.

PATENTS

1. Patent Application Number WO2015173179A1 - *Lithium-Air-Battery.* In collaboration with BMW AG.
2. Patent application Number WO2019029815A1. – *Low-Polarization Lithium Oxygen Battery*. In collaboration with BMW AG.
3. Application Number FR2005766 (France-2020)– *Process for making a Gel Polymer Electrolyte, and use of such Gel Polymer Electrolyte in energy storage devices and for metal coating against corrosion.* In collaboration with Solvionic.

SCIENTIFIC PRODUCTION

Total Number of Publications: 50 (27 as first author, 20 as the corresponding author)

Peer-reviewed research paper – 43
Peer-reviewed review paper – 3
Peer-reviewed conference proceeding – 2
Book chapter – 2

Participation in 36 international conferences with posters or oral presentations (11 invited talks)

Impact of Research

h-index = 28 (Google Scholar, 15th June 2023)
Sum of Times Cited = 2850 (Google Scholar, 15th June 2023)

PUBLICATIONS LIST

1) *"A high capacity, template-electroplated Ni-Sn intermetallic electrode for lithium-ion battery"*
Jusef Hassoun, ***Giuseppe Antonio Elia*,** Stefania Panero, Bruno Scrosati,
Journal of Power Source (2011) 196, 7767–7770.
2) *"Mechanically milled, nanostructured Sn-C composite anode for lithium-ion battery"*
Giuseppe Antonio Elia, Stefania Panero, Alberto Savoini, Bruno Scrosati, Jusef Hassoun, **Electrochimica Acta** (2013) 90, 690–694.
3) *"Investigation of the carbon electrode changes during lithium-oxygen cell operation in a tetraglyme-based electrolyte"*
Giuseppe Antonio Elia, Jin-Bum Park, Bruno Scrosati, Yang-Kook Sun, Jusef Hassoun, **Electrochemistry Communication** (2013) 34, 250–253.
4) *"Electrochemical performance of a graphene nanosheets anode in a high voltage lithium-ion cell"*
Oscar Vargas, Alvaro Caballero, Julián Morales, ***Giuseppe Antonio Elia***, Bruno Scrosati, Jusef Hassoun,
Physical Chemistry Chemical Physics (2014) 15, 20444-20446.*"Role of the Lithium Salt in the Performance of Lithium–Oxygen Batteries: A Comparative Study"*
Giuseppe Antonio Elia, Jin-Bum Park, Yang-Kook Sun, Bruno Scrosati, Jusef Hassoun, **ChemElectroChem** (2014) 1, 47–50.
5) *"A New, High Energy Sn–C/Li[$Li_{0.2}Ni_{0.4/3}Co_{0.4/3}Mn_{1.6/3}$]$O_2$ Lithium-Ion Battery"*
Giuseppe Antonio Elia, Jun Wang, Dominic Bresser, Jie Li, Bruno Scrosati, Stefano Passerini, Jusef Hassoun,
ACS Applied Materials and Interfaces (2014) 6, 12956-12961.
6) *"An Advanced Lithium-Air Battery Exploiting an Ionic Liquid-based Electrolyte"*
Giuseppe Antonio Elia, Jusef Hassoun, Won-Jin Kwak, Yang-Kook Sun, Bruno Scrosati, Franziska Mueller, Dominic Bresser, Stefano Passerini, Philipp Oberhumer, Nikolaos Tsiouvaras, Jakub Reiter,
Nano Letters (2014) 14, 6572–6577.
7) *"Nanostructured tin-carbon/$LiNi_{0.5}Mn_{1.5}O_4$ lithium-ion battery operating at low temperature"*
Giuseppe Antonio Elia, Francesco Nobili, Roberto Tossici, Roberto Marassi, Alberto Savoini, Stefania Panero, and Jusef Hassoun,
Journal of Power Source (2015) 275, 227-233.
8) *"Polyethylene oxide electrolyte added by Silane-functionalized TiO_2 filler for lithium battery"*
Berhanu W. Zewde, ***Giuseppe Antonio Elia***, Shimelis Admassie, Jutta Zimmermann, Michael Hagemann, Christian Schulze Isfort, Bruno Scrosati, and Jusef Hassoun
Solid State Ionics (2014) 268, 174–178.
9) *"A lithium-ion oxygen battery using a polyethylene glyme electrolyte mixed with an ionic liquid"*
Giuseppe Antonio Elia, Rebecca Bernhard, Jusef Hassoun,
RSC Advances (2015) 5, 21360-21365.

10) *"A Polymer Lithium-Oxygen Battery"*
Giuseppe Antonio Elia, Jusef Hassoun,
Scientific Report (2015) 5, Article number: 12307.
11) *"High surface area, mesoporous carbon for low-polarization, catalyst-free lithium oxygen battery"*
Jun Ming, Jin-Bum Park, Hee-Soo Kim, Chong Seung Yoon, ***Giuseppe Antonio Elia***, Bruno Scrosati, Yang-Kook Sun, Jusef Hassoun,
Solid State Ionics (2015) 278, 133–137.
12) *"Interphase evolution of a lithium-ion/oxygen battery"*
Giuseppe Antonio Elia, Dominic Bresser, Jakub Reiter, Philipp Oberhumer, Yang-Kook Sun, Bruno Scrosati, Stefano Passerini, Jusef Hassoun
ACS Applied Materials and Interfaces (2015), 7, 22638–22643.
13) *"Characterization of a reversible, low-polarization sodium-oxygen battery"*
Giuseppe Antonio Elia, Ivana Hasa, Jusef Hassoun
Electrochimica Acta (2016), 191, 516-520.
14) *"A gel polymer membrane for lithium-ion oxygen battery*"
Giuseppe Antonio Elia (*corresponding author), Jusef Hassoun
Solid State Ionics (2016), 287, 22-27.
15) "*A Long-Life Lithium Ion Battery with Enhanced Electrode/Electrolyte Interface by Using an Ionic Liquid Solution*"
Giuseppe Antonio Elia, Ulderico Ulissi, Dominic Bresser, Franziska Mueller, Jakub Reiter, Nikolaos Tsiouvaras, Yang-Kook Sun, Bruno Scrosati, Stefano Passerini, Jusef Hassoun
Chemistry - A European Journal (2016), 22, 6808-6814.
16) "*An Overview and Future Perspectives of Aluminum Batteries*"
Giuseppe Antonio Elia (*corresponding author), Krystan Marquardt, Katrin Hoeppner, Sebastien Fantini, Rongying Lin, Etienne Knipping, Willi Peters, Jean-Francois Drillet, Stefano Passerini, Robert Hahn
Advanced Materials, (2016), 28, 7564–7579.
17) "*Exceptional long-life performance of lithium-ion batteries using ionic liquid-based electrolytes*"
Giuseppe Antonio Elia, Ulderico Ulissi, Sangsik Jeong, Stefano Passerini, Jusef Hassoun
Energy & Environmental Science, (2016),9, 3210-3220.
18) "*Insights into the reversibility of the aluminum graphite battery*"
Giuseppe Antonio Elia (*corresponding author), Ivana Hasa, Giorgia Greco, Thomas Diemant, Krystan Marquardt, Katrin Hoeppner, R. Jürgen Behm, Armin Hoell, Stefano Passerini and Robert Hahn
Journal of Materials Chemistry A, (2017), 5, 9682–9690
19) "*A SiOx-Based Anode in a High-Voltage Lithium-Ion Battery*"
Giuseppe Antonio Elia*, Jusef Hassoun*
ChemElectroChem, (2017), 4, 2164 – 2168
20) "*Development of micro batteries based on micro fluidic MEMS packaging*"
Robert Hahn, Marc Ferch, Katrin Hoeppner, Marco Queisser, Krystan Marquardt*,* ***Giuseppe Antonio Elia***
Design, Test, Integration and Packaging of MEMS/MOEMS (DTIP) (2017)
21) "*Micro patterned test cell arrays for high-throughput battery materials research*"
Robert Hahn, Marc Ferch, Katrin Hoeppner, Marco Queisser, Krystan Marquardt*,* ***Giuseppe Antonio Elia***
Design, Test, Integration and Packaging of MEMS/MOEMS (DTIP) (2017)

22) "*Polyacrylonitrile separator for high-performance aluminum batteries with improved interface stability*"
Giuseppe Antonio Elia (*corresponding author)**,** Jean-Baptiste Ducros, Dane Sotta, Virginie Delhorbe, Agnès Brun, Krystan Marquardt, Robert Hahn
ACS Applied Materials and Interfaces (2017), 9, 38381-38389
23) "*Low-polarization lithium oxygen battery using [DEME][TFSI] ionic liquid electrolyte*"
Ulderico Ulissi†*,* ***Giuseppe Antonio Elia*†*,*** Sangsik Jeong, Franziska Mueller, Jakub Reiter, Nikolaos Tsiouvaras, Yang-Kook Sun, Bruno Scrosati, Stefano Passerini, Jusef Hassoun
(† These authors equally contributed)
ChemSusChem, (2018), 11, 229 – 236
24) "*New Electrode and Electrolyte Configurations for Lithium-Oxygen Battery*"
Ulderico Ulissi†, ***Giuseppe Antonio Elia***†, Sangsik Jeong, Jakub Reiter, Nikolaos Tsiouvaras, Stefano Passerini, Jusef Hassoun
(† These authors equally contributed)
Chemistry - A European Journal, (2018), 24, 3178-3185

25) "*A new lithium-ion battery using 3D-array nanostructured graphene-sulfur cathode and silicon oxide-based anode*"
Almudena Benítez, Daniele Di Lecce, ***Giuseppe Antonio Elia***, Álvaro Caballero, Julián Morales, Jusef Hassoun
ChemSusChem, (2018), 11, 1512-1520
26) "*Characteristics of Li-ion micro batteries fully batch fabricated by micro-fluidic MEMS packaging*"
Robert Hahn, Marc Ferch, Neil Amponsah Kyeremateng, Katrin Hoeppner, Krystan Marquardt, ***Giuseppe Antonio Elia***
Microsystem Technologies, (2018) 1-9
27) "*Influence of the electrode nano/micro structure on the electrochemical properties of graphite in aluminum batteries*"
Giorgia Greco, Dragomir Tatchev, Armin Hoell, Michael Krumrey, Simone Raoux, Robert Hahn, ***Giuseppe Antonio Elia*** (*corresponding author)
Journal of Materials Chemistry A (2018), 6, 22673-22680
28) "*Recognizing the Mechanism of Sulfurized Polyacrylonitrile Cathode Materials for Li–S Batteries and beyond in Al–S Batteries*"
Wenxi Wang†, Zhen Cao†, ***Giuseppe Antonio Elia***†, Yingqiang Wu, Wandi Wahyudi, Edy Abou-Hamad, Abdul-Hamid Emwas, Luigi Cavallo, Lain-Jong Li, Jun Ming
(† These authors equally contributed)
ACS Energy Letters, (2018), 3, 2899–2907
29) "*An aluminum/graphite battery with ultra-high rate capability*"
Giuseppe Antonio Elia*(**corresponding author)**,** Neil Amponsah Kyeremateng, Krystan Marquardt, Robert Hahn
Batteries & Supercaps (2019), 2, 83–90
30) "*Separators and electrolytes for rechargeable batteries: Fundamentals and perspectives*"
Tina Nestler, Elsa Roedern, Nikolai F Uvarov, Juliane Hanzig, ***Giuseppe Antonio Elia***, Mateo de Vivanco
Physical Sciences Reviews, (2018) DOI: 10.1515/psr-2017-0115
31) *"Closed-loop hydrometallurgical treatment of end-of-life lithium ion batteries: Towards zero-waste process and metal recycling in advanced batteries"*
Thomas Abo Atia, **Giuseppe Antonio Elia**, Robert Hahn, Pietro Altimari, Francesca Pagnanelli
Journal of Energy Chemistry, (2019), 35. 220-227
32) *High-Power Na-Ion and K-Ion Hybrid Capacitors Exploiting Co-Intercalation in Graphite Negative Electrodes*
Xu Liu, **Giuseppe Antonio Elia** (*corresponding author), Bingsheng Qin, Huang Zhang, Peter Ruschhaupt, Shan Fang, Alberto Varzi, Stefano Passerini
ACS Energy Letters, (2019), 3, 2899–2907
33) Highly Concentrated KTFSI : Glyme Electrolytes for K/Bilayered-V2O5 Batteries
Xu Liu, **Giuseppe Antonio Elia** (*corresponding author), Xinpei Gao, Bingsheng Qin, Huang Zhang, Stefano Passerini
Batteries & Supercaps 2020, 3, 1
34) "*Electrolytes and Interphases in Sodium-Based Rechargeable Batteries: Recent Advances and Perspectives*"
Gebrekidan Gebresilassie Eshetu†, **Giuseppe Antonio Elia**†, Michel Armand, Maria Forsyth, Shinichi Komaba, Teofilo Rojo, Stefano Passerini
(† These authors equally contributed)
Advanced Energy Materials, 2020, 2000093
35) "*Evaluation of counter and reference electrodes for the investigation of Ca battery materials*"
Xu Li, **Giuseppe Antonio Elia** (*corresponding author), StefanoPasserini
Journal of Power Sources Advances, 2020, 2, 100008
36) *"Alkoxy-functionalized ionic liquid electrolytes: understanding ionic coordination of calcium ion speciation for the rational design of calcium electrolytes"*
Xinpei Gao, Xu Liu, Alessandro Mariani, **Giuseppe Antonio Elia**, Manuel Lechner, Carsten Streb and Stefano Passerini
Energy & Environmental Science, 2020, 13, 2559-2569
37) *"Operando pH Measurements Decipher H^+/Zn^{2+} Intercalation Chemistry in High-Performance Aqueous Zn/δ-V2O5 Batteries"*
Xu Liu, Holger Euchner, Maider Zarrabeitia, Xinpei Gao, **Giuseppe Antonio Elia** (*corresponding author), Axel Groß, and Stefano Passerini
ACS Energy Letters 2020, 5, 2979–2986

38) *"Simultaneous X-Ray Diffraction and Tomography Operando Investigation of Aluminum/Graphite Batteries"*
Giuseppe Antonio Elia (*corresponding author), Giorgia Greco. Paul Hans Kamm, Francisco García-Moreno, Simone Raoux, Robert Hahn
Advanced Functional Materials 2020, 2003913
39) *"Cathode–Electrolyte Interphase in a LiTFSI/Tetraglyme Electrolyte Promoting the Cyclability of V_2O_5"*
Xu Liu, Maider Zarrabeitia, Bingsheng Qin, **Giuseppe Antonio Elia** (*corresponding author), Stefano Passerini
ACS Applied Materials and Interfaces (2020), 12, 54782-54790
40) *"An overview and prospective on Al and Al-ion battery technologies"*
Giuseppe Antonio Elia (*corresponding author), Kostiantyn V. Kravchyk, Maksym V. Kovalenko, Joaquín Chacòn, Alex Holland, Richard G.A. Wills
Journal of Power Source (2021) 481, 227870.
41) *"Comparison of chloroaluminate melts for aluminum graphite dual-ion battery application"*
Giuseppe Antonio Elia (*corresponding author)*, Katrin Hoeppner, Robert Hahn*
Batteries & Supercaps (2021), 4, 368 – 373
42) "*A gel polymer electrolyte for aluminum batteries*"
Giuseppe Antonio Elia (*corresponding author)*, Carlos Islas Acevedo, Reyhaneh Kazemi, Sebastien Fantini, Rongying Lin, Katrin Hoeppner, Robert Hahn*
Energy Thecnology (2021), 2100208
43) "*Enhanced Li^+ Transport in Ionic Liquid-Based Electrolytes Aided by Fluorinated Ethers for Highly Efficient Lithium Metal Batteries with Improved Rate Capability*"
Xu Liu, Maider Zarrabeitia, Alessandro Mariani, Xinpei Gao, Hanno Maria Schütz, Shan Fang, Thomas Bizien, ***Giuseppe Antonio Elia*** (*corresponding author)*, Stefano Passerini*
Small Methods (2021) 5, 2100168
44) "*Application of nanotechnology in multivalent ion-based batteries*"
Giuseppe Antonio Elia (*corresponding author), *Muhammad Abdelhamid, Jun Ming, Piotr Jankowski*
Frontiers of Nanoscience (2021) 19, 229–272
45) "*Effect of organic cations in locally concentrated ionic liquid electrolytes on the electrochemical performance of lithium metal batteries*"
Xu Liu, Alessandro Mariani, Maider Zarrabeitia, Di Pietro Maria Enrica;Dong, Xu, ***Giuseppe Antonio Elia*** (*corresponding author)*, Mele Andrea, Stefano Passerini*
Energy Storage Materials (2022) 44, 370-378
46) *"Ru-Doping of P2-NaxMn0.75Ni0.25O2-Layered Oxides for High-Energy Na-Ion Battery Cathodes: First-Principles Insights on Activation and Control of Reversible Oxide Redox Chemistry"*
Arianna Massaro, Aniello Langella, Claudio Gerbaldi, ***Giuseppe Antonio Elia****, Ana B. Muñoz-García, and Michele Pavone*
ACS Appl. Energy Mater. *2022, 5, 9, 10721–10730*
47) *"Repurposing Face Masks after Use: From Wastes to Anode Materials for Na-Ion Batteries"*
Silvia Porporato, Mattia Bartoli, Alessandro Piovano, Nicolò Pianta, Alberto Tagliaferro, ***Giuseppe Antonio Elia****, Riccardo Ruffo, Claudio Gerbaldi*
Batteries *2022, 8(10), 183*
48) *"An electrochemical compatibility investigation of RTIL-based electrolytes with Si-based anodes for advanced Li-ion batteries"*
Marisa Falco, Gabriele Lingua, Matteo Destro, Laura Silvestri, Giuseppina Meligrana, Rongying Lin, Sébastien Fantini, Giovanna Maresca, Annalisa Paolone, Sergio Brutti, Giovanni B Appetecchi, ***Giuseppe Antonio Elia****, Claudio Gerbaldi*
Materials Today Sustainability *21 (2023) 100299*
49) *Lithium-Ion Batteries: Nomenclature of Interphases with Liquid or Solid-State Electrolytes*
N Amponsah Kyerematen, ***Giuseppe Antonio Elia****, Robert Hahn, Peter R Slater*
Batteries & Supercaps *6 (2023) e202200523*
50) *A Direct Real-Time Observation of Anion Intercalation in Graphite Process and Its Fully Reversibility by SAXS/WAXS Techniques*
Giorgia Greco, ***Giuseppe Antonio Elia****, Daniel Hermida-Merino, Robert Hahn, Simone Raoux*
Small Methods *2023, 7, 2201633*

POSTER AND ORAL PRESENTATIONS

1) **Oral Presentation** "*Lithium-metal alloying nanocomposite for high energy battery*"
GEI-ERA 2012, Santa Marina Salina, Messina, Italy, 17-22 June 2012.
2) **Poster Presentation** *"A mechanically milled, nanostructurated Sn-C composite anode for lithium ion battery"*
GEI-ERA 2012, Santa Marina Salina, Messina, Italy, 17-22 June 2012.
3) **Oral Presentation** *"A mechanically milled, nanostructurated Sn-C composite anode for lithium ion battery"*
CCMX SUMMER SCHOOL, EPFL, Lausanne 26-28 August 2013.
4) **Oral presentation** *"Nanostructured anode material for high energy lithium ion batteries"*
IX Nanoforum Rome 18-20 September 2013.
5) **Oral Presentation** *"Investigation of the carbon electrode modification during lithium oxygen cell operation in a tetraglyme-based electrolyte"*
GEI-ERA 2013, Pavia, Italy, 22-27 September 2013
6) **Poster Presentation** *"1-methyl-4-butyl-bis(trifluoromethanesulfonyl)imide (Py_{14}TFSI)-added poly(ethylenglycol)500dimethylether_lithium bis(trifluoromethanesulfonyl)imide (PEG500LiTSFI) electrolyte for advanced lithium batteries"*
ILED 2014, Rome, Italy, 28-30 May 2014.
7) **Poster Presentation** *"Comparative electrochemical study of the lithium salt influence in lithium-oxygen battery"*
IMLB 2014, the 17th international meeting on lithium ion batteries, Como, Italy, 10-14 June 2014.
8) **Oral Presentation** *"High performances lithium air battery"*
SBPMat, Joao Pessoa, Brazil, 28th September- 02nd October 2014.
9) **Poster Presentation** *"A new, high energy Sn-C / $Li[Li_{0.2}Ni_{0.4/3}Co_{0.4/3}Mn_{1.6/3}]O_2$ lithium-ion battery"*
GREENLION International Workshop 2014 Ulm, Germany, 28-29 October 2014.
10) **Poster presentation** *"Ionic Liquid Electrolyte for Lithium Oxygen and Lithium Ion Oxygen Cell"*
ECS Conference on Electrochemical Energy Conversion & Storage with SOFC-XIV is an international conference convening in Glasgow, July 26-31, 2015.
11) **Poster Presentation** *"Novel Electrode Material for Aluminum Batteries"*
18th International Meeting on Lithium Batteries in Chicago June 19-24, 2016
12) **Poster Presentation** *"Alternative Aluminum Batteries electrode materials"*
Electrochemistry 2016 Goslar September 26 – 28, 2016.
13) **Invited Presentation** *"Aluminum Batteries: Sustainable Alternative to Lithium-Ion Systems"*
The IDTechEx Show! Berlin, Germany 10 - 11 May 2017.
14) **Invited Presentation** *"Aluminum batteries, a sustainable alternative to lithium ion systems?"*
The 3rd EStorM conference in Freiberg 12 – 14 June 2017.
15) **Invited Seminar** *"Aluminum batteries, a sustainable alternative to lithium ion systems?"*
Chalmers University of Technology, 12th October 2017.
16) **Oral Presentation** *"Aluminum batteries, a sustainable alternative to lithium ion systems?"*
Workshop on high throughput research platform and proposal writing towards battery materials call Berlin 19th October 2017.
17) **Invited Seminar** *"Aluminum batteries, a sustainable alternative to lithium ion systems?"*
University of Southampton 30th January 2018.
18) **Poster Presentation** *"A high performances aluminum/graphite battery"*
Freigeist Workshop Berlin 21st February 2018.
19) **Invited Presentation** *"Aluminum Batteries: Sustainable Alternative to Lithium-ion Systems"*
CIMTEC2018 conference in Perugia, Italy • June 10-14, 2018
20) **Poster Presentation** *"A high performances aluminum/graphite battery"*
19th International Meeting on Lithium Batteries (IMLB) in Chicago June 17-22, 2018
21) **Oral Presentation** *"Aluminum Batteries: Sustainable Alternative to Lithium-ion Systems"*
69th Annual ISE Meeting Bologna, Italy, 2-7 September 2018
22) **Oral Presentation** *"Aluminum Batteries: Sustainable Alternative to Lithium-ion Systems"*
6th Edition of the International Meeting on Ionic Liquids for Electrochemical Devices (ILED-6) Rome, Italy, 9-11 September 2018
23) **Invited presentation** "Battery research at the Helmholtz Institute Ulm (HIU)" to the Huawei workshop on Battery Technologies. (28-29/05/2019)
24) **Invited presentation** "Evaluation of an alternative three electrode configuration for calcium ion battery investigation" to the Huawei workshop on Battery Technologies. (17-18/06/2020)
25) **Invited Seminar** at Università dell'Aquila – 12/02/2021
26) **Invited presentation** at ChemElectroChem Joint Virtual Symposium: Beyond Lithium-Ion Batteries – 02/03/2021

27) **Invited Seminar** at Università dell'Aquila – 12/02/2021
28) **Invited Seminar** *"The aluminum graphite dual-ion battery"* at Oslo University– 09/06/2021
29) **Poster Presentation** *" Cheap and easily processable polymer-based electrolytes for sustainable sodium-ion batteries"*
GEP-SLAP 2022 Congress - Donostia 9-13 May 2021
30) **Oral Presentation** *" Aluminium Batteries: Sustainable Alternative to Lithium-Ion Systems"*
Symposium for YouNg Chemists: Innovation and Sustainability (SYNC2022). Rome, 20-23 June 2022
31) **Oral Presentation** *" Aluminium Batteries: Sustainable Alternative to Lithium-Ion Systems"*
Giornate dell'Elettrochimica Italiana (GEI) 2022, Orvieto 11-15 September 2022
32) **Invited lecture** at PhD school ISOPHOS2022 titled "Electrochemical Energy Storage System Technologies" Castiglione della Pescaia (Tuscany - Italy) 15-16 September 2022
33) **Poster Presentation** *" Aluminium Batteries: Sustainable Alternative to Lithium-Ion Systems"*
IBA 2022 - INTERNATIONAL BATTERY ASSOCIATION HYBRID CONFERENCE Bled October 2-7, 2022
34) **Poster Presentation** *" Waste-derived, cheap and easily processable electrodes/electrolytes for Na-ion batteries"*
7th ICNaB 2022 - International Conference on Sodium Batteries took place from 5 - 8 December, 2022 at Stadthaus Ulm, Germany
35) **Invited presentation** "Addressing key challenges in the development "beyond Li-ion" chemistries"at MATSUS23 & Sustainable Technology Forum València (STECH23) (MATSUS23) València, Spain, 2023 March 6th - 10th
36) **Invited presentation** "Addressing key challenges in the development "beyond Li-ion" chemistries"at Workshop project ACTeA València, Centro Ricerche ENEA - Frascati (Rome) 31 March 2023

VISITING PERIODS IN RESEARCH INSTITUTES

- **Helmholtz-Institut Ulm (HIU), Ulm, Germany** 06/2015-10/2015
  Visiting Scientist
  Main activity: Study of advanced IL-based electrolyte for Li-ion and Li/air batteries application.
  Supervised by: *Prof. Stefano Passerini*

- **Argonne National Laboratory, Chicago, United States** 08/2014-09/2014
  Visiting Ph.D. Student
  Main activity: Investigation of oxygen cross over in Li/air cell
  Supervised by: *Dr. Khalil Amine*

- **Münster Electrochemical Energy Technology Münster, Germany** 10/2013-12/2013
  Visiting Ph.D. Student
  Main activity: Study of advanced IL-based electrolyte for Li-ion and Li/air batteries application.
  Supervised by: *Prof. Stefano Passerini*

- **Hanyang University, Seoul, South Korea** 04/2013-06/2013
  Visiting Ph.D. Student
  Main activity: Investigation of morphology evolution of carbon cathode in Li/air cell.
  Supervised by: *Prof. Sun, Yang-Kook*