

37th Topical Meeting

of the International Society of Electrochemistry

9 - 12 June 2024

Stresa, Italy

**Electrochemical energy for a greener
and more sustainable future society**



PROGRAM

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Conference Venue



Stresa Convention Centre (Palazzo dei Congressi)

28838 Stresa VB, Italy.

International Society of Electrochemistry
Chemin du Closelet 2
1006 Lausanne
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Program of the
37th Topical Meeting
of the International Society of
Electrochemistry

Electrochemical energy for a greener
and more sustainable future society

9 - 12 June 2024
Stresa, Italy

Organized by:

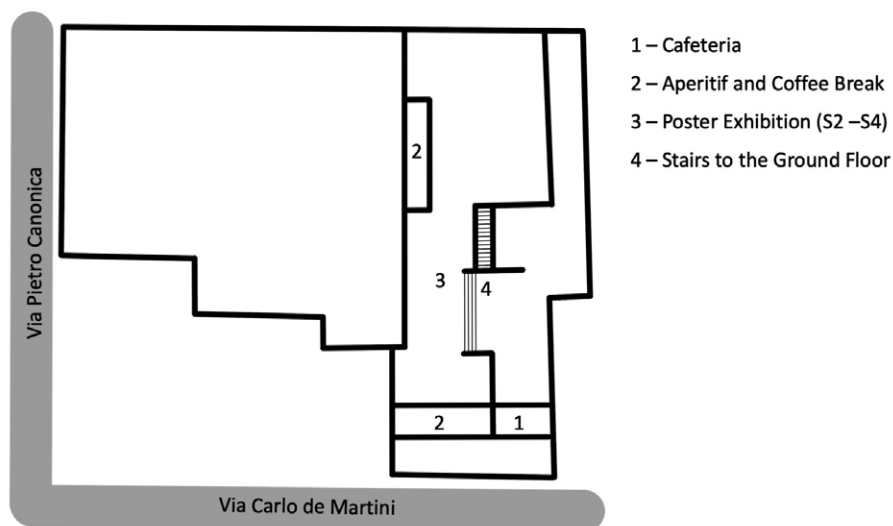
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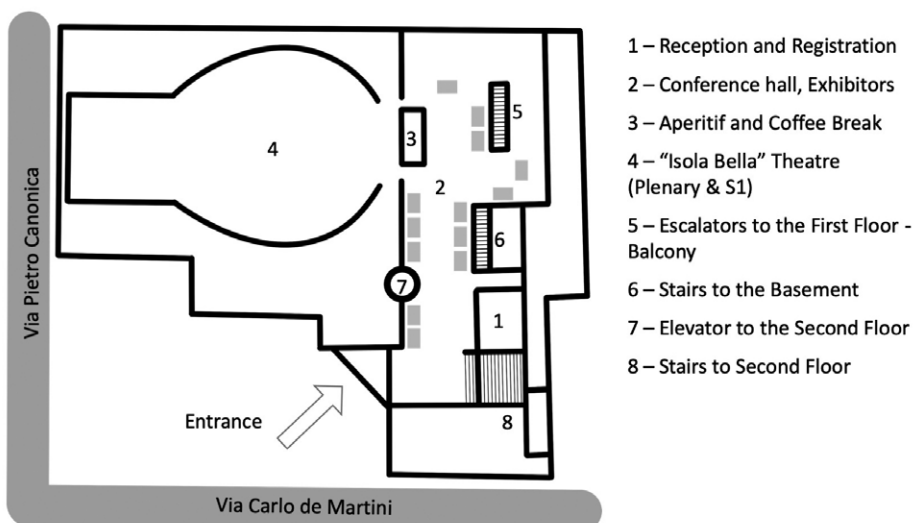
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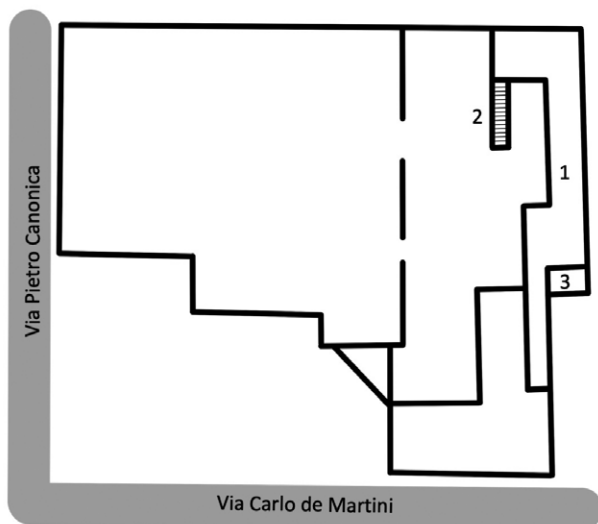
Basement



Ground Floor (main conference area)



First Floor - Balcony

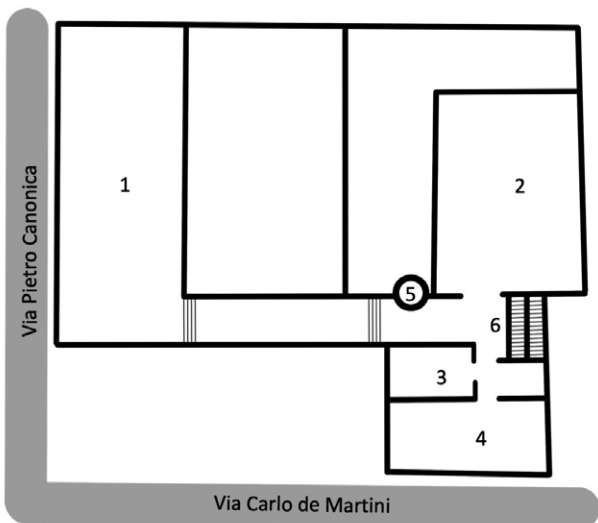


1 – Poster Exhibition (S1 –S3)
& Coffee Break

2 – Escalators to the First Floor

3 – Aperitif and coffee break

Second Floor



1 – Lunches & gala dinner

2 – Room “Isola dei Pescatori” (S2)

3 – Room “Isola Madre” (S3)

4 – Room “Mottarone” (S4)

5 – Elevator to the ground floor

6 – Stairs to Ground Floor

Organizing Committee

Riccardo Ruffo (*Chair*), *Università di Milano Bicocca*,
Claudio Gerbaldi, *Politecnico di Torino*,
Chiara Ferrara, *Università di Milano Bicocca*,
Nuria García Aráez, *Southampton University*,
Mikhail Zheludkevich, *Helmholtz-Zentrum Geesthacht*,
Thierry Brousse, *University of Nantes*,
Andrea Balducci, *Friedrich Schiller University Jena*

Local Organizing Committee

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Francesco Gambino, *Politecnico di Torino*
Alessandro Piovano, *Politecnico di Torino*
Giuseppe Antonio Elia, *Politecnico di Torino*

Symposium Organizers

Symposium 1 - Lithium-based technologies: Fundamental understanding and application aspects

Catia Arbizzani, *University of Bologna*
Francesco Nobili, *University of Camerino*
Giovanni Battista Appetecchi, *ENEA Research Center “Casaccia” Rome*
Julia Amici, *Polytechnic University of Torino*

Symposium 2 - Beyond lithium: New chemistries and approaches

Sergio Brutti, *University of Rome “La Sapienza”*
Francesca Soavi, *University of Bologna*
Michele Pavone, *University of Napoli “Federico II”*
Maria Assunta Navarra, *University of Rome “La Sapienza”*

Symposium 3 - Hydrogen production technologies: Novelties and advances

Andrea Baricci, *Polytechnic University of Milano*
Irene Vassalini, *University of Brescia*
Vincenzo Baglio, *CNR-ITAE Messina*
Alessandra d’Epifanio, *University of Rome “Tor Vergata”*

Symposium 4 - Hydrogen conversion technologies: Fundamentals, materials, applications

Christian Durante, *University of Padova*
Patrizia Bocchetta, *University of Salento*
Massimo Innocenti, *University of Florence*
Antonio Barbucci, *University of Genova*

Table of Contents

Front matter	i - viii
Important information	2
Oral presentation program	
<i>Sunday afternoon</i>	4
<i>Monday morning</i>	16
<i>Monday afternoon</i>	23
<i>Tuesday morning</i>	36
<i>Tuesday afternoon</i>	43
<i>Wednesday morning</i>	51
Poster presentations	
<i>Symposium 1</i>	60
<i>Symposium 2</i>	70
<i>Symposium 3</i>	79
<i>Symposium 4</i>	87

Sunday 9 June

Participant Registration

Ground Floor (main conference area) - Stresa Convention Centre

13:00 to 14:30 Registration desk will also be open throughout the conference

S1 / S3 Posters & Welcome reception

First Floor - Balcony - Stresa Convention Centre

18:45 to 20:30

Monday 10 June

S2 / S4 Posters & Aperitif

Second Floor - Stresa Convention Centre

18:30 to 20:30

Tuesday 11 June

Gala Dinner

Second Floor - Stresa Convention Centre

20:00

Oral Presentations

Sunday 9 June 2024

Keynote

Room : R1 - Isola Bella Theatre

14:45 to 15:35 Chaired by Ricardo Ruffo

Yi Cui (*Materials Science and Engineering, Stanford University, Stanford, USA*)

[Materials and Electrolyte Design for Lithium-Based Batteries](#)

S1 - Lithium-based technologies

Room : R1 - Isola Bella Theatre

Chaired by Jakub Reiter, Marilena Mancini & Akiko Tsurumaki

15:45 to 16:00

Marilena Mancini (*Accumulator Materials Research (ECM), ZSW, Ulm, Germany*), Peter Axmann, Marius F. Hoffmann, Jan Martin

[Electrochemical performance of recycled anode and cathode active materials](#)

16:00 to 16:15

Saeed Mardi (*Department of Chemistry, Uppsala University, Uppsala, Sweden*)

[The Influence of Fluorine-Free Electrolytes on the Thermal and Electrochemical Performance of Li-ion Battery](#)

16:15 to 16:30

Yitao He (*Department of Thin Films and Nanostructures, Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic*)

[Why Lithium Dendrites Become Thinner During Cycling in Li Metal Batteries?](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Jakub Reiter (*R&D, Inobat Auto, Voderady, Slovakia*)

[Inobat – Advanced Li-ion Cell Manufacturer](#)

17:30 to 17:45

Akiko Tsurumaki (*Department of Chemistry, Sapienza University of Rome, Rome, Italy*), Chiara Dal Bosco, Tecla Gasperi, Alessandra Gentili, Valentina Liberti, Maria Assunta Navarra, Corrado Zamparelli

[Naturally Derived Battery Components for Safe, Stable, and Sustainable Li-ion Batteries](#)

17:45 to 18:00

Nerea Casado (*POLYMAT, University of the Basque Country, San Sebastian, Spain*), Maria Forsyth, Antonela Gallastegui, David Mecerreyes

[Functional Polymer Binders for More Sustainable Batteries](#)

18:00 to 18:05

Corentin Renais (*Material Science, Electrochemistry, Université Grenoble Alpes, LEPMI, Grenoble, France*), Fannie Alloin, Céline Barchasz, Marta Mirolo, Maxime Servajon, Claire Villevieille

[Power limitations in graphite electrodes - Electrode engineering study](#)

18:05 to 18:10

Anthony De Simone (*LITEN, CEA Grenoble, Grenoble, France*), Sophie Chazelle, Hervé Manzanarez, Sébastien Martinet, Dane Sotta

[Optimization of Extrusion-Lamination Process to Cast Solid Polymer Electrolyte](#)

18:10 to 18:15

Mattia Longo (*DISAT, Politecnico di Torino, Torino, Italy*), Julia Amici, Silvia Bodoardo, Daniela Fontana, Matteo Gandolfo

[Thiol-ene polymerization towards easily up-scalable gel polymer electrolyte](#)

18:15 to 18:20

Matteo Gandolfo (*DISAT, Politecnico di Torino, Torino, Italy*), Julia Amici, Silvia Bodoardo, Dominic Bresser, Mattia Longo

[Crosslinked ionogels containing active fillers for lithium-metal batteries](#)

18:20 to 18:25

Hanxin Mei (*Department of Chemistry and Industrial Chemistry, via Dodecaneso 31, DCCI, genoa, Italy*), Alessandro Cingolani, Paolo Piccardo, Roberto Spotorno

[Thin-Film \$\text{Li}_3\text{InCl}_6\$ Composite Solid-State Electrolyte Prepared by Solution Casting Method](#)

18:25 to 18:30

Fabio Ferrario (*Chimica, Materiali ed Ingegneria Chimica "Giulio Natta, Politecnico di Milano, Milan, Italy*), Valentina Busini, Stephan Hildebrand, Mircea Lazareanu, Natalia Lebedeva, Ricardo da Costa Barata

[Li-ion Battery Electrolyte Vapour Cloud Dispersion: an Experimental and Computational Fluid Dynamics approach](#)

18:30 to 18:35

Sergio Ferrer-Nicomedes (*Chemical Engineering Department, Universitat Jaume I, Castellón de la Plana, Spain*), Antonio Barba-Juan, Andrés Mormeneo-Segarra, Nuria Vicente-Agut

[On The Composition And Microstructural Dependence Of Environmentally Friendly LATP Composite Solid Electrolytes](#)

18:35 to 18:40

Andrés Mormeneo-Segarra (*Chemical Engineering, Jaume I University, Castellón de la Plana, Spain*), Antonio Barba-Juan, Sergio Ferrer-Nicomedes, Nuria Vicente-Agut

[Assessing the Influence of LATP Microstructure in the Cold Sintering Process by pioneering EIS in operando technique](#)

18:40 to 18:45

Victoria Greussing (*Department of Physical Chemistry, University of Innsbruck, Innsbruck, Austria*), Engelbert Portenkirchner, Teja Stüwe

[Deciphering Silicon Carbide: Insulator or Optimal Anode Material?](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Sergio Brutti, Matteo Bonomo & Giorgia Zampardi

15:45 to 16:00

Matteo Bonomo (*Chemistry, Università Degli Studi di Torino, Turin, Italy*),
Claudia Barolo, Alessandro Damin, Giuseppe Antonio Elia, Simone
Galliano, Claudio Gerbaldi, Gabriele Lingua, Daniele Motta, Stefano
Nejrotti, Federica Piccirilli, Elisabeth Pires

[Engineering Glycerol-derived Molecules as Hydrogen Bond Donor in NaCl and ZnCl₂-based Deep Eutectic Electrolytes for Electrochemical Energy Storage Devices](#)

16:00 to 16:15

Giorgia Zampardi (*Production Engineering, University of Bremen, Bremen, Germany*), Fabio La Mantia, Michele Tribbia

[Electrodeposited Metallic Substrates as Highly Efficient Anodes for Aqueous Zn-Ion Batteries](#)

16:15 to 16:30

Luis Fernando Arenas (*Institute of Chemical & Electrochemical Process Engineering, Clausthal University of Technology, Clausthal-Zellerfeld, Germany*), Maik Becker, Sascha Genthe, Ulrich Kunz, Thomas Turek

[Measuring potential distribution within the porous foam electrodes of improved zinc-silver/air hybrid flow batteries](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Nagore Ortiz-Vitoriano (*Electrochemical Energy Storage, CIC energiGUNE, Miñano, Spain*), Estíbaliz García-Gaitán

[Naturally derived Biopolymer-based Electrolytes for Zn-air Batteries](#)

17:30 to 17:45

Eugenio Gibertini (*Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy*), Gianlorenzo Bussetti, Luca Magagnin, Prisca Viviani

[Zn-Ion Storage In Inkjet Printed \$\text{Ti}_3\text{C}_2\text{T}_x\$ Mxene Electrodes](#)

17:45 to 18:00

Felix Schwab (*Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Ulm, Germany*), Britta Doppl, Niklas Herrmann, Birger Horstmann

[D Continuum Modelling and Simulations of Ni/Zn Batteries](#)

18:00 to 18:05

Théo Vallier (*ICGM, Université de Montpellier, Montpellier, France*), Bruno Ameduri, Jean-Louis Ferrandis, Sébastien Issa, Vincent Lapinte, Laure Monconduit, Rafaël Nuernberg, Lorenzo Stievano

[Understanding \$\text{Na}^+\$ diffusion, physico-chemical behavior and electrochemical performance of a Gel Polymer Electrolyte](#)

18:05 to 18:10

Thiago Bertaglia (*Department of Physical Chemistry, São Carlos Institute of Chemistry, São Carlos, Brazil*), Michael Aziz, Rafael Colombo, Frank Crespilho, Luana Faria, Roy Gordon, Rodrigo Iost, Emily Kerr, Lucyano Macedo, Cristiano Oliveira, Graziela Sedenho, Gabriel Teobaldo, Andrew Wong

[Quinone-Based Hydrogel for Wearable Battery](#)

18:10 to 18:15

Léa Flores (*Battery materials laboratory, CEA, Grenoble, France*), Jean-Frédéric Martin, Sébastien Martinet

[Exploration of aqueous electrolytes with large operating voltage window for low cost M-ion cells](#)

18:15 to 18:20

Coumba Fall (*Hérault, Institut Charles Gerhardt de Montpellier (ICGM), Montpellier, France*), Frederic Favier, Steven Le Vot, Patrice Simon, Pierre Louis Taberna

[Investigating the Influence of Aryl Diazonium Modification on Graphite Felt for the Improvement of Redox Flow Batteries](#)

18:20 to 18:25

Karim Boutamine (*D4 ICGM, Montpellier University, Montpellier, France*), Patricia Bassil, Frédéric Favier, Steven Le Vot, Olivier Ouari

[Improving the performance of organic posolytes for aqueous redox flow batteries](#)

18:25 to 18:30

Maria Alhajji (*Physics, University of Limerick, Limerick, Ireland*), Andrea Bourke, Noel Buckley, Robert Lynch

[Vanadium Flow Batteries: Possible Reasons Why There is Lack of Consensus Regarding Which Electrode has Faster Kinetics](#)

18:30 to 18:35

Luca Minnetti (*School of Sciences and Technologies, University of Camerino, Camerino, Italy*), Jusef Hassoun, Vittorio Marangon, Francesco Nobili, Leonardo Sbrascini, Antunes Staffolani

[Transport and Interphase Features of a Converted Mixed Olivine Cathode for Sodium-Ion Batteries](#)

18:35 to 18:40

Shubham Kumar (*Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Sandeep Kumar, S Parida

[Subabul sawdust-derived activated carbon for supercapacitor application](#)

18:40 to 18:45

Antonio De Marco (*Chemistry "Giacomo Ciamician", Università di Bologna, Bologna, Italy*), Catia Arbizzani, Marco Giorgetti, Mariam Maisuradze

[Alginate-based separators for green battery technology](#)

S3 - Hydrogen production technologies

Room : R3 - Isola Madre

Chaired by Dario Dekel, Vincenzo Baglio & Andrea Zaffora

15:45 to 16:00

Vincenzo Baglio (*Istituto di Tecnologie Avanzate per l'Energia (ITAE), CNR, Messina, Italy*), Irene Gatto, Carmelo Lo Vecchio, Isabella Nicotera, Cataldo Simari, M.H. Ur Rehman

[Anion Exchange Membranes Based on Polysulfone Grafted with Tetramethyl Ammonium Functionalities for Fuel Cells and Electrolysers](#)

16:00 to 16:15

Nicholas Carboni (*Chemistry Department, Sapienza University of Rome, Rome, Italy*), Vincenzo Baglio, Angela Capri, Alessandra Carbone, Irene Gatto, Lucia Mazzapioda, Maria Assunta Navarra

[Composite Anion Exchange Membranes based on Graphene Oxide for Water Electrolyzer Applications](#)

16:15 to 16:30

Susanne Koch (*Electrochemical Energy Systems, University of Freiburg, Freiburg, Germany*), Joey Disch, Mohamed Elshamy, Sophia Kilian, Lukas Metzler, Severin Vierrath

[Catalyst Layer Engineering for Improved Water Management in Anion-Exchange Membrane Water Electrolyzers](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Dario Dekel (*Chemical Engineering, Technion - Israel Institute of Technology, Haifa, Italy*)

[Current Challenges in Anion-Exchange Membranes for Water Electrolyzers](#)

17:30 to 17:45

Andrea Zaffora (*Engineering Department, University of Palermo, Palermo, Italy*), Sabrina Grassini, Leonardo Iannucci, Monica Santamaria, Valentina Maria Volanti

[Performance of Electrochemically Functionalized MOF-based Anodic Porous Transport Layers for Alkaline Water Electrolysis](#)

17:45 to 18:00

Patrizia Bocchetta (*Innovation Engineering, Università del Salento, Lecce, Italy*), Antonio Ficarella, Meenal Gupta, Filippo Selleri

[In-situ electrochemical production of hydrogen for sustainable fuel cell feeding](#)

18:00 to 18:05

Farid Attar (*School of Engineering, The Australian National University, Canberra, Australia*), Bikesh Gupta, Siva Karuturi, Parvathala Reddy Narangari, Asim Riaz, Astha Sharma, Joshua Soo

[Advanced Statistical Models for Optimising the Operating and Synthesis Parameters of Electrochemical Water Splitting](#)

18:05 to 18:10

Sarah Zerressen (*IEK-14: Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany*), Ulf-Peter Apfel, Klaus Bender, Andreas Glösen, Martin Müller, Ralf Peters, Tim Sievert, Robert Vaßen

[Stainless steel based Porous Transport Layers for Polymer Electrolyte Water Electrolysis](#)

18:10 to 18:15

Delphine Clauss (*LEPMI, Univ. Grenoble Alpes, CNRS, Grenoble, France*), Raphaël Chattot, Jakub Drnec, Laetitia Dubau, Frédéric Maillard, Vincent Martin, Marta Mirolo

[Achieving Small IrO_x Nanoparticles with Dual OER Activity and Stability via Thermal Annealing](#)

18:15 to 18:20

Linghui Li (*Laboratoire de Chimie Moléculaire (LCM), Ecole polytechnique, Palaiseau, France*), Clément Marchat, Cédric Tard, Sandrine Tusseau-Nenez

[Efficient Electrocatalysts for Alkaline Oxygen Evolution Reaction from Wolframite Derived Heteroatom Materials](#)

18:20 to 18:25

Sharon-Virginia Pape (*IEK-14, Forschungszentrum Jülich, Jülich, Germany*), Felix Lohmann-Richters, Anna K. Mechler, Martin Müller, Florian Seidler

[Navigating the Dynamics of Alkaline Water Electrolysis: Methodological Approaches to Aging Characterization](#)

18:25 to 18:30

Ramūnas Levinas (*Department of Catalysis, Center for Physical Sciences and Technology, Vilnius, Lithuania*), Eugenijus Norkus, Vidas Pakštas, Loreta Tamašauskaitė-Tamašiūnaitė, Roman Viter

[White Light Sensitivity and p-n Photocurrent Switching in TiO₂/CuO Heterostructures: Optimization and Mechanistic Insights](#)

18:30 to 18:35

Christian Marcks (*Electrochemical Reaction Engineering, RWTH Aachen University - Aachener Verfahrenstechnik, Aachen, Germany*), Mohit Chatwani, Adarsh Jain, Doris Segets

[Characterization of Powder-Based Catalysts for the Oxygen Evolution Reaction Beyond Rotating Disc Electrodes](#)

18:35 to 18:40

Theo Faverge (*LEPMI, Université Grenoble Alpes, Grenoble, France*), Antoine Bonnefont, Marian Chatenet, Christophe Coutanceau

[Electrocatalytic Oxidation of Glucose into Hydrogen and Value Added Compounds on Gold: Experiments and Microkinetic Model](#)

18:40 to 18:45

Elisabetta Campedelli (*Chemical Science, University of Padua, Padova, Italy*), Christian Durante, Marco Mazzucato

[Advancing AEMWE Cathode with a Novel PGM-Free MoS₂-Composite Catalyst Synthesized via a Green Fast Method](#)

S4 - Hydrogen conversion technologies

Room : R4 - Mottarone

Chaired by Plamen Atanassov, Enrico Negro & Marco Mazzucato

15:45 to 16:00

Zubair Ahmed (*Chemistry, University of Tartu, Tartu, Estonia*), Zubair Ahmed, Srinu Akula, Jaan Aruväli, Arvo Kikas, Vambola Kisand, Jekaterina Kozlova, Kaupo Kukli, Maike Käärrik, Jaan Leis, Helle-Mai Piirsoo, Kaido Tammeveski, Alexey Treshchalov

[Hybrid High-Performance Oxygen Reduction Reaction Fe-N-C Electrocatalyst for Anion Exchange Membrane Fuel Cells](#)

16:00 to 16:15

Milena Setka (*Department of Chemical Engineering, University of Chemistry and Technology, Prague, Czech Republic*), Marjan Bele, José M. Catalá-Civera, Nejc Hodnik, Miroslav Soos

[Microwave-assisted synthesis of nitrogen-doped carbon-based catalysts for electrochemical hydrogen peroxide production](#)

16:15 to 16:30

Enrico Negro (*Department of Industrial Engineering, University of Padova, Padova, Italy*), Soufiane Boudjelida, Vito Di Noto, Angeloclaudio Nale, Gioele Pagot, Ketì Vezzù

[Interplay between the Precursor Features and the Physicochemical Properties of “Core-Shell” Hierarchical Carbon Nitride Electrocatalysts for the Oxygen Reduction Reaction](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Plamen Atanassov (*Chemical & Biomolecular Engineering, University of California Irvine, Irvine, USA*)

[Hybrid Platinum and Metal-Nitrogen-Carbon Catalyst Library for the Oxygen Reduction Reaction](#)

17:30 to 17:45

Diana Constanza Orozco-Gallo (*CIDEMAT, Universidad de Antioquia, Medellín, Colombia*), Jorge Andrés Calderón-Gutierrez, Verónica Muñoz-Montes, Catalina Orozco-Silva, Ricardo Ossa-Gallego

[Beyond Purity Precursors: Towards Oxygen Reduction Reaction Activity Enhancement for PEM Fuel Cells](#)

17:45 to 18:00

Marco Mazzucato (*Chemical Science, University of Padova, PADOVA, Italy*), Christian Durante

[NO-Stripping in Gas Diffusion Electrode Setup: Toward More Practical Site Density Determination in Fe-N-C Catalysts for Oxygen Reduction Reaction](#)

18:00 to 18:05

Silvia Nasarre Artigas (*Freudenberg e-Power Systems GmbH, Bayerwaldstraße 3, München, Germany*), Florian Mack, Hong Xu

[Use of Distribution of Relaxation Times Analysis as an in-situ Diagnostic Tool for Water Management in PEM Fuel cell applications](#)

18:05 to 18:10

Jun Huang (*IEK-13, Forschungszentrum Jülich GmbH, Jülich, Germany*), Lulu Zhang

[Cdl of Pt\(111\)](#)

18:10 to 18:15

Michael Eppler (*CR/ATC2, Robert Bosch GmbH, Renningen, Germany*), Ulrich Berner, Michael Eikerling, Matthias Hanauer, Thomas Kadyk

[Understanding Mass Transport in PEMFCs through Modeling and Advanced Limiting Current Techniques](#)

18:15 to 18:20

Tina Đukić (*Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia*), Matija Gatalo, Nejc Hodnik, Iva Klofutar, Leonard Jean Moriau, Martin Šala

[Towards Long Durability of Pt-nanoalloy-based ORR Electrocatalysts: Adjustment of Potential Limits](#)

18:20 to 18:25

Mattia Parnigotto (*Chemical Sciences, University of Padova, Padova, Italy*),
Stephane Cotte, Gregorio Dal Sasso, Maria Chiara Dalconi, Christian
Durante, Marco Mazzucato

[Optimizing Pt/C Catalyst Performance in PEMFC Cathode
Compartment via Metal Oxide Addition](#)

18:25 to 18:30

Quentin Labarde (*EIP, LEPMI, Grenoble, France*), Marian Chatenet,
Laetitia Dubau, Thomas Gaumont, Fabrice Micoud

[Carbon-capped PtNi-alloy Cathodic Electrocatalysts for PEMFC](#)

18:30 to 18:35

Sunil Kumar Sethy (*Hydro and Renewable Energy, IIT Roorkee, Haridwar,
India*), Amit C. Bhosale

[Optimization of contact resistance of a cylindrical PEMFC using
gaskets](#)

18:35 to 18:40

Patrick Sarkezi-Selsky (*Institute of Engineering Thermodynamics, German
Aerospace Center (DLR), Stuttgart, Germany*), Thomas Jahnke

[Multiscale modeling of water management in a Polymer Electrolyte
Membrane Fuel Cell \(PEMFC\) using novel multiphase transport
relations derived from Lattice Boltzmann simulations](#)

18:40 to 18:45

Matthieu Tempelaere (*LEPMI, Univ. Grenoble Alpes, CNRS, Grenoble
INP, Grenoble, France*), Marian Chatenet, Marc Zimmermann

[Towards 3D-organized Catalytic Layers: Pt/Vertically Aligned Carbon
Nanotubes composites for efficient Oxygen Reduction Reaction in
Proton Exchange Membrane Fuel Cells.](#)

Monday 10 June 2024 - Morning

Keynote

Room : R1 - Isola Bella Theatre

08:30 to 09:20 *Chaired by Carlo Santoro*

Radenka Maric (*Office of the President, The University of Connecticut, Storrs Mansfield, USA*), Zhiqiao Zeng, Stoyan Bliznakov, Leonard Bonville

[Innovative Low-loaded MEAs for PEM Water Electrolyzers: Design, Fabrication, Performance, and Durability Assessment](#)

S1 - Lithium-based technologies

Room : R1 - Isola Bella Theatre

Chaired by Francesca Soavi & Riccardo Ruffo

09:30 to 10:00 *Invited*

Laurence Hardwick (*Department of Chemistry, University of Liverpool, Liverpool, United Kingdom*), Jacqui Everitt, Julia Fernandez-Vidal, Alex Neale, Igor Sazanovich

[What have the Ramans ever done for us?](#)

10:00 to 10:15

Kamran Amin (*National Center for Nanoscience and Technology, Chinese Academy of Sciences, Beijing, China*)

[Combining High Redox Potential and High-Capacity in Organic Cathodes Paving the Way for Commercial Organic Lithium-ion Batteries](#)

10:15 to 10:30

Junichi Inamoto (*Department of Applied Chemistry, Graduate School of Engineering, University of Hyogo, Hyogo, Japan*), Akane Inoo, Yoshiaki Matsuo

[Graphene-like graphite, a novel cathode material for dual-carbon batteries with large capacity](#)

10:30 to 10:45

Öykü Simsek (*Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University/CEEC Jena, Jena, Germany*), Alessandro Innocenti, Simon Muench, Stefano Passerini, Ulrich S. Schubert

[UV-Initiated Composite Ionogels for Li-Organic Batteries](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Fabio La Mantia (*Electrical Energy Storage, Fraunhofer IFAM, Bremen, Germany*), Hermann Pleteit, Federico Scarpioni

[Insights from dynamic impedance spectroscopy on the aging of lithium batteries](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Ivana Hasa & Vito Di Noto

09:30 to 10:00 *Invited*

Lorenzo Stievano (*ICGM, Univ. Montpellier, Montpellier, France*), Laure Monconduit

[Electronic Structure and Electrochemical Mechanisms in Electrode Materials for Potassium Batteries](#)

10:00 to 10:15

Aniello Langella (*Department of Chemical Sciences, University of Napoli Federico II, Napoli, Italy*), Arianna Massaro, Ana B. Muñoz-García, Michele Pavone

[First-principles insights on solid-state transitions in Mn-based layered oxides as high-energy cathodes for Na-ion batteries](#)

10:15 to 10:30

Noha Sabi (*The High Throughput Multidisciplinary Research Laboratory, Mohammed VI Polytechnic University, Benguerir, Maroc*)

[Effect of Titanium Substitution in \$P_2-Na_{2/3}Co_{1-x}Ti_xO_2\$ Cathode Material: Understanding of the sodiation desodiation mechanism upon electrochemical cycling](#)

10:30 to 10:45

Koji Yazawa (*NM Business Unit, JEOL Ltd., Akishima, Japan*), Seung-Taek Myung, Natalia Voronina

[Direct observation of lithium-ion migration in sodium ion battery cathodes by nuclear magnetic resonance](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Ivana Hasa (*WMG, The University of Warwick, Coventry, United Kingdom*), Jacob Compton, Faduma Maddar

[Elucidating Dehydration of Prussian White Cathodes: A Journey from Lab to Upscaled Sodium-ion Cell Prototypes](#)

11:45 to 12:00

Leonardo Sbrascini (*School of Science and Technology - Chemistry Division, University of Camerino, Camerino, Italy*), Luca Bottoni, Hamideh Darjazi, Francesco Nobili

[Bio-based Hard Carbons and Binders for Sodium-ion Batteries Derived from Forestry Waste](#)

12:00 to 12:15

Metin Taha Orbay (*Institute for Technical Chemistry, Friedrich-Schiller-University Jena, Jena, Germany*), Andrea Balducci, Thierry Brousse, Olivier Crosnier, Abbas Khan, Etienne Le calvez

[\$AgNbO_3\$ as Anodic Material for Lithium, Sodium and Potassium-Batteries](#)

12:15 to 12:30

Antonio Gentile (*TGM - Generation Technologies and Materials, RSE SpA - Ricerca Sistema Energetico, Milan, Italy*), Chiara Ferrara, Stefano Marchionna, Irene Ostroman, Riccardo Ruffo, Nicholas Vallana

[Nano-Structured Ti/Sn Oxides Derived by \$\text{Ti}_3\text{Al}_{\(1-x\)}\text{Sn}_x\text{C}_2\$ MAX Phase as Highly Stable Anode for Sodium Ion Batteries](#)

12:30 to 12:45

Dario Alvira (*Chemical Engineering and Environmental Technologies, University of Zaragoza, Zaragoza, Spain*), Daniel Antorán, Hamideh Darjazi, Claudio Gerbaldi, Joan J. Manyà, Víctor Sebastián

[Acid-Mediated Hydrothermal Carbonization of Vine Shoots as a Pathway to High-Performance Hard Carbons for SIBs](#)

12:45 to 13:00

Kie Hankins (*Institute For Advanced Materials Electrochemical Technology, Karlsruhe Institute of Technology, Karlsruhe, Germany*)

[Insights on SEI Growth and Behavior in Na-ion Batteries via Physically-Driven Kinetic Monte Carlo Model](#)

S3 - Hydrogen production technologies

Room : R3 - Isola Madre

Chaired by Patrizia Bocchetta & Elena Colombo

09:30 to 10:00 *Invited*

Ulrike Krewer (*Institute for Applied Materials - Electrochem. Technologies, Karlsruhe Institute of Technology, Karlsruhe, Germany*), Inga Dorner, Niklas Oppel, Philipp Roesse

[Water and \$\text{CO}_2\$ Electrolysis – Insight into Kinetic Limitations](#)

10:00 to 10:15

Florian Hausen (*IEK-9, Forschungszentrum Jülich, Jülich, Germany*), Felix Gunkel, Anton Kaus, Karin Kleiner, Muzaffar Maksumov, Zhenjie Teng

[Insights on the Evolution of Functional Layers in Electrolyzers by Friction Force Microscopy](#)

10:15 to 10:30

Toni Moser (*Physical Chemistry, University of Innsbruck, Innsbruck, Austria*), Andrea Auer, Christoph Griesser, Julia Kunze-Liebhäuser

[Exploring Au\(111\) Oxidation Dynamics in Oxygen-Free Alkaline Environments using Electrochemical Scanning Tunneling Microscopy](#)

10:30 to 10:45

Jan Niklas Hausmann (*Chemistry, Helmholtz Zentrum Berlin, Berlin, Germany*), Prashanth W. Menezes

[Reproducibility in Electrochemistry](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Antonino Arico' (*CNR-ITAE Istituto di Tecnologie Avanzate per l'Energia, Consiglio Nazionale delle Ricerche, Messina, Italy*)

[Anion Exchange Membrane Water Electrolysis: from Materials to Stack Development](#)

S4 - Hydrogen conversion technologies

Room : R4 - Mottarone

Chaired by Michele Piana & Lior Elbaz

09:30 to 10:00 *Invited*

Lior Elbaz (*Chemistry, 1 Max and Anna Webb St., Ramat-Gan, Israel*), Rifael Snitkoff-Sol

[Quantifying the Active Site Density in MNC ORR catalysts](#)

10:00 to 10:15

Luiza Zudina (*AVT.ERT - Elektrochemische Reaktionstechnik, RWTH Aachen University, Aachen, Germany*), Anna K. Mechler, Georgii Sokolsky

[MnO₂-based Electrocatalysts For Oxygen Reduction Reaction in Low-temperature Ammonia Fuel Cells](#)

10:15 to 10:30

Walter Orellana (*Department of Physical Science, Universidad Andres Bello, Santiago, Chile*)

[Catalytic activity of organometallic phthalocyanine sheets for oxygen reduction and oxygen evolution reactions: A theoretical study](#)

10:30 to 10:45

Williane da Silva Freitas (*Department of Chemical Science and Technologies, University of Rome Tor Vergata, Rome, Italy*), Alessandra D'Epifanio, Barbara Mecheri, Manuela Montalto, Beatrice Ricciardi

[Development of PGM-free Catalysts for Oxygen Electrocatalysis in Polymer Electrolyte Fuel Cells, Electrolyzers, and Metal-Air Batteries](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Michele Piana (*Dept. of Chemistry and Catalysis Research Center, Technical University of Munich, Garching, Germany*), Ana Marija Damjanović, Tim-Patrick Fellingner, Anna T. S. Freiberg, Hubert A. Gasteiger, Burak Koyutürk, Yan-Sheng Li, Pankaj Madkikar, Davide Menga, Olivier Proux, Armin Siebel

[Ex Situ/In Situ/Operando X-ray Absorption Spectroscopy on Fe-based Oxygen Reduction Reaction Catalysts in PEMFCs](#)

11:45 to 12:00

Thomas Gaumont (*LEPMI, Grenoble Institute of Technology, Grenoble, France*), Marian Chatenet, Laetitia Dubau, Frédéric Maillard, Camille Roiron, Arnaud Viola

[Carbon-supported PtNi Sponges Nano-architecture as a Cathode Catalyst for ORR in PEMFC](#)

12:00 to 12:15

Christian Durante (*Chemical Sciences, Università degli studi di Padova, Padova, Italy*), Stephane Cotte, Marco Mazzucato, Mattia Parnigotto

[Pt supported ZrO₂/C catalyst: one-pot solid-state synthesis and activity/stability performance in PEMFC](#)

12:15 to 12:30

François Guillet (*LEPMI, Grenoble INP, Gières, France*), Laetitia Dubau, Lenka Svecova

[Resurrecting PEMFC nanocatalysts – Electrochemical approaches for platinum recycling](#)

12:30 to 12:45

Jens Mitzel (*Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany*), Pawel Gazdzicki, Hanno Kaess, Tobias Morawietz

[Impact of Ionomer Mobility on Transport and Structural Properties of the Cathodic Catalyst Layer in a PEMFC Durability Test](#)

12:45 to 13:00

Antonela Gallastegui (*Innovative Polymers Group, POLYMAT, San Sebastián-Donostia, Spain*), Ilaria Abdel Aziz, Nerea Casado, Antonela Gallastegui, David Mecerreyes, Yuliana Pairetti

[Fluorine-Free Protic Poly\(ionic liquid\)s Membranes for Fuel Cells](#)

Monday 10 June 2024 - Afternoon

S1 - Lithium based technologies

Room : R1 - Isola Bella Theatre

Chaired by Yong Yang, Patrik Johansson & Alessandro Piovano

14:30 to 15:00 Invited

Patrik Johansson (*Departement of Physics, Chalmers University of Technology, Gothenburg, Sweden*)

[Practical Modelling of Lithium Battery Electrolytes](#)

15:00 to 15:15

Mervyn Soans (*Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany*), Argjend Blakaj, Dominic Bresser, Timo Böhler, Dominik Steinle, Alberto Varzi

[Versatile Chemically Delithiated Reference Electrode for Solid-State Lithium-Ion/Lithium Metal Battery Applications](#)

15:15 to 15:30

Wei-Fan Kuan (*Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan*), Hsiang-Chih Chuang, Jen-Wei Teng

[Supercritical CO₂-Assisted Coating Technique on Lithium Iron Phosphate Cathode for High-Performance Lithium-Ion Batteries](#)

15:30 to 15:45

Célia Doublet (*LEPMI MIEL, UGA, Grenoble, France*), Lauréline Lecarme, Claire Villeveille

[Monitoring failure mechanisms in water-in-salt Li-ion full cell LiFePO₄/TiS₂](#)

15:45 to 16:00

Tanveerkhan Pathan (*WMG, University of Warwick, Coventry, United Kingdom*), M. Chelladurai Asirvatham, Maria Balart, Melanie Loveridge, Iain Masters, James McLaggan, Thomas Moore, Puritut Nakhanivej, Vincent Perry-French, Louis Piper, Geoff West

[Forensic Evaluation of High-Capacity Prismatic Cells](#)

16:00 to 16:05

Camilla Rosa (*Physical Chemistry - University of Pavia, IUSS Pavia, Pavia, Italy*), Daniele Callegari, Eliana Quattaroni

[Enhancing the Electrochemical Performances of Multi-Doped Spinel Oxide Cathodes for Lithium-Ion Batteries through Fluorine Anion Doping](#)

16:05 to 16:10

Mingyang Zhang (*High-Performance Polymer Nanocomposites Group, IMDEA Materials Institute, Madrid, Spain*), Arnab Gosh, Wei Tang, De-Yi Wang, Junchen Xiao

[Self-extinguishing efficiency: A new concept to discriminate incomparability in electrolyte fire safety evaluation](#)

16:10 to 16:15

Abbas Khan (*Institut des Matériaux de Nantes Jean Rouxel, IMN, CNRS, Nantes Université, Nantes, France*), Andrea Balducci, Thierry Brousse, Olivier Crosnier

[Effect of A-site deficiency on Li⁺ storage in K_{1-3x}La_x□_{2x}NbO₃ \(x ≤ 0.15\) negative electrode material](#)

16:15 to 16:20

Svenja Both (*Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany*), Timo Danner, Estefane Delz, Simon Hein, Volker Knoblauch, Arnulf Latz, Adrian Lindner, Christian Weisenberger

[Modelling performance and degradation of Ni-rich cathodes](#)

16:20 to 16:25

Teja Stüwe (*Department of Physical Chemistry, University of Innsbruck, Innsbruck, Austria*)

[Synthesis and electrochemical characterization of n- and p-type doped SiC](#)

16:25 to 16:30

Ruonan Zhu (*Department Of Chemistry Materials And Chemical Engineering, Politecnico di Milano, Milano, Italy*)

[Facilitating the Formation of Effective Solid-electrolyte-interphase on Li₄Ti₅O₁₂ Anode via ZnO Modification in Aqueous Lithium-ion Batteries](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Yong Yang (*Chemistry, Xiamen University, Xiamen, China*)

[Interfacial Issues in Sulfide-Based All-Solid-State Li Batteries](#)

17:30 to 17:45

Nuria Garcia-Araez (*Chemistry, University of Southampton, Southampton, United Kingdom*), Sacha Fop, Andrew Hector, Denis Kramer, Nina Meddings, J. Padmanabhan Vivek, Min Zhang

[Safer batteries with 'shut-down' ceramics and hybrid electrolytes](#)

17:45 to 18:00

Randy Jalem (*Research Center for Energy and Environmental Materials, National Institute for Materials Science, Tsukuba, Japan*)

[Multi-Objective Design of Antiperovskite-Type Solid Electrolytes for All-Solid-State Batteries by High-Throughput First-Principles Calculations and Machine Learning Methods](#)

18:00 to 18:15

Sven Uhlenbruck (*Institute of Energy and Climate Research, IEK-1, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Jülich, Germany*), Dina Fattakhova-Rohlfing, Martin Finsterbusch, Olivier Guillon, Christoph Roitzheim, Walter Sebastian Scheld, Doris Sebold, Yoo Jung Sohn

[Manufacturing of Solid-State Batteries meets Thermodynamics – Uncovering of Novel Phases, and their Impact on Future Experimental and Theoretical Work](#)

18:15 to 18:30

Alessandro Innocenti (*ECM, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-W, Ulm, Germany*), Simon Beringer, Stefano Passerini

[Cost and Performance Analysis as a Valuable Tool for Battery Material Research](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Gianni Appetecchi, Magdalena Titrici & Gioele Pagot

14:30 to 15:00 *Invited*

Magda Titrici (*Chemical Engineering, Imperial College London, London, United Kingdom*)

[Beyond Li: Na, K and Al based batteries-progress, challenges and perspectives.](#)

15:00 to 15:15

Vittorio Marangon (*Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*), Aislim Aracil Regalado, Katharina Bischof, Dominic Bresser, Thomas Waldmann

[Commercial sodium-ion batteries: Insights into the cell design and electrode chemistry](#)

15:15 to 15:30

Ashley Willow (*Department of Materials Engineering, Swansea University, Swansea, United Kingdom*), Sajad Kiani, Serena Margadonna, Olutimilehin Omisore, Marcin Orzech, Nathan Reynolds

[Design and Assembly of a Sodium-Ion Anode-Free Battery Based on a Prussian White Cathode](#)

15:30 to 15:45

Antunes Staffolani (*Department of Chemistry "Giacomo Ciamician", Alma Mater Studiorum - University of Bologna, Bologna, Italy*), Edoardo Finaurini, Luca Minnetti, Francesco Nobili, Leonardo Sbrascini

[Electrochemical Characterization of a Na-ion Cell based on Sn anode and Recycled NaFePO₄ cathode](#)

15:45 to 16:00

Evelina Wikner (*Electrical Engineering, Chalmers University of Technology, Gothenburg, Sweden*), Yonas Tesfamhret

[Estimating the electrode kinetics from ICI for Sodium-Ion Batteries](#)

16:00 to 16:05

Md. Abdul Aziz (*Interdisciplinary Research Center for Hydrogen Technologies, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia*), Muhammad Ali, Abbas Saeed Hakeem, Syed Shaheen Shah, Zain H. Yamani

[High-Energy-Density All-Solid-State Supercapacitors via Nickel-Cobalt Double Hydroxide Nanoflowers on Jute Sticks-Derived Activated Carbon Nanosheets](#)

16:05 to 16:10

Yasmin Lamyca (*Department of Industrial Chemistry, University of Bologna, Bologna, Italy*)

[PVA H₂SO₄ Hydrogel for wearable devices](#)

16:10 to 16:15

Sebastian Liebl (*Physical Chemistry, University Innsbruck, Innsbruck, Austria*), Engelbert Portenkirchner, Daniel Werner

[Small Organic Molecules as Electrode Materials for Aqueous Sodium-Ion Batteries](#)

16:15 to 16:20

Carla Albenga (*WMG, University of Warwick, Coventry, United Kingdom*), James A. Gott, Ivana Hasa, Faduma Maddar

[Understanding bulk degradation of Sn-based anodes for sodium-ion batteries](#)

16:20 to 16:25

Thukshan Samarakoon (*Stephenson Institute for Renewable Energy, Chemistry, The University of Liverpool, Liverpool, United Kingdom*), Elliot Coulbeck, Laurence J. Hardwick, Alex R. Neale, Tyler Petek, Dan Saccomando

[Online pressure cells enable multicycle operando monitoring of redox-mediated metal-oxygen battery chemistries](#)

16:25 to 16:30

Fabio Biffoli (*Department of Chemistry "Ugo Schiff", University of Florence, Firenze, Italy*), Marco Bonechi, Antonio De Luca, Claudio Fontanesi, Massimo Innocenti, Marco Pagliai

[Chiral and Achiral Polycyclic Aromatic Hydrocarbon Conductors: A Theoretical Study on Vibrational Polaron Signature and Conceptualization of the Chiral Polaron Signature](#)

16:30 to 17:00

Coffee Break

17:00 to 17:15

Engelbert Portenkirchner (*Physical Chemistry, University of Innsbruck, Innsbruck, Austria*), Josef Gallmetzer, Thomas Hofer, Mihai Irimia-Vladu, Stefanie Kröll, Niyazi Serdar Sariciftci, Daniel Werner, Dominik Wielend

[Anthraquinone and its Derivatives as Sustainable Materials for Organic Sodium Ion Batteries – a joint Experimental and Theoretical Investigation](#)

17:15 to 17:30

Gioele Pagot (*Department of Industrial Engineering, University of Padova, Padova, Italy*), Federico Brombin, Vito Di Noto, Enrico Negro, Ketì Vezzù

[Conductivity Mechanisms in Solid State Hybrid Inorganic Organic Polymer Electrolytes for Sodium Secondary Batteries](#)

17:30 to 17:45

Margaux Guiraud (*IFM (institute for frontier materials), Deakin University, Melbourne, Australia*), Maria Forsyth, Mega Kar, Faezeh Makhlooghi Azad

[Borate-Based Polymer Electrolytes for Sodium Batteries.](#)

17:45 to 18:00

Giovanni Battista Appetecchi (*SSPT, ENEA, S. Maria di Galeria (Rome), Italy*), Sergio Brutti, Giovanna Maresca, Michela Ottaviani, Angelica Petrongari, Kevin M Ryan

[Can Ionic Liquid Electrolytes Improve the Interfacial Compatibility towards Sodium Battery Electrodes?](#)

18:00 to 18:15

Franziska Jach (*Department Energy Materials and Test Devices, Fraunhofer IISB, Erlangen, Germany*), Max Bamberg, Martin Eckert, Gero Frisch, Felix Fuhrmann, Franziska Jach, Ulrike Wunderwald

[Reducing Self-Discharge Processes in Aluminum-Graphite Batteries](#)

18:15 to 18:30

Paloma Almodovar (*R&D, Zelestium Technologies, Soria, Spain*), Ana Arenillas, Ignacio Camean, Joaquin Chacón, Samanta Flores-López, Ana Beatriz García, Maria Luisa López, Julio Ramirez-Castellanos, Natalia Rey-Raap, Lara Santos, Belen Sotillo, Miguel Tinoco, Inmaculada Álvarez-Serrano

[Carbon Xerogels: Breaking Capacity Carriers in Aluminium-ion Batteries](#)

S3 - Hydrogen production technologies

Room : R3 - Isola Madre

Chaired by Elena Saminova, Evelina Slavcheva & Irene Vassalini

14:30 to 15:00 *Invited*

Evelina Slavcheva (*Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria*), Galin Borisov, Iveta Boshnakova, Mariela Dimitrova, Borislava Mladenova

[Investigation of montmorillonite as carrier for OER catalysts](#)

15:00 to 15:15

Garance Cossard (*LEPMI, Université Grenoble Alpes, Grenoble, France*), Marian Chatenet, Gwénaëlle Kérangueven, Elena Savinova, Eric Sibert

[Oxygen evolution reaction in alkaline media using Co-spinels and stainless steel based electrodes](#)

15:15 to 15:30

Irene Vassalini (*Department of Information Engineering, University of Brescia, Brescia, Italy*), Ivano Alessandri, Luca Ciambriello, Luca Gavioli

[Electrocatalytic Performance and Stability of Nanogranular NiFe Thin Film for Oxygen Evolution Reaction in Alkaline Media](#)

15:30 to 15:45

Vladislav Mints (*DCBP, University of Bern, Bern, Switzerland*), Matthias Arenz, Jan Rossmeisl, Katrine Svane

[Exploring the high entropy oxide composition space: insights through comparing experimental with theoretical models for the oxygen evolution reaction](#)

15:45 to 16:00

Etienne Berner (*Department of Chemistry, Biochemistry and Pharmaceutical Sc., University of Bern, Bern, Switzerland*), Matthias Arenz, Gustav K.H. Wiberg

[Achieving enhanced Oxygen Evolution Reaction Rates on Ni-based Foam Catalysts in a Gas Diffusion Electrode Setup](#)

16:00 to 16:05

Pierrick Merlin (*CEA, Université Paris Saclay, Gif-sur-Yvette, France*), Jean-Marc Borgard, Romain Chanson, Alexis Fallet, Benoit Gwinner, Fabien Rouillard, Nathanaelle Schneider

[Elaboration of High-Efficient Coatings for Bipolar Plate of Proton Exchange Membrane Water Electrolyzers](#)

16:05 to 16:10

Quinten Van Laere (*Applied Electrochemistry and Catalysis (ELCAT), University of Antwerp, Wilrijk, Belgium*), Tom Breugelmans, Jonas Hereijgers, Kevin Van Daele

[Enhancing Electrolyser Efficiency by Studying Porous Transport Layers and Flow Field Designs for Alkaline Water Electrolysis](#)

16:10 to 16:15

Claudio Maria Pecoraro (*Engineering department, University of Palermo, Palermo, Italy*), Marianna Bellardita, Francesco Di Franco, Vittorio Loddo, Monica Santamaria

[Enhancing H₂ production rate by addition of biomasses in PGM-free batch and continuous photoelectrochemical cells.](#)

16:15 to 16:20

Fanny Reichmayr (*Chair of Electrochemistry, Technische Universität Dresden, Dresden, Germany*), Renhao Dong, Xinliang Feng, Axel Lubk, Inez Weidinger, Daniel Wolf, Geping Zhang

[Spectroscopic and Spectro-Electrochemical Characterisations of a Bimetallic Layered Metal-Organic Framework Catalyst: Revealing Structural Dynamics and Catalytic Behaviour](#)

16:20 to 16:25

Moritz Karl Rosenthal (*School of Chemical Engineering, Aalto University, Espoo, Finland*), Tanja Kallio, Lilian Moumaneix, Eeva-Leena Rautama

[Fluorine-doped CuMn₂O₄ as PGM-free electrocatalyst for oxygen evolution reaction in acidic media: investigating reaction mechanism and deactivation](#)

16:25 to 16:30

Arthur Bukowski (*LEPMI, UGA-Grenoble INP, Grenoble, France*), Antoine Bonnefont, Marian Chatenet, Jean-François Vanhumbeeck

[Iron Contamination and Electrodeposition on Nickel Cathodes in Alkaline Water Electrolysers](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Elena Savinova (*ICPEES, University of Strasbourg - CNRS, Strasbourg, France*), Tristan Asset, Antoine Bonnefont, Fabrice Bournel, Jean-Jacques Gallet, Iryna Makarchuk, Benoit P. Pichon, Benjamin Rotonelli

[Core-Shell Fe₃O₄@CoFe₂O₄ Spinel Nanoparticles as Promising Materials for the Oxygen Evolution Reaction in Alkaline Media](#)

17:30 to 17:45

Hongyuan Yang (*Department of Chemistry, Technical University of Berlin, Berlin, Germany*), Matthias Driess, Prashanth Menezes

[Novel Iron-based Compounds Mediated by s-, p-, and f-block Metals for Alkaline Oxygen Evolution Electrocatalysis](#)

17:45 to 18:00

Sebastian Tiggess (*Department of Heterogeneous Catalysis, Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*), Serena DeBeer, Ulrich Hagemann, Walid Hetaba, Saskia Heumann, Liqun Kang, Milen Nachev, Michael Poschmann, Daniela Ramermann, Robert Schlögl, Bernd Sures

[Ultra-Low Loading Transition Metal's Impact on the Alkaline OER Performance of N-Doped, Hydrothermal Carbon](#)

18:00 to 18:15

Elod Gyenge (*Chemical and Biological Engineering, University of British Columbia, Vancouver, Canada*), Yu Pei, David Wilkinson, Wendie Wu

[High-Performance Reversible Oxygen Reduction/Evolution Gas Diffusion Electrodes with Core-Shell Mn/Mn₃O₄ Catalysts](#)

18:15 to 18:30

Ladislav Kavan (*Electrochemical Materials, J. Heyrovsky Institute of Physical Chemistry, Praha 8, Czech Republic*), Zdenek Hubicka, Ladislav Kavan, Hana Krysova, Vera Mansfeldova, Hana Tarabkova, Marketa Zukalova

[Photoelectrolysis of Water on SnO₂ and ZnO: Effects of Electrode Morphology and Interface Properties](#)

S4 - Hydrogen conversion technologies

Room : R4 - Mottarone

Chaired by Andrea Casalegno, Irena Zenyuk & Mohsin Muhyuddin

14:30 to 15:00 *Invited*

Iryna Zenyuk (*Chemical and Biomolecular Engineering, University of California Irvine, Irvine, USA*)

[Comparison of Various Accelerated Stress Tests to Understand Degradation of PtCo/C Catalysts in Polymer Electrolyte Fuel Cell](#)

15:00 to 15:15

Hadi Heidary (*Chemical Engineering, University of Birmingham, Birmingham, United Kingdom*), Hadi Heidary, Robert Steinberger-Wilckens

[Development of Polymer Electrolyte Fuel Cells with Porous Foam Distributor](#)

15:15 to 15:30

Ivan Pivac (*Department of Mechanical Engineering and Naval Architecture, FESB, University of Split, Split, Croatia*), Frano Barbir, Quentin Meyer, Ivan Pivac, Chuan Zhao

[Localized Operando Diagnostics of PEM Fuel Cells – Internal Performance Insights](#)

15:30 to 15:45

Yoed Tsur (*Chemical Engineering, Technion - Israel Institute of Technology, Haifa, Israel*), Gal Avioz Cohen, Wisal Khalailiy

[Degradation studies on PEMFC Cathodes using Distribution Functions of Relaxation Times](#)

15:45 to 16:00

Fabrice Micoud (*CEA LITEN, Université Grenoble Alpes, Grenoble, France*), Laure Guétaz, Benoit Morin, Jean-Philippe Poirot-Crouvezier, Magali Reytiér, Guillaume Soubeyran

[Analyzing innovative operating strategies for the optimization of PEMFC stack performance recovery](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R4 - Mottarone

16:00 to 16:05

Radhika Krishna Hema (*Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany*)

[Interphase Tuning in Acetate-based Water-in-Salt Electrolytes \(WiSEs\) for Sodium-ion Batteries Using Halogenated Additives](#)

16:05 to 16:10

Jithin Antony (*Energy Storage & Conversion, DECHEMA Forschungsinstitut, Frankfurt am Main, Germany*), Jean Francois Drillet, Willi Peters

[Development of a Rechargeable Jelly Roll Zinc/Manganese Battery](#)

16:10 to 16:15

Muath Radi (*Physico-chemistry of surfaces and polymer materials, IPREM, University of Pau & Pays Adour, CNRS, Pau, France, Pau, France*),
Rémi Dedryvère, Alexandre Ponrouch, Taniya Purkait

[Evaluation of Additives in Mg\(TFSI\)₂ Electrolyte for Mg Plating/Stripping Process in Rechargeable Mg Batteries](#)

16:15 to 16:20

Faduma Maddar (*WMG, University of Warwick, Coventry, United Kingdom*),
Aidan Cheung, Ivana Hasa, Maider Zarrabeitia

[Investigating the Impact of 0 V Storage on Prussian White Cathode-Based Sodium-ion Battery Cells](#)

16:20 to 16:25

Emanuele Maria Groiss (*Centre for Sustainable Energy - Industrial Engineering Dept., Fondazione Bruno Kessler - Università degli Studi di Trento, Trento, Italy*), Mattia Duranti, Michele Fedel, William Gomes de Morais, Edoardo Gino Macchi

[Iron hydrolysis suppression with Glycine addition in a concentrated Iron electrolyte for aqueous Redox Flow Batteries](#)

16:25 to 16:30

Nathan Reynolds (*Chemical Engineering, Swansea University, Swansea, United Kingdom*), Serena Margadonna

[Zero-Excess Sodium-Organic Battery Through in-situ Metal Plating](#)

16:30 to 17:00

Coffee Break

17:00 to 17:30 *Invited*

Andrea Casalegno (*Dipartimento di Energia, Politecnico di Milano, Milano, Italy*), Andrea Baricci, Elena Colombo, Amedeo Grimaldi

[PEMFC performance decay during real-world light and heavy duty vehicle operation: degradation mechanisms and their impact](#)

17:30 to 17:45

Karin Beaussant Törne (*Corrosion, RISE, Kisa, Sweden*), Tomas Kubart, Anders Lundblad, Live Mølmen, Hannes Nederstedt, Smita Rao, Richard Westergård, Yao Yao

[Corrosion resistance of coated Al for bipolar plates in PEM fuel cells](#)

17:45 to 18:00

Elena Colombo (*Department of Energy, Politecnico di Milano, Milano, Italy*), Andrea Baricci, Andrea Casalegno, Amedeo Grimaldi, Yu Morimoto, Magnolia Pak, Iryna V. Zenyuk

[Correlating the PEM Fuel Cell Air-Inlet Degraded Performance to the Heterogeneous Cerium Distribution Caused by Automotive Operations](#)

18:00 to 18:15

Alexandr Oshchepkov (*ICPEES, University of Strasbourg, Strasbourg, France*), Tristan Asset, Elena Savinova

[Enhancing the CO tolerance of Pt/C anodes of the proton exchange membrane fuel cells through optimization of the ionomer concentration in the catalyst layer](#)

18:15 to 18:30

Sylvain Brimaud (*Fuel Cell Fundamentals, Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW), Ulm, Germany*), Alessandro Brega, Ludwig Jörissen, Masuma Sultana Ripa, Oliver Thimm

[Applied electrochemistry for the maturation of hydrogen fuel cell technology](#)

Tuesday 11 June 2024 - Morning

Keynote

Room : R1 - Isola Bella Theatre

08:30 to 09:20 Chaired by Piercarlo Mustarelli

Marian Chatenet (LEPMI, Grenoble Institute of Technology, Saint Martin d'Hères, France), Huong Doan, Ricardo Sgarbi

[Carbon-capped metal-based nanoparticles; towards fast and durable hydrogen reactions catalysis in alkaline electrolytes](#)

S1 - Lithium based technologies

Room : R1 - Isola Bella Theatre

Chaired by Mauro Pasta & Claire Villevielle

09:30 to 10:00 Invited

Claire Villevielle (LEPMI, CNRS, Saint Martin d'Hères, France)

[Microstructure Evolution in Solid-State Batteries During Cycling](#)

10:00 to 10:15

Anna Windmüller (Institute of Energy and Climate Research (IEK-9), Forschungszentrum Jülich GmbH, Jülich, Germany), Anna Domgans, Rüdiger-A. Eichel, Bing-Joe Hwang, Felix Hüning, Hans Kungl, Kristian Schaps, Roland Schierholz, Bereket Woldegbreal Taklu, Hermann Tempel, Chih-Long Tsai, Shicheng Yu, Frederik Zantis

[The role of LiGaO₂ in Li-metal batteries using Ga-doped garnet solid-electrolytes](#)

10:15 to 10:30

Lorena García (Electrochemical Energy Storage, CIC energiGUNE, Vitoria, Spain), Itziar Aldalur, Michel Armand, Mikel Arrese-Igor, Julen Etxabe, Maria Martinez-Ibañez, Leire Meabe, Izaskun Serna

[Towards novel CF₃-free lithium salt for solid polymer electrolytes](#)

10:30 to 10:45

Daniele Callegari (*Physical Chemistry, University of Pavia, Pavia, Italy*),
Stefania Davino, Eliana Quartarone

[Quasi-Solid Electrolyte with Autonomous Self-Healing Capabilities for Li-Ion Batteries](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Mauro Pasta (*Department of Materials, University of Oxford, Oxford, United Kingdom*)

[Lithium-Alloy Anodes in Solid-State Batteries](#)

11:45 to 12:00

Jiří Červenka (*Department of Thin Films and Nanostructures, FZU - Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic*)

[Engineering of Nanostructured High-Capacity Anode Materials for Lithium-Ion Batteries](#)

12:00 to 12:15

Damian Kowalski (*Faculty of Chemistry, University of Warsaw, Warsaw, Poland*), Sandra Sajeev, Mewin Vincent

[In-Situ Raman Spectroscopy of Li⁺ and Na⁺ Storage in Anodic Nanotubes](#)

12:15 to 12:30

Saveria Santangelo (*Department of Civil, Energy, Environmental and Materials Eng, Mediterranean University, DICEAM, Reggio Calabria, Italy*), Vito Di Noto, Marco Giorgetti, Min Li, Yanchen Liu, Mariam Maisuradze, Gioele Pagot, Nicola Pinna, Alessandro Ponti, Saveria Santangelo, Claudia Triolo

[Li-Storage Performance of \(Mn^{1/5}Fe_{1/5}Co_{1/5}Ni_{1/5}Zn_{1/5}\)₃O₄ Nanofibers: Role of the Microstructure](#)

12:30 to 12:45

Mario Marinaro (*ECM, ZSW - Zentrum für Sonnenenergie-und Wasserstoff- Forschung, Ulm, Germany*)

[The Role of Silicon in High-Energy Li-ion Batteries](#)

12:45 to 13:00

Afshin Pendashteh (*Multifunctional Nanocomposites Group, IMDEA Materials Institute, Getafe, Spain*), Rafael Tomey, Juan J. Vilatela

[Silicon nanowire paper anodes in gen. 3b Li-ion batteries exceeding 400Wh/Kg](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by *Julia Amici*

09:30 to 10:00 *Invited*

Shinichi Komaba (*Department of Applied Chemistry, Tokyo University of Science, Tokyo, Japan*), Tomooki Hosaka, Masayoshi Matsuzaki, Kosuke Nakamoto, Nobuhiro Okada, Masayoshi Shimizu, Ryoichi Tatara, Kazuteru Umetsu

[Sacrificial Electrode Additive in Na-ion Batteries to Compensate for the Sodium Deficiency in P2-Type Layered Oxides](#)

10:00 to 10:15

Maider Zarrabeitia (*Helmholtz Institute Ulm, Karlsruhe Institute of Technology, Ulm, Germany*), Elizabeth Castillo-Martínez, Jinyu Chen, Sohelia Ebrahimi, Boyan Iliev, Thomas J. S. Schubert

[Ternary Polymer Electrolytes for Potassium-based Solid-State Batteries](#)

10:15 to 10:30

Ana López Cudero (*HEMPOL, ICTP-CSIC, Madrid, Spain*), Ángela Campo, Nuria García, Víctor Gregorio, Aránzazu Martínez-Gómez, Pilar Tiemblo

[Functional Separators for Semi-solid Electrolytes in Beyond-Li Batteries](#)

10:30 to 10:45

Hagar K. Hassan (*Echem II and Theory I, Helmholtz Institute Ulm (HIU), Ulm, Germany*), Muhammed B. Arian, Paul Hoffmann, Kana Inshigami, Timo Jacob, Aya Mohamed

[Unraveling Electrolyte Challenges in Post-Lithium Ion Batteries: From Metal-Organic Frameworks to Metal-Rich Antiperovskites](#)

10:45 to 11:15 Coffee Break

11:15 to 11:30

Vito Di Noto (*Department of Industrial Engineering, University of Padua, Padua, Italy*), Enrico Negro, Gioele Pagot, Ketì Vezzù

[Beyond Lithium Batteries: Conductivity mechanisms of New functional electrolytes](#)

11:30 to 11:45

Simone Dagostino (*Department of Chemistry, university of Bologna, Bologna, Italy*), Samet Ocak, Francesca Soavi

[Effects of Supramolecular Complexations of Solid-Acids with Crown Ethers: a Route to Access Novel Solid-State Electrolytes](#)

S3 - Hydrogen production technologies

Room : R3 - Isola Madre

Chaired by Tobias Binninger & Svitlana Pylypenko

09:30 to 10:00 *Invited*

Svitlana Pylypenko (*Chemistry, Colorado School of Mines, Golden, USA*)

[Characterization of Surfaces and Interfaces in Polymer Electrolyte Membrane Electrolyzers](#)

10:00 to 10:15

Tomas Bystron (*Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic*), Tereza Bautkinova, Karel Bouzek, Johannes Häusler, Meital Shviro, Nikolai Utsch

[Investigation of Ti Hydrides for Proton Exchange Membrane Water Electrolysis Application](#)

10:15 to 10:30

Bas van Dijk (*STIP, TNO, Petten, Netherlands*), Johan Buurma, Oscar Diaz Morales, Simone Dussi, Gopalan Jayashankar, Marcelle Potgieter, Davide Ripepi, Jie Shen, Rick de Waard, Coen van Aken, Emma van Zanten

[Next Generation Components and Manufacturing for PEM Water Electrolysis](#)

10:30 to 10:45

Pascal Sous (*Electrolysis, The hydrogen and fuel cell center GmbH, Duisburg, Germany*), Sebastian Hirt, Harry Hoster, Natalia Levin-Rojas

[Enhancing PEM water electrolysis performance by optimizing Ir-catalyst ink](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Aliaksandr Bandarenka (*Physics, Technical University of Munich, Garching, Germany*)

[Identification of Active Electrocatalytic Sites for the Hydrogen Evolution Reaction](#)

11:45 to 12:00

Dzevad Kozlica (*Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia*), Marjan Bele, Pedro Farinazzo Bergamo Dias Martins, Matjaz Finsgar, Maris M. Mathew, Dusan Strmcnik

[Key Parameters Controlling the Hydrogen Evolution Reaction on Nickel](#)

12:00 to 12:15

Arnaud Viola (*LEPMI, Grenoble INP, Grenoble, France*), Raphaël Chattot, Jakub Drnec, Frédéric Maillard, Vincent Martin, Jaysen Nelayah, Galina Tsirlina

[Hydrogen Trapping in Palladium Nanoparticles, and its Influence on the Rate of Hydrogen Evolution/Oxidation Reaction](#)

12:15 to 12:30

Elena L. Gubanova (*Department of Physics, Technische Universität München, Garching bei München, Germany*), Aliaksandr S. Bandarenka, Johannes A. Fischer, Batyr Garlyyev, Elena L. Gubanova, Jan M. Macak, Frédéric Maillard, Jan Michalička, Kais Sadraoui, Peter M. Schneider, Christian M. Schott, Anatoliy Senyshyn, Arnaud Viola, Sebastian A. Watzele

[Pd-Based Catalyst Synthesized via Electrochemical Erosion for Hydrogen Evolution Reaction](#)

12:30 to 12:45

Kangwoo Cho (*Division of Environmental Science and Engineering, Pohang University of Science and Technology, Pohang, Korea*), Jiseon Kim

[Electrolytic Hydrogen Generation Efficiency Coupled with Urea and Ammonia Oxidation Reactions](#)

12:45 to 13:00

Iryna Antonyshyn (*Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany*), Ulrich Burkhardt, Yuri Grin, Peter Höhn, Marcus Schmidt, Büsra Sevdaroglu

[Heterophase boronization as a flexible method for electrocatalyst preparation](#)

13:00 to 13:15

Salvo Mirabella (*Physics and Astronomy, University of Catania, Catania, Italy*), Sergio Battiato, Luca Bruno, Antonio Terrasi, Mario Urso

[Ni-based Microflowers for Water Splitting](#)

S4 - Hydrogen conversion technologies

Room : R4 - Mottarone

Chaired by Christian Durante

09:30 to 10:00 *Invited*

Frederic Jaouen (*ICGM, CNRS, Montpellier, France*), Simon Amigues, Nicolas Bibent, Laetitia Dubau, Frédéric Maillard, Eliot Petitdemange

[MOF-derived Nickel Catalysts for Anion Exchange Membrane Fuel Cell Anode](#)

10:00 to 10:15

Hsiharng Yang (*Graduate Institute of Precision Engineering, National Chung Hsing University, Taichung, Taiwan*), Guan-Yu Chu

[Silver Nano-particles Modification Used as Cathode Catalysts to Enhance Anion Exchange Membrane Fuel Cells](#)

10:15 to 10:30

Giovanni Di Liberto (*Materials Science, Università degli Studi di Milano-Bicocca, Milano, Italy*), Livia Giordano, Gianfranco Pacchioni

[Modeling Single Atom Catalysts](#)

10:30 to 10:45

Fabio Coral Fonseca (*CECCO, IPEN, Sao Paulo, Brazil*), Tamara Moraes

[Solid-solution Driven Metallic Active Sites in Perovskite Anodic Layer for Direct Ethanol Solid Oxide Fuel Cell](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Ulrike I. Kramm (*Chemistry, TU Darmstadt, Darmstadt, Germany*), Vladislav Gridin, Hendrik Haak, Ulrike I. Kramm, Lingmei Ni, Anna Ostroverkh, Nicole Segura-Salas, Pascal Theis, Xiaohua Yang

[How do nanoparticles affect FeNC catalysts and their catalytic performance for the ORR and CO₂ conversion?](#)

Tuesday 11 June 2024 - Afternoon

S1 - Lithium-based technologies

Room : R1 - Isola Bella Theatre

Chaired by Giuseppe Antonio Elia & Daniele Callegari

14:30 to 14:35

Johannes Hörmann (*Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany*), Ashutosh Agrawal, Timo Danner, K. Andreas Friedrich, Simon Hein, Birger Horstmann, Dennis Kopljar, Yannick Kuhn, Arnulf Latz

[Combining Single-Particle Measurements and Simulations for Advanced Electrochemical Characterization of Lithium-Ion Battery Materials](#)

14:35 to 14:40

Jean-Baptiste Guy (*Electric Mobility, CEA LITEN, Grenoble, France*), Frédéric Bossard, Benoit Chavillon, Sophie Chazelle, Jean-Baptiste Guy, Sébastien Martinet, Eric Mayousse, Willy Porcher

[Influence of the Electrolyte and Temperature on the Tortuosity Measurement by Electrochemical Impedance Spectroscopy](#)

14:40 to 14:45

Chenkun Li (*Wilhelm-Johnen Str.1, Forschungszentrum Jülich GmbH, Jülich, Germany*), Jun Huang

[Deciphering impedance response of the solid-electrolyte interphase at lithium metal anodes](#)

14:45 to 14:50

Bhavya Nidhi Vats (*Centre for Automotive Research and Tribology, Indian Institute of Technology Delhi, New Delhi, India*), S Fatima, Raghvendra Gupta, Amit Gupta, Deepak Kumar

[Electrochemical performance and post-operational characteristics of composite anode: Graphite-x\(Si@TiO₂\) nanoparticles \(x=5,10,15%\)](#)

14:50 to 14:55

Philipp Müller (*IEK-9, Forschungszentrum Jülich GmbH, Jülich, Germany*), Dominic Bresser, Hans Kungl, Eichel Rüdiger, Sandro Schöner, Dominik Steinle, Conrad Szczuka, Hermann Tempel, Chih-Long Tsai, Anna Windmüller, Shicheng Yu

[Decoding low coulombic efficiencies in PEO based zero excess lithium metal solid-state batteries](#)

Panel Discussion

15:00 to 16:30

Symposia 1 & 2

16:30 to 17:00

Coffee Break

17:00 to 17:15

Liang-Yin Kuo (*Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan*), Yola Bertilsya Hendri, Chun-Chen Yang

[Taylor–Couette reactor synthesis method and density functional theory study for investigating structure, morphology, and diffusion mechanism in Ta-modified Ni-rich cathode material](#)

17:15 to 17:30

Jean-Francois Colin (*DEHT/ Materials Laboratory, Univ. Grenoble Alpes, CEA-LITEN, Grenoble, France*), Marion Chandesris, Thibaut Jousseau, Sandrine Lyonard, Samuel Tardif

[Significance of the Strain-Lithium Content Relationship in Ni-Rich Cathodes: An Operando Study](#)

17:30 to 17:45

Marc Nel-lo (*Energy Storage, Harvesting and Catalysis, IREC, Barcelona, Spain*), Jordi Jacas, Elias Martínez, Leif Olav

[Investigating the Influence of Synthesis-Generated Carbonates on NMC811](#)

17:45 to 18:00

Valerie Siller (*Electrochemistry Laboratory, Paul Scherrer Institute, Villigen, Switzerland*), Mario El Kazzi, Carlos Antonio Fernandes Vaz, Christian Jordy, Barthélémy Lelotte, Vincent Pelé, Robin Wullich

[Probing the instable interface between solid electrolytes and high voltage cathodes with operando X-ray spectroscopy](#)

18:00 to 18:15

Francesca Soavi (*Department of Chemistry "Giacomo Ciamician", Alma Mater Studiorum Università di Bologna, Bologna, Italy*), José Ramón Herrera Garza, Clara Santato

[In Operando Characterization of the Electronic Properties of Li-ion Intercalation Materials](#)

18:15 to 18:30

Laura Silvestri (*Department of Energy Technologies and Renewable Sources, ENEA, Rome, Italy*), Giovanni Battista Appetecchi, Sergio Brutti, Arcangelo Celeste, Eleonora De Santis, Valeria Lombardi

[Co-free Li-rich Layered Oxide Materials as Positive Electrodes in Li-ion Batteries](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Shinichi Komaba & Hamideh Darjazi

14:30 to 14:35

Meenal Gupta (*Department of Innovation Engineering, University of Salento, Lecce, Italy*), Patrizia Bocchetta, Yogesh Kumar, Ashwani Kumar

[Modified Carbonaceous Electrode Materials for Energy Storage and Conversion Devices](#)

14:35 to 14:40

Khai Shin Teoh (*Research Group Prof. Andrea Balducci, Friedrich-Schiller-University Jena, Jena, Germany*), Andrea Balducci, Sandesh Darlami Magar, Juan Luis Gómez Urbano, Massimo Melchiorre, Francesco Ruffo

[Bio-based Solvent Gamma-valerolactone for Energy Storage Devices](#)

14:40 to 14:45

Prisca Viviani (*Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy*)

[Ti₃C₂T_x MXene flakes size effect on zinc crystal growth in anode-free Zn batteries](#)

14:45 to 14:50

Mirabella Salvo (*Dipartimento di Fisica e Astronomia, Università di Catania, catania, Italy*), Elena Bruno, Giacometta Mineo, Antonio Terrasi, Federico Ursino

[Improved specific capacitance of WO₃ and MoO₃ nanostructures obtained by hydrothermal synthesis for energy storage applications.](#)

14:50 to 14:55

Massimo Melchiorre (*Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Napoli, Italy*), Balducci Andrea, Ruffo Francesco, Juan Luis Gómez Urbano, Khai Shin Teoh

[Lactic Acid Dioxolanes as Bio-based Solvents for Supercapacitors and Li-ion Batteries](#)

14:55 to 15:00

Bashir Ahmed Johan (*Materials Science and Engineering, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*), Atif Saeed Alzahrani, Md Abdul Aziz

[Electrodeposited Zinc-ion Batteries: High-Performance and Low-Cost Aqueous Systems for Flexible Electronics.](#)

Panel Discussion

Room : R1 - Isola Bella Theatre

15:00 to 16:30

Symposia 1 & 2

16:30 to 17:00

Coffee Break

17:00 to 17:15

Omar Elkhafif (*Institute of Electrochemistry, Ulm University, Ulm, Germany*), Hagar K. Hassan, Timo Jacob

[Boosting Mg Deposition/Dissolution from Ionic liquids; The role of different Additives for Applications in Mg-ion Batteries](#)

17:15 to 17:30

Shanghai Wei (*Department of Chemical and Materials Engineering, The University of Auckland, Auckland, New Zealand*)

[Alloy anodes for Magnesium Rechargeable Batteries](#)

17:30 to 17:45

Fabio Maroni (*Accumulator Materials Research Team, Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW), Ulm, Germany*), Mario Marinaro

[Tracking Nucleation of Electrodeposited Divalent Cations](#)

17:45 to 18:00

Malaurie Paillot (*DRF/IRAMIS/NIMBE, CEA Saclay, Gif-sur-Yvette, France*), Magali Gauthier, Sophie Le Caër, Bénédicte Montigny, Alan Wong

[Fundamental understanding of concentrated aqueous electrolytes for Mg batteries](#)

18:00 to 18:15

Patrick Gerlach (*IMN, Institut des Matériaux de Nantes Jean Rouxel, Nantes Université, Nantes, France*), Thierry Brousse, Camille Douard, Fabrice Leroux, Julien Sarmet, Philippe Stevens, Christine Tavoit-Gueho, Gwenaëlle Toussaint

[Understanding the Electrochemical Behavior of Layered Double Hydroxides with Intercalated Ferrocene Anions for Energy Storage Application](#)

18:15 to 18:30

Megan Daw (*School of Chemistry, University of Southampton, Southampton, United Kingdom*), Megan Daw, Andrew Hector, Gillian Reid

[Novel Electrolyte Materials for Rechargeable Magnesium Metal Batteries](#)

S3 - Hydrogen production technologies

Room : R3 - Isola Madre

Chaired by Carlo Santoro, Aliaksandr Bandarenka & Giovanni Di Liberto

14:30 to 14:35

Yi-Hsuan Wu (*Department of Mechanical and Process Engineering, ETH Zurich, Zurich, Switzerland*), Denis A. Kuznetsov, Christoph R. Müller

[Probing Surface Transformations of Lanthanum Nickelate Electrocatalysts During Oxygen Evolution Reaction](#)

14:35 to 14:40

Polina Kalachikova (*Department of Chemistry and Materials Science, Aalto University, Espoo, Finland*), Tanja Kallio, Lilian Moumaneix

[Low-cost PGM-free bimetallic Nickel-Iron MOF-derived catalysts for electrocatalytic hydrogen oxidation reaction in alkaline electrolyte](#)

14:40 to 14:45

Niklas Thissen (*Electrochemical Reaction Engineering, RWTH Aachen ERT, Aachen, Germany*), Anna K. Mechler, Alina Tran

[The Role of Fe in Stability Investigations of Ni Catalysts in Alkaline Water Electrolysis under Fluctuating Loads](#)

14:45 to 14:50

Katerina Hradecna (*Department of Inorganic Technology, University of Chemistry and Technology, Prague, Czech Republic*), Karel Bouzek, Karel Denk, Jaromir Hnat, Roman Kodym, Michaela Plevova

[The effect of catalytic layer composition and properties on alkaline membrane water electrolysis](#)

14:50 to 14:55

Clara Schare (*Electrochemical Energy Systems, Hahn-Schickard, Freiburg, Germany*), Carolin Klose, Andreas Münchinger, Giorgi Titvinidze, Severin Vierrath, Marco Viviani

[\$\mu\$ m crosslinked hydrocarbon membrane reaching stable performance of 5 A/cm² at 1.8V](#)

15:00 to 15:30 *Invited*

Tobias Binninger (*Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany*), Adrian Heinritz, Juan Herranz, Paramaconi Rodriguez, Thomas J. Schmidt

[Alkaline Hydrogen Evolution and Oxidation Reaction on Platinum: Potential Scale and the Effects of H₂ Concentration and Electrolyte pH](#)

15:30 to 15:45

Agnieszka Brzózka (*Department of Physical Chemistry and Electrochemistry, Jagiellonian University, Krakow, Poland*), Mikolaj Kozak, Lifeng Liu, Mateusz Marzec, Renata Palowska, Daniel Piecha, Grzegorz Sulka, Mateusz Szczerba, Joanna Waksmundzka

[Electrodeposition of binary compounds from deep eutectic solvents for electrochemical water splitting](#)

15:45 to 16:00

Mir F. Mousavi (*Tarbiat Modares University, Tehran, Iran*), Abolhassan Noori

[Advanced Emerging Materials for Sustainable Hydrogen Production](#)

16:00 to 16:15

Kassa Belay Ibrahim (*Department of Molecular Science and Nano-systems, Ca'Foscari University of Venice, Venice, Italy*), Mohammadhossein Hamrang, Elisa Moretti, Tofik Ahmed Shifa, Alberto Vomiero

[Synergistic effect of Ru-doped Fe₂TiO₅: An innovative catalyst advancing Urea-Assisted water splitting efficiency](#)

16:15 to 16:30

Magdalena Warczak (*Faculty of Chemical Technology & Engineering, Bydgoszcz University of Science and Technology, Bydgoszcz, Poland*), Magdalena Bonarowska, Agnieszka Dabrowska, Roman Minikayev, Marcin Opallo, Magdalena Osial, Marcin Pisarek, Natalia Slawkowska, Weronika Urbanska

[Insights into high catalytic activity of Li-ion battery waste toward ORR to H₂O₂ – batteries in a circular economy](#)

16:30 to 17:00 Coffee Break

Panel Discussion

17:00 to 18:30 Symposia 3 & 4

S1 - Lithium-based technologies

Room : R4 - Mottarone*Chaired by Shahid Khalid**14:30 to 14:35*

Federico Scarpioni (*Energy storage and converter, Fraunhofer IFAM, Bremen, Germany*), Fabio La Mantia, Federico Scarpioni

[Dynamic Electrochemical Impedance Spectroscopy for the Investigation of Materials for Energy Storage in Three-Electrode Cells](#)

14:35 to 14:40

Christoph P. Schmidt (*Institute for Computational Mechanics, Technical University of Munich, Garching bei Muenchen, Germany*), Gil Robalo Rei, Wolfgang A. Wall

[Method Driven Optimization of the Composite Electrode Composition of Solid-State Batteries](#)

14:40 to 14:45

Christian Leibing (*Institute for Technical and Environmental Chemistry, Friedrich Schiller University Jena, Jena, Germany*), Andrea Balducci

[Electrode-Electrolyte-Interphase Composition Effects Introduced by Glyoxylic-Acetal-based Electrolytes in Lithium-Ion Batteries](#)

14:45 to 14:50

Nathan Reydet (*LEPMI, LEPMI/Grenoble-INP, Grenoble, France*), Renaud Bouchet, Marc Deschamps, Eric Maire, Sofia Perticarari

[Electrochemical study coupled with X-ray tomography on Lithium Metal anode impurities](#)

Wednesday 12 June 2024 - Morning

Keynote

Room : R1 - Isola Bella Theatre

08:30 to 09:20 Chaired by *Claudio Gerbadi*

M. Rosa Palacin (*Solid State Chemistry, ICMA-B-CSIC, Barcelona, Spain*)

[Post-Li battery chemistries: Back to the Future?](#)

S1 - Lithium based technologies

Room : R1 - Isola Bella Theatre

Chaired by *Renaud Bouchet & Dominic Bresser*

09:30 to 10:00 Invited

Dominic Bresser (*Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany*)

[Step-by-Step Development of Single-Ion Conducting Polymer Electrolytes for Lithium-Metal Batteries](#)

10:00 to 10:15

Sergio Granados-Focil (*Chemistry and Biochemistry, Clark University, Worcester, USA*), Valeria Gutierrez-Venegas, Luis Smith, Yuxin Yang

[Rational design of sulfonated oligomer/polymer structures to understand the structural underpinnings of Li⁺ transport through non-volatile electrolytes.](#)

10:15 to 10:30

Jiajia Wan (*Me: Department of Chemistry Materials and Chemical Engineering, Milano, Italy*)

[Artificial SEI Combined with Polymer Electrolytes to Prevent Dendrite Growth in Lithium Metal Batteries](#)

10:30 to 10:45

Pietro Zaccagnini (*Applied Science and Technologies, Turin, Italy*),
Serena Amenta, Luisa Baudino, Marco Carofiglio, Valentina Cauda,
Marzia Conte, Andrea Lamberti, Marco Reina, Mara Serrapede

[Fe-Doped ZnO Nanoparticle Recycling: Second Life Valorization in Energy Storage](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 *Invited*

Renaud Bouchet (*LEPMI (UMR5279), Université Grenoble Alpes, Phelma Grenoble INP, Grenoble, France*)

[Governing parameters of the ionic transport through ceramic/organic electrolyte interface.](#)

11:45 to 12:00

Ismael Saadoune (*Applied Chemistry & Engineering Research, Mohammed VI Polytechnic University, Benguerir, Maroc*), Ismail Assengar, Stefan Mangold, Björn Schwarz, Indris Sylvio, Vanessa Trouillet

[High-Voltage and Superior Performance Fluorophosphate-Based Cathode Material for Li-ion Batteries](#)

12:00 to 12:15

Hasna Aziam (*HTMR Lab, UM6P, BEN GUERIR, Maroc*)

[\$\text{Li}_{3.27}\text{Fe}^{\text{II}}_{0.19}\text{Fe}^{\text{III}}_{0.81}\text{V}\(\text{PO}_4\)_3\$ NaSICON-type cathode material for Lithium-ion Batteries](#)

12:15 to 12:30

Fu-Ming Wang (*Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Tapei, Taiwan*)

[Low-Temperature Recovery of Deteriorated Ni-Rich Cathode Material Surfaces: \$\text{LiNiO}_2\$ and \$\text{LiNi}_{0.8}\text{Mn}_{0.1}\text{Co}_{0.1}\text{O}_2\$ Examples](#)

12:30 to 12:45

Marc Fleury (*Earth Sciences and Environmental Technologies, IFP Energies nouvelles, Rueil-Malmaison, France*), Ludivine Afonso De Araujo, Thibaud Chevalier, Quentin Denoyelle, Rachel Jorand, Benjamin Nicot, Bernard Simon

[Tortuosity and pore size distribution on LFP electrodes using low field NMR techniques.](#)

12:45 to 13:00

Keyvan Malaie (*Institute of Biochemistry, Universität Greifswald, Greifswald, Germany*), Uwe Schröder

[Understanding Electrochemical Phase Transition Reactions in Batteries through Examples from Cathode Materials in Aqueous Solution](#)

13:00 to 13:15

Ziyouddin Khan (*Department of Science and Technology, Linköping University, Norrköping, Sweden*), Reverant Crispin, Divyaratan Kumar

[Water in Polymer Salt Electrolyte for Lignin based Batteries](#)

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Francesco Nobili & Matteo Zago

09:30 to 10:00 *Invited*

Rebeca Marcilla (*Electrochemical Processes Unit, imdea energy, Mostoles, Spain*)

[Membrane-free Flow Batteries based on Immiscible Electrolytes](#)

10:00 to 10:15

Mirko D'Adamo (*Smart Energy Unit, NVISION Systems and Technologies, S.L., Barcelona, Spain*), Wouter Badenhorst, Hector Marañón, Lasse Murtomäki, Jose Saez, Lluís Trilla

[Leveraging Machine Learning for Enhanced Health Predictions in Copper Redox Flow Batteries](#)

10:15 to 10:30

Matteo Zago (*Department of Energy, Politecnico di Milano, Milan, Italy*),
Andrea Casalegno, Marco Cecchetti, Luca Perlini, Francesco Toja

[Reduced Capacity Decay Through Imbalanced Electrolyte
Composition and State of Charge in Vanadium Redox Flow Batteries](#)

10:30 to 10:45

Francesco Toja (*Energy, Politecnico di Milano, Milano, Italy*), Andrea
Casalegno, Luca Perlini, Matteo Zago

[Improved Mass Transfer and Electrolyte Utilization in Large Scale
Flow Batteries](#)

10:45 to 11:15

Coffee Break

11:15 to 11:30

Carla Santana Santos (*Analytical Chemistry- Center for Electrochemical
Sciences, Ruhr-University Bochum, Bochum, Germany*), Igor Echevarria
Poza, Maria Ibáñez, Nomnotho Jiyane, Mario Palacios Corella, Thomas
Quast, Carla Santana Santos, Wolfgang Schuhmann, Edgar Ventosa

[Evaluating the Intrinsic Electrochemical Performance of Solid
Materials for Mediated-Redox Flow Battery](#)

11:30 to 11:45

Rossella Petruzzelli (*Chemistry 'Giacomo Ciamician', University of
Bologna, Bologna, Italy*), Catia Arbizzani, Giampaolo Lacarbonara

[Evaluation of kinetic parameters of redox flow battery reactions by
rotating disk electrode as a function of the state of charge](#)

11:45 to 12:00

Eduardo Martínez González (*Department of Mechanical and Materials
Engineering, University of Turku, Turku, Finland*), Pekka Peljo, Rosa
Tirronen

[Improving the volumetric capacity of air-stable aqueous organic flow
battery electrolytes by using additives and solid boosters](#)

12:00 to 12:15

Jonas Hereijgers (*Applied Electrochemistry & Catalysis, University of Antwerp, Wilrijk, Belgium*), Luis Fernando Arenas, Renée De Wolf, Kavin Teenakul

[Improved Redox Flow Battery Performance through Flow Engineering](#)

12:15 to 12:30

Rosa Maria Gonzalez-Gil (*NEO-Energy, Institut Català de Nanociència i Nanotecnologia, Barcelona, Spain*), Leandro Nicolas Bengoa, Verónica Fabián Puerta, Pedro Gómez -Romero, Daniel Rueda Garcia

[Improving Zn-ion supercapacitors performance using hybrid organic/water-in-salt electrolytes](#)

12:30 to 12:45

Patricia Bassil (*Hérault, Institut Charles Gerhardt Montpellier, Montpellier, France*), Frédéric Favier, Steven Le Vot

[Hybrid Composites from Controlled Re-Stacking of 2D-Electroactive Materials for Supercapacitors](#)

12:45 to 13:00

Maria Arnaiz (*Electrochemical Energy Storage, CIC energiGUNE, Vitoria-Gasteiz, Spain*), Jon Ajuria, Paulo Luis, Maria C. Morant-Miñana, Aitor Villaverde

[Towards sustainable and high-performance electrode fabrication for EDLC and sodium ion capacitors](#)

13:00 to 13:15

Emerson Sarmiento Goncalves (*Materials Division, Institute of Aeronautics and Space, São José dos Campos, Brazil*), Meriene Gandara, Bianca Fortes Palley, Biljana Sljukic

[Nb-Mxene: Electrochemical Performance Of Microsupercapacitor Electrodes](#)

S1 - Lithium based technologies

Room : R4 - Mottarone
Chaired by Jusef Hassoun & Stefan Freunberger
09:30 to 10:00 Invited

Stefan Freunberger (*Institute of Science and Technology Austria, Klosterneuburg, Austria*)

[New tools for understanding sulfur electrochemistry](#)

10:00 to 10:15

Ezequiel Leiva (*Departamento de Química Teórica y Computacional, UNC, INFIQC-CONICET, Córdoba, Argentina*), Daniel Barraco, Victoria Bracamonte, Andrea Calderón, Fernando Cometto, Melina Cozzarin, L García Tsuruoka, Guillermina Luque, Luciana Morel, Sofia Raviolo, Fabio Saccone, Guillermina Tommasone, Martin Zoloff Michoff

[Molecular dynamic simulations of polysulfides in Li-S batteries](#)

10:15 to 10:30

Markéta Zukalová (*Electrochemical Materials, J. Heyrovsky Institute of Physical Chemistry, CAS, Prague, Czech Republic*), Martin Fabián, Ladislav Kavan, Barbora Pitna Lásková, Olena Porodko, Monika Vinarcíková

[Inorganic Additives Improving the Performance of Li-S Batteries](#)

10:30 to 10:45

Saeed Yari (*IMO-IMOMEC, Hasselt University, Hasselt, Belgium*)

[Synergistic Approach to Lithium-Sulfur Battery Optimization: Porous Electrode Formulation for Effective Polysulfide Regulation](#)

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

Jusef Hassoun (*Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Ferrara, Italy*)

[Graphene Substates in Lithium-Sulfur and Lithium-Oxygen batteries](#)

11:45 to 12:00

Toshihiro Kondo (*Chemistry, Ochanomizu University, Bunkyo-ku, Japan*),
Makoto Aoki, Dilinigeer Dilixiati, Kazuno Maeda

[Detailed Cathode Reaction Analyses in Li-O₂ Battery Based on Operando XRD Measurements](#)

12:00 to 12:15

Julia Amici (*Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy*), Silvia Bodoardo, Matteo Gandolfo, Mattia Longo, Marco Sangermano

[Bio-renewable organogels, towards more sustainable Li-O₂ batteries](#)

12:15 to 12:30

Soumyadip Mondal (*Institute of Science and Technology Austria (ISTA), Klosterneuburg, Austria*), Stefan A Freunberger

[Surface electrochemistry with redox active insulator in non-aqueous oxygen redox and its impact on singlet oxygen](#)

12:30 to 12:45

Mewin Vincent (*Faculty of Chemistry, Center for Biological and Chemical Sciences, Warsaw, Poland*), Damian Kowalski, Sandra Sajeev

[Perovskite type Co_{0.7}Fe_{0.3}Mn_{1-x}Ni_xO_{3-y} electrocatalyst for the nonaqueous Lithium-O₂ batteries](#)

12:45 to 13:00

Rakesh Kumar Pandey (*Chemistry, Mahatma Gandhi Central University, Motihari, Motihari, India*), Anshu Andola, Yashvant Kashyap, Ravi Ranjan Pandey, Himani Pandey

[Unlocking the Potential of Depleted Dry Batteries: A Dual-Purpose Approach for Waste Mitigation and Sustainable Energy Production](#)

Poster Presentations

Symposium 1..... page 60
Symposium 2..... page 70
Symposium 3..... page 79
Symposium 4..... page 87

S1 - Lithium-based technologies

S1-001

Julia Amici (*Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy*), Silvia Bodoardo, Davide Dessantis, Piera Di Prima, Domenico Ferrero, Massimo Santarelli, Daniele Versaci

[Modelling of lithium-ion battery with sulfide-based solid-state electrolyte](#)

S1-002

Hagyeong Baek (*Karlsruhe Institute of Technology, Karlsruhe, Germany*), Jakob Asenbauer, Dominic Bresser, Thomas Diemant, Tobias Eisenmann, Xilai Xue

[Interphase formation on \(Carbon-coated\) Fe-doped CeO₂ Li-Ion Anodes](#)

S1-003

Edoardo Barcaro (*Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy*), Jusef Hassoun, Vittorio Marangon, Marco Mutarelli

[A lithium-ion battery with cycling stability promoted by the progressive activation of a silicon oxide anode in a graphene-amorphous carbon matrix](#)

S1-004

Lioba Boveleth (*Institute of Engineering Thermodynamics - CEC BMA, German Aerospace Center (DLR @ HIU), Stuttgart, Germany*), Timo Danner, Arnulf Latz, Adrian Lindner

[Material Parameters Affecting Li Plating in Si/Graphite Composite Electrodes](#)

S1-005

Daniele Callegari (*Physical Chemistry, University of Pavia, Pavia, Italy*), Umberto Anselmi Tamburini, Mauro Coduri, Eliana Quartarone

[Spray Drying Synthesis of Single Crystal LiNi_{0.5}Mn_{1.5}O₄ with Enhanced Electrochemical Performance](#)

S1-006

Mattia Canini (*Department of Chemistry, Università degli Studi di Pavia, Pavia, Italy*), Umberto Anselmi-Tamburini, Daniele Callegari, Mauro Coduri, Martina Fracchia, Eliana Quartarone

[On the stabilizing effect of Trace Zr doping in LiMn_{1.5}Fe_{0.5}O₄ spinel cathodes for Lithium Ion-Batteries](#)

S1-007

Joaquin Chacon (*R and D, Zelestium Technologies, Olvega, Spain*), Paloma Almodóvar, Enrique Fatás, Pilar Herrasti

[Advancing Rapid Charging in Lithium-Ion Batteries: Strategies to Mitigate Degradation for Enhanced Performance and Reliability](#)

S1-008

Tom Chamberlain (*Warwick Manufacturing Group, University of Warwick, Coventry, United Kingdom*), Ivana Hasa, Tomáš Syrový

[The Salamander Project: Smart Sensors and Self-Healing Functionalities for Increased Li-ion Battery Longevity](#)

S1-009

Qi Chen (*Structures, Foundations and Materials, iMDEA, Universidad Politecnica de Madrid, GETAFE, Spain*), Arnab Ghosh, Deyi Wang, Guangzhong Yin

[Flame-retardant biobased solid electrolyte for lithium-ion battery](#)

S1-010

Hamideh Darjazi (*Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy*), Begoña Acebedo, Elena Gonzalo, Iñaki Madinabeitia, Miguel Ángel Muñoz-Márquez, Francesco Nobili, Maider Zarrabeitia

[The Influence of Nitridation on High-Voltage Cathode Materials: \$\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4\$ Sputtered Thin Films for High-Power Li-ion Batteries.](#)

S1-011

Martino Fortunati (*Energy, Politecnico di Milano, Milano, Italy*), Andrea Casalegno, Davide Ottolina, Claudio Rabissi

[Non-Invasive Characterization of Real-Life Heterogeneous Aging within Lithium-Ion Battery Modules through Thermal Measurements and a Lumped 0-D Model](#)

S1-012

Antonela Gallastegui (*Innovative Polymers Group, POLYMAT, San Sebastian-Donostia, Spain*), Miryam Criado-Gonzalez, Rafael Del Olmo, Maria Forsyth, Jose Ramon Leiza, David Mecerreyes

[Printable Single-ion Polymer Nanoparticle Electrolytes for Lithium Batteries](#)

S1-013

Siri Gani (*Materials Science, TU Darmstadt, Darmstadt, Germany*),
Magdalena Graczyk-Zajac, Ralf Riedel, Axel Schönecker, Marco Spreafico
[Stabilization of highly porous silicon for application as anode in a high capacity lithium-ion batteries.](#)

S1-014

Nuria Garcia-Araez (*Chemistry, University of Southampton, Southampton, United Kingdom*), Philip Bartlett, Nikolay Zhelev
[Correlative SEM, EDX and Raman for battery characterization](#)

S1-015

Matteo Gastaldi (*DISAT, Politecnico di Torino, Torino, Italy*), Giuseppe Antonio Elia, Marisa Falco, Francesco Gambino, Claudio Gerbaldi, Giuseppina Meligrana
[Solvent-free extrusion process of PEO-polycarbonate blends as electrolytes for Li-ion batteries](#)

S1-016

Antonio Gentile (*Materials and Generation Technologies, Ricerca sul Sistema Energetico - RSE S.p.A., Milano, Italy*), Stefano Marchionna, Nicholas Vallana
[Enhancing Battery Performance through Evaluation of Electrode Materials in Full Pouch Cells](#)

S1-017

Arnab Ghosh (*High-Performance Polymer Nanocomposites Group, IMDEA Materials Institute, Getafe, Spain*), De-Yi Wang, Abdulmalik Yusuf
[Structure, chemistry, and formation mechanism of an in-situ phosphazene flame retardant-derived interphase layer in LiFePO₄ cathode](#)

S1-018

Alessandro Gregucci (*Chemistry, University of Bologna, Bologna, Italy*), Vanessa Pennazzi, Michele Rizzotti, Congcong Shang, Francesca Soavi, Antunes Staffolani
[Influence of Surface Area Calculation Methods on the Interpretation of Lithium-ion Diffusion Coefficient in Graphite Electrodes](#)

S1-019

Hamid Hamed (*Industrial engineering, U Hasselt, Hasselt, Belgium*)[Unveiling Aging Dynamics in Large Lithium-Ion Pouch Cells through Comprehensive Material and Electrochemical Characterizations](#)

S1-020

Florian Hausen (*IEK-9, Forschungszentrum Jülich, Jülich, Germany*), Karin Kleiner, Niklas Scheer, Bixian Ying[Electronic Structure, Li-ion Mobility and Mechanical Properties in Individual NCM Particles – a Correlative Study](#)

S1-021

Guillaume Henderson (*CMET, Ghent University, Ghent, Belgium*)[Membrane characterization for the electrochemical production of LiOH from \$\text{Li}_2\text{SO}_4\$ and byproduct valorization of \$\text{H}_2\text{SO}_4\$](#)

S1-022

BeomSu Jo (*Engineering Chemistry, Chungbuk National University, Cheongju-si, Chungchungbuk-do, Korea*), Jung Sang Cho[Synthesis of Conductive Carbon/Si Composite Microspheres for Anodes of Li-ion Batteries and Optimization of Pitch-Derived Carbon Coating Process](#)

S1-023

Doohun Kim (*Next Generation Battery Research Center, Korea**Electrotechnology Research Institute, Changwon-Si, Korea*), Hae-Young Choi, Suriyakumar Dasarathan, Se Won Han, You-Jin Lee, Geon-Woong Lee, Jun-Woo Park, Junghwan Sung[Modified interlayer as a polysulfide inhibitor for Li-S batteries](#)

S1-024

Do Kyung Kim (*Materials Science & Engineering, KAIST, Daejeon, Korea*), Yoon Jae Cho, Dong Gyu Kim, Dong Jun Kim, Do Kyung Kim, Jay Kruzic[Electrochemical and Mechanical Performance of Reaction-Sintered \$\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7}\(\text{PO}_4\)_3\$ Solid Electrolytes](#)

S1-025

Do Kyung Kim (*Dept. of Materials Science & Engineering, KAIST, Daejeon, Korea*), Yoon Jae Cho, Dong Gyu Kim, Dong Jun Kim, Do Kyung Kim, Rubha Ponraj

[Enhanced Interfacial Stability of Sulfide Solid Electrolyte/Li Metal Anode by N-GQD Coating](#)

S1-026

Urban Košir (*Department of Materials Chemistry (D10), National Institute of Chemistry, Ljubljana, Slovenia*), Robert Dominko, Sara Drvarić Talian, Matteo Gastaldi, Claudio Gerbaldi, Gregor Kapun

[Improving Transport and Interfacial Properties of Polymer Coatings for Anodes in Solid-State Lithium Metal Batteries with PEO-based Electrolytes](#)

S1-027

Ezequiel Leiva (*Departamento de Química Teórica y Computacional, UNC, INFIQC-CONICET, Córdoba, Argentina*), Daniel Barraco, Victoria Bracamonte, Andrea Calderón, Giorgio De Luca, Robert Dominko, Guillermina Luque, Javier Luque Di Salvo, Santiago Maldonado-Ochoa, Fabián Vaca Chávez, Alen Vizintin

[Application of biocarbons as electrodes in lithium Batteries](#)

S1-028

Chenkun Li (*Wilhelm-Johnen Str.1, Forschungszentrum Jülich GmbH, Jülich, Germany*), Jun Huang

[Modelling the Electric Double Layer of Nanoscale Lithium Dendrite using Hybrid Density-Potential Functional Theory](#)

S1-029

Maryam Maryam (*Materials Science, University of Milano Bicocca, Milan, Italy*), Maryam Maryam

[Synthesis and surface coating of single crystal NMC-811 for improving the performance of lithium-ion batteries.](#)

S1-030

Kirstie McCombie (*WMG, University of Warwick, Coventry, United Kingdom*), Ivana Hasa, Reuben Walcott

[Direct Recycling of Li-ion Battery Cathode Active Materials from Production Scraps](#)

S1-031

Hanxin Mei (*Department of Chemistry and Industrial Chemistry, university of genoa, genoa, Italy*), Alessandro Cingolani, Paolo Piccardo, Roberto Spotorno
[Application of \$\text{Li}_3\text{InCl}_6\$ -PEO Composite Electrolyte in All-Solid-State Battery](#)

S1-032

Almagul Mentbayeva (*Center for energy and advanced materials science, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan*)
[Free-standing of NMC Cathode Materials for the Lithium-Ion Battery](#)

S1-033

Shoayb Mojtahedi (*Department of Chemistry "Giacomo Ciamician", University of Bologna, Bologna, Italy*), Elisa Maruccia, Fulvio Pastore, Mauro Serafin, Francesca Soavi, Antunes Staffolani
[Sustainable Approach for Lithium-Ion Battery Cathode Manufacturing: Alternative Binder Compositions and Semi-Solventless Coating Process](#)

S1-034

Pranaya Keshari Nahak (*Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Venkatasailanathan Ramadesigan
[Mechano-Electrochemical Coupled Model-Based Study of Anode-free Solid-State Battery](#)

S1-059

Tú Nguyen (*Sustainable Materials and Chemistry, Flemish Institute of Technological Research (VITO), Mol, Belgium*), Yoran De Vos, Hamid Hamed, An Hardy, Jasper Lefevere, Mohammadhosein Safari
[Carbon Additives for 3D-printed LFP Electrodes in High Energy Density Li-ion Batteries](#)

S1-035

Irene Ostroman (*Materials Science, Università degli studi di Milano-Bicocca, Milano, Italy*), Lorenzo Mezzomo, Riccardo Ruffo
[Optimizing Anodeless Lithium Metal Batteries: strategies for enhanced performance and stability](#)

S1-036

Matteo Palluzzi (*Department of Chemistry, Sapienza University of Rome, Rome, Italy*), Paola D'Angelo, Aleksandar Matic, Maria Assunta Navarra, Akiko Tsurumaki

[Ionic liquids, synthesized by greener methods, as cathode additives](#)

S1-037

Jun-Woo Park (*Next Generation Battery Research Center, Korea Electrotechnology Research Institute, Changwon-si, Korea*), Se Won Han, Geon-Woong Lee

[Size-Controlled Wet-Chemical Direct Synthesis of Argyrodite Sulfide Electrolyte for All-Solid-State Batteries](#)

S1-038

Tamara Patranika (*Chemistry Ångström, Uppsala University, Uppsala, Sweden*), Kristina Edström, Guiomar Hernández, Andrew J. Naylor

[Investigation of the Solid Electrolyte Interphase on Silicon Wafers using a Fluorine-free Electrolyte](#)

S1-039

Ivan Claudio Pellini (*Department of Material Science, University of Milano-Bicocca, Milano, Italy*), Shahid Khalid, Elena Polato, Riccardo Ruffo

[Saturated Water/DMSO hybrid electrolytes for lithium-ion batteries](#)

S1-040

Matteo Prati (*Department of Materials Engineering, Politecnico di Milano, Milano 20133, Italy*), Roberto Biancardi, Ségolène Brusseau, Alice Cattaneo, Michele Fiore, Marie Raffin, Andrea Vittorio Oriani

[Impact of the inorganics and their interaction with fluorinated binders on the cathode properties for Gen.3 Lithium Ion Batteries](#)

S1-041

Elisa Ravesio (*DISAT - Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy*), Silvia Bodoardo, Giorgio Montinaro, Valentina Sumini, Daniele Versaci

[Towards scaling up in the production of Silicon-rich anodes with water-based binders](#)

S1-042

Sofia Raviolo (*Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy*), Federico Bella, Silvia Bodoardo, Carlotta Francia, Sabrina Trano

[NEXTCELL Project: Development of new-generation Lithium-Ion Batteries](#)

S1-043

Manuel Reiter (*Department of Mechanical and Process Engineering, ETH Zürich, Zürich, Switzerland*), Dario Gomez Vazquez, Chulgi Nathan Hong, Maria R. Lukatskaya

[Controlled Halogenation of the Solid Electrolyte Interphase in Li-metal Batteries](#)

S1-044

Clara Roggerone (*Faculty 1, Technical Chemistry, University of Applied Sciences (HTW) Berlin, Berlin, Germany*), Julia Kowal, Fabio La Mantia, Asnakech Lass-Seyoum

[Design of High Mass Loading \$\text{LiMn}_2\text{O}_4\$ Electrodes for Lithium Extraction from Brines](#)

S1-045

AmirReza Rouhani Esfahani (*Materials Engineering, McGill University, Montreal, Canada*), Eric McCalla, Philippe Ouzilleau, Nooshin Zeinali Galabi

[Investigation of the Green Aqueous Binders on \$\text{LiCoPO}_4\$ Cathodes in Lithium-Ion Batteries](#)

S1-046

Ritwik Roy (*Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Venkatasailanathan Ramadesigan

[Mathematical modelling of ion-ion interaction and solvation effects in lithium-sulfur batteries](#)

S1-047

Sofia Saffirio (*Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy*), Sonia Lucia Fiorilli, Claudio Gerbaldi, Antonio Gianfranco Sabato, Federico Smeacetto, Albert Tarancón

[NASICON-type glass-ceramic electrolytes: the effect of boron oxide and ultra-fast high-temperature sintering \(UHS\) on their functional properties](#)

S1-048

Sandra Sajeev (*Chemistry, CNBCH, Warsaw, Poland*)[Electrochemical Performance of \$\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{1-x}\text{Ni}_x\text{O}_{3.5}\$ Electrocatalyst in Nonaqueous \$\text{Li-O}_2\$ Battery](#)

S1-049

Saveria Santangelo (*Department of Civil, Energy, Environmental and Materials Eng, Mediterranean University, DICEAM, Reggio Calabria, Italy*), Miguel Ángel Muñoz-Márquez, Francesco Nobili, Asia Patriarchi, Saveria Santangelo, Claudia Triolo[Evaluation of Spinel-Structured High-Entropy \(Cr, Mn, Fe, Co, Ni\)-Oxides as Inorganic Fillers for Solid Polymer Electrolytes](#)

S1-050

Antunes Staffolani (*Department of Chemistry “Giacomo Ciamician”, Alma Mater Studiorum - University of Bologna, Bologna, Italy*), Aishabibi Ashir, Marco Giorgetti, Monica Giovannucci, Ncholu Manyala, Federico Mascetti, Elisabetta Petri, Alessandro Girolamo Rombolà, Chiara Samori, Francesca Soavi, Andrea Trebbi[Designing Sustainable Processes for Lithium-ion Battery Recycling](#)

S1-051

Junghwan Sung (*Next Generation Battery Research Center, Korea Electrotechnology Research Institute, Changwon-si, Korea*), Jun-Woo Park[Infiltration-driven performance enhancement of poly-crystalline cathodes in all-solid-state batteries](#)

S1-052

Manaswee Suttipong (*Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Pathumwan, Thailand*), Jitti Kasemchainan, Siriporn Teeraburanapong[Advancing Lithium-Ion Battery Safety and Performance through Co-Solvent Optimization: A Molecular Dynamics Study](#)

S1-053

Nicholas Vallana (*Department of Material Science, University of Milano-Bicocca, Milano, Italy*), Chiara Ferrara, Antonio Gentile, Stefano Marchionna, Irene Ostroman, Riccardo Ruffo[Nanocomposite \$\text{Sn/Ti}\$ Oxide from \$\text{Ti}_3\text{Al}_{\(1-x\)}\text{Sn}_x\text{C}_2\$ MAX Phases as Promising Negative Electrode for Lithium-Ion Batteries](#)

S1-054

Irene Vassalini (*Department of Information Engineering, University of Brescia, Brescia, Italy*), Ivano Alessandri, Alessandro Bonometti, Elza Bontempi, Antonella Cornelio, Elisa Galli, Matteo Scaglia, Alessandra Zanoletti

[Recycling Critical Raw Materials from Lithium-Ion Battery Black Mass: The Critical Role of Carbothermic Reactions](#)

S1-055

Yasuaki Yamamoto (*EP Application Department, JEOL Ltd., Akishima, Japan*), Kazuhiro Hikima, Tatsuhito Kimura, Reiko Matsuda, Atsunori Matsuda, Yoshikazu Sasaki, Kota Yanagihara

[In-situ charge-discharge observation and analysis for Si anode of all solid-state batteries by using the SEM-EDS-SXES method](#)

S1-056

Zengming Zhang (*IEK-13, FZJ-Jülich, Jülich, Deutschland, Germany*)

[Physical Modelling of Impedance Response of Solid Electrolyte Interphase in Lithium-Ion Batteries](#)

S1-057

Mingjie Zhang (*Material science and engineering, Politecnico di Torino, Torino, Italy*)

[Effective Optimization of Poly\(ethylene oxide\)-based Polymer-in-High Concentrated Ionic Liquid Electrolyte for all-solid-state Lithium Metal Batteries](#)

S1-058

Dongni Zhao (*Chemistry Department, Lancaster University, Lancaster, United Kingdom*), Stijn F. L. Mertens

[Understanding Mn dissolution from \$\text{LiMn}_2\text{O}_4\$ cathodes](#)

S2 - Beyond lithium: New chemistries and approaches

S2-001

Younes Abghoui (*Engineering and natural sciences, University of Iceland, Reykjavik, Iceland*), Naveed Ashraf

[Unlocking the Potential for Next-Generation Batteries](#)

S2-002

Marco Ambrosetti (*Tecnologie di Generazione e Materiali, RSE S.p.A. - Ricerca sul Sistema Energetico, Milan, Italy*), Marcella Bini, Chiara Milanese, Irene Quinzeni

[Effect of Mn Substitution on \$\text{GeFe}_2\text{O}_4\$ as an Anode for Sodium-Ion Batteries](#)

S2-003

Daniel Antoran (*Thermochemical Processes Group (GPT), Univerty of Zaragoza, Zaragoza, Spain*), Dario Alvira, Joan J. Manyà

[Enhancing the performance of Waste Hemp Hurd-Based Carbons in SIBs through \$\text{H}_2\text{SO}_4\$ -assisted hydrothermal Pretreatment](#)

S2-004

Luis Fernando Arenas (*Research Group Applied Electrochemistry & Catalysis (ELCAT), University of Antwerp, Antwerp, Belgium*), Tom Breugelmans, Michiel De Rop, Jonas Hereijgers

[Mass Transport and Pressure Drop at Pillar Electrodes in Electrochemical Flow Reactors: Experiments and Simulations](#)

S2-005

Claudia Carbone (*Chemistry, Università degli Studi di Milano, Milan, Italy*), Manuel Minardi, Alessandro Minguzzi, Aaron Stoeckle, Fulvio Uggeri, Alberto Vertova

[Electrochemical Synthesis of “MIB”-Inspired Gadolinium-Based Contrast Agents](#)

S2-006

Marco Cecchetti (*Energy, Politecnico di Milano, Milano, Italy*), Andrea Casalegno, Martino Fortunati, Matteo Zago

[Development of an Innovative Selective Layer for Vanadium Redox Flow Battery via Ultrasonic Spray Coating: Investigation of Deposition Process Parameters and Scale-Up](#)

S2-007

Jacob Compton (*WMG, University of Warwick, Coventry, United Kingdom*), Ivana Hasa, Faduma Maddar

[Prussian White/Hard Carbon Sodium-ion Cells: From Lab to Upscaled Cell Prototypes](#)

S2-009

Petra Demjan (*Chemistry, University of Southampton, Southampton, United Kingdom*), Petra Demjan, Nuria Garcia-Araez, Andrew Hector

[Tin nitride and hard carbon blends as a novel material for sodium ion battery anodes.](#)

S2-010

Domenico Florenzano (*Scienza dei Materiali, Università di Milano Bicocca, Milano, Italy*)

[Coffee waste-derived hard carbon as a promising negative electrode for sodium-ion batteries](#)

S2-011

Andrea Gentile (*Department of Chemistry, Sapienza University of Rome and ENEA (Italian company), Rome, Italy*), Sergio Brutti, Nicholas Carboni, Margherita Moreno, Maria Lucia Pace, Antonio Santagata

[Anode-less Electrodes for Lithium Metal Batteries](#)

S2-012

Asia Grattagliano (*Department of Chemical Science and Technologies, University of Rome Tor Vergata, Rome, Italy*), Alessandra D'Epifanio, Pierluca Galloni, Barbara Mecheri, Silvia Pezzola, Federica Sabuzi

[M-tetra-\(4-sulfonatophenyl\) porphyrin-based redox couples for Aqueous Organic Redox Flow Battery \(AORFB\) application.](#)

S2-052

Giorgia Greco (*Chemistry, University La Sapienza, Rome, Italy*), Philipp Adelhelm, Burkhard Beckhoff, Sergio Brutti, Katja Frenzel

[REALSEI: opeRando chEmical spAce- and time-resoLved quantification of Solid Electrolyte Interphase in hard carbon anode for sustainable sodium-ion batteries](#)

S2-013

Meenal Gupta (*Department of Engineering for Innovation, University of Salento, Lecce, Italy*), Namrata Agrawal, Patrizia Bocchetta, Pallavi Gupta, Yogesh Kumar, Pushpa Singh, Neha Taneja

[Highly conductive free-standing electrolyte films based on biowaste for supercapacitors](#)

S2-014

Se Won Han (*Electrical Materials Division, KERI, Changwon City, Korea*), Jina Han, Goen Woong Lee, Dae Ho Lee

[Kinetics analysis of thermostable polyimide coating via electrophoretic deposition](#)

S2-015

Hongqing Hao (*WMG, University of Warwick, Coventry, United Kingdom*), John Low

[Carbon coated current collector by Electrophoretic deposition: Lithium-ion battery applications](#)

S2-016

Carlos Hurtado (*Chemistry, Curtin University, Perth, Australia*), Simone Ciampi

[Electrostatically Induced Flexovoltage in Silicon–Platinum Junctions](#)

S2-017

Md Tauhidul Islam (*Institute for Chemistry and Technology of Materials, Graz University of Technology, Graz, Austria*), Qamar Abbas, Bernhard Gollas

[Ion Dynamics in the Bulk of Water-in-salt Electrolytes and Under Confinement in Multiporous Carbon](#)

S2-018

Luana Cristina Italiano Faria (*São Carlos Institute of Chemistry, University of Sao Paulo, Sao Carlos, Brazil*), Thiago Bertaglia, Frank Nelson Crespilho, Lucyano Jefferson Alves de Macêdo, Graziela Cristina Sedenho

[Toward Enhanced Performance: Flexible Carbon Fiber Electrode for Aqueous Organic Redox Flow Batteries](#)

S2-019

Hyun Young Jung (*Energy Engineering, Gyeongsang National University, Jinju-si, Korea*), Hyun Young Jung, Chenrayan Senthil

[Practical High-Performance Lithium-Sulfur Battery under Lean Electrolyte](#)

S2-020

Shahid Khalid (*Department of Materials Science, University of Milano-Bicocca, Milan, Italy*), Piercarlo Mustarelli, Ivan Pellini Claudio, Riccardo Ruffo, Alessandro Tos

[Electrolyte Optimization for Enhanced Aqueous Sodium-Ion Batteries through molecular-crowding](#)

S2-021

Jae Seob Lee (*Department of Materials Science and Engineering, Korea University, Seongbuk-Gu, Seoul, Korea*), Jung Sang Cho

[Synthesis of Porous Nanofibers Comprising Hollow N-Doped Carbon Nanocages within the N-Doped Graphitic Carbon Matrix and Evaluation as Anodes for K-Ion Batteries](#)

S2-022

Stanislav Levchenko (*Department of Chemical, Pharmaceutical and Agri. Sciences, University of Ferrara, Ferrara, Italy*), Sebastiano Bellani, Francesco Bonaccorso, Josef Hassoun, Vittorio Marangon, Lea Pasquale, Vittorio Pellegrini

[Influence of Ion Diffusion on the Lithium-Oxygen Electrochemical Process and Battery Application Using Carbon Nanotubes-Graphene Substrate](#)

S2-023

Federico Lissandrello (*Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy*), Eugenio Gibertini, Federico Lissandrello, Luca Magagnin, Eleonora Natale

[Demonstration of an Aqueous Zinc-Permanganate Redox Flow Battery with High Energy Density](#)

S2-053

Letlhogonolo Mabena (*Chemistry, Tshwane University of Technology, Pretoria, South Africa*), Mabuatsela Maphoru, Violet Moagi

[Electrochemical Performance of Nickel Sulphide Decorated on Lignin-Derived Activated Carbon for High-Performance Symmetric Supercapacitors](#)

S2-024

Mahin Maleki (*Institute for Frontier Materials, Deakin University, Melbourne, Australia*), Maria Forsyth, Patrick Howlett, Minkyung Kang
[Investigation of Electrolyte-Electrode Interface and Interphase in Advanced Na-ion Batteries](#)

S2-025

Benjamin Mercier-Guyon (*MIEL, LEPMI, Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Gière, France*), Joanna Conder, Marta Mirolo, Claire Villeveille
[Electrode engineering for ASSB: Challenges and prospects](#)

S2-026

Luca Mesina (*Chemistry, La Sapienza, Rome, Italy*)
[Synthesis and Structural Analysis of Hard Carbons for Sodium-Ion Batteries](#)

S2-027

Matteo Milanese (*DISAT, Polytechnic of Torino, Turin, Italy*), Hamideh Darjazi, Giuseppe A. Elia, Claudio Gerbaldi, Giuseppina Meligrana, Valeria Sperati
[Development of an eco-friendly by-layer gel-polymer electrolyte for rechargeable Zinc-Air batteries](#)

S2-028

Mostafa Mohamed (*Physics, King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia*), Md. Abdul Aziz, Arshad Hussain, Zain Yamani
[Electrodeposition of Nanostructured Zinc on Steel Mesh for High-Performance and Dendrite Free Zinc-Ion Hybrid Supercapacitor](#)

S2-029

Mahsa Mohammad (*Faculty of Industrial Engineering Sciences, Hasselt University, Diepenbeek, Belgium*), Hamid Hamed, An Hardy, Mohammadhosein Safari, Saeed Yari
[Transport properties of polysulfide species in sparingly solvating electrolytes for lithium-sulfur battery](#)

S2-030

Jorge Montero (*Department of Chemistry, Sapienza University of Rome, Rome, Italy*), Graziano Di Donato, Maria Assunta Navarra, Stefano Passerini, Akiko Tsurumaki

[Development of New Materials for High Performance Seawater Batteries](#)

S2-031

Charan Mukundan (*Energy storage and Conversion, Dechema Forschungsinstitut, Frankfurt am Main, Germany*), Jean-François Drillet

[Improving the performance of an Al-Graphite cell with cost-effective AlCl₃/TEA electrolytes](#)

S2-032

Martina Nádherná (*Department of Thin Films and Nanostructures, FZU – Institute of Physics of the Czech Academy of Science, Prague, Czech Republic*), Ghulam Abbas, Jiří Červenka, Tomáš Chvojka, Zahid Ali Zafar

[Design of “water-in-salt” electrolytes for dual-ion batteries – influence of additives and salt concentration](#)

S2-033

Inara Nesterova (*Laboratory of Energy Materials, Institute of Solid State Physics, University of Latvia, Riga, Latvia*), Donats Erts, Gints Kucinskis

[Electrochemical performance of Na₂FeP₂O₇ for aqueous sodium-ion batteries](#)

S2-034

Manjunath L Nilugal (*Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Venkatasailanathan Ramadesigan

[Modelling and analysis of degradation in sodium-ion batteries for microgrid applications](#)

S2-035

Nikoloz Nioradze (*Institute of Inorganic Chemistry and Electrochemistry, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia*), Nino Giorgadze, Lela Kvinikadze, Fred Lisdat, Levan Londaridze

[One-Step Electrogenerated Manganese Oxide/Carbon Powder as Potential Electrode Material for Pseudo-Supercapacitors](#)

S2-036

Elmira Nurgazyeva (*National Laboratory of Astana, Nazarbayev University, Astana, Kazakhstan*), Zhumabay Bakenov, Sandugash Kalybekkyzy, Almagul Mentbayeva

[Synthesis and Characterization of Acrylated-Polytetrahydrofuran-Based Solid Polymer Electrolyte](#)

S2-037

Afshin Pendashteh (*Multifunctional Nanocomposites Group, IMDEA Materials Institute, Getafe, Spain*), Carolina Ramos Capón, Juan J. Vilatela

[Vanadium oxide on CNT fabric built-in current collectors as high-performance cathodes for Zinc-ion batteries](#)

S2-038

Jaywant Phopase (*Department of Technology and Natural Sciences, Linköping University, Norrköping, Sweden*), Ujwala Ail, Jakob Backe, Magnus Berggren, Xavier Crispin

[Lignin functionalized with catechol for large-scale organic electrodes in bio-based batteries.](#)

S2-039

Alessandro Piovano (*Department of Applied Science and Technology, Polytechnic of Torino, Torino, Italy*), Hamideh Darjazi, Giuseppe A. Elia, Marisa Falco, Matteo Gastaldi, Claudio Gerbaldi, Giuseppina Meligrana, Silvia Porporato

[New binders and separators based on recycled PVB: from waste to Li- and Na-ion batteries](#)

S2-040

Anukriti Pokhriyal (*Novel Energy-Oriented Materials Group, Catalan Institute of Nanoscience and Nanotechnology (ICN2), Barcelona, Spain*), Leandro Bengoa Abraham, Pedro Gomez-Romero, Rosa Maria González Gil

[Vanadium Polyoxometalates for Hybrid Energy Storage](#)

S2-041

Silvia Porporato (*Department of Applied Science and Technology, Polytechnic of Turin, Torino, Italy*)

[Glyoxal-Methacrylate-based Gel Polymer Electrolytes for Energy Storage Systems](#)

S2-042

Anto Puthussery Varghese (*Institute for Frontier Materials, Deakin University, Melbourne, Australia*), Maria Forsyth, Nicolas Goujon, Patrick Howlett, Benjamin Mapleback, Andrew Rider, Irune Villaluenga

[The use of polymerised ionic liquid as solid-state electrolytes for thin high voltage composite structural supercapacitors.](#)

S2-043

Diego F Quintero Pulido (*Energy, Mobility and Climate Battery and Hydrogen, European Commission-Joint Research Centre Petten, Petten, Netherlands*), Matthias Bruchhausen, Catalin-Felix Covrig

[On the performance of portable NiMH batteries of general use](#)

S2-044

Julian Seiler (*Institute of Engineering Thermodynamics, German Aerospace Center, Stuttgart, Germany*), Andreas K. Friedrich, Dennis Kopljär, Alexander Kube

[Next steps in the development of bi-functional Gas-Diffusion-Electrodes for Zinc-Air-Batteries](#)

S2-045

Junjie Shi (*Department of Chemistry and Materials Science, Aalto University, Espoo, Finland*), Nana Han, Tanja Kallio, Milla Suominen

[Hydrophilic-Hydrophobic Domains in Bi₂O₃/Nitrogen-doped Carbon Electrode for improved CO₂-to-Formate Conversion](#)

S2-046

Raman Kumar Singh (*Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Prakash C. Ghosh, Venkatasailanathan Ramadesigan

[Modelling and Numerical Study of Mg-CO₂ Electrochemical System for CO₂ Utilization with Electricity and Hydrogen Production](#)

S2-047

Mehdi Soleimanzade (*Tecnologie di Generazione e Materiali (TGM), Ricerca sul Sistema Energetico - RSE S.p.A., Milan, Italy*), Marco Ambrosetti

[Sustainable Activated Carbon Tissue from Cloth Residuals as Conductive Support for NaTi₂\(PO₄\)₃ Anodes in Aqueous Sodium Batteries](#)

S2-049

Mingqing Sun (*Department of Chemistry, Lancaster University, Lancaster, United Kingdom*)

[Elimination of anionic redox activity in P2-type sodium manganese oxide via S-doping for sodium-ion batteries](#)

S2-050

Aashish Thakur (*Chemical Engineering, Indian Institute of Science, Bangalore, Bangalore, India*), Sanjeev Kumar, Mahendra Nandanwar

[Quantifying Internal Regeneration Mechanism In Soluble Lead Redox Flow Battery To Support High Cycle Life](#)

S2-051

Meiser Valencia (*Chemical Technology, DECHEMA-Forschungsinstitut, Frankfurt, Germany*), Jean-Francois Drillet, Zahra Karimi, Charan Mukundan, Hao Shi

[Investigation of Chemical and Electrochemical Stability of Al₁₀₅₀ Alloy Foil as Anode in the Aluminium-Graphite Battery](#)

S3 - Hydrogen production technologies

S3-001

Aleksandra Swierkula (*Faculty of Chemistry, Jagiellonian University, Kraków, Poland*), Mikolaj Kozak, Leszek Zaraska

[Application of AAO membranes for the fabrication of nanostructured semiconducting electrodes](#)

S3-002

Daniele Alves (*Chemistry, Maynooth University, Maynooth, Ireland*), Carmel Breslin, Eithne Dempsey

[Factorial Analysis of the Trimetallic CoNiFe-LDH/Graphene Composites for the Oxygen Evolution Reaction](#)

S3-003

Daniele Alves (*Chemistry, Maynooth University, Maynooth, Ireland*), Carmel Breslin, Eithne Dempsey

[Catalytic Efficiency of the CoCuFe-LDH/Graphene Composites for the Hydrogen Evolution Reaction](#)

S3-004

Eleonora Astolfi (*University of Bologna, Alma Mater Studiorum, Bologna, Italy*)

[Metal-Organic Frameworks \(MOFs\) as catalysts for CO₂ conversion](#)

S3-005

Rinat Attias (*The Grand Technion Energy Program (GTEP), Technion - Israel Institute of Technology, Haifa, Israel*), Yoed Tsur

[Analysis of Electro-catalysts Kinetics by Distribution Functions of Relaxation Times](#)

S3-006

Ana Daniela Azua Humara (*Institute of Energy and Climate Research, Forschungszentrum Jülich, Jülich, Germany*), Rüdiger-A. Eichel, Ana Laura Luna, Anna K. Mechler

[Understanding Nitrate Electrochemical Reduction to Ammonia by Identifying Changes in pH](#)

S3-007

Noah Bryan (*Warwick Manufacturing Group, University of Warwick, Coventry, United Kingdom*), Hugh Hamilton, Ivana Hasa, David Thompson, Richard Walton

[Synthesis and Characterisation of Ni-based Catalyst Materials for Anion Exchange Membrane \(AEM\) Electrolysers](#)

S3-008

Tommasso Caielli (*chemistry, UNIMIB, Milano, Italy*), Alessandro Raffaele Ferrari, Piercarlo Mustarelli, Aliasghar Parsaie, Diego Stucchi

[An Exhaustive Study of Poly\(terphenyl-piperidinium\) Degradation for Anion Exchange Membrane Water Electrolysis](#)

S3-009

Elisabetta Campedelli (*Chemical Science, University of Padua, Padova, Italy*), Christian Durante

[Enhancing MoS₂ Activity for H₂-Production through Basal Plane Dual-Metal Doping via a Green Fast Method](#)

S3-010

Dyovani Coelho (*Chemistry, Federal University of São Carlos, São Carlos, Brazil*), Lucia H. Mascaro

[Alkaline Water Electrolysis Using an Electrodeposited CoNiFeP Alloy](#)

S3-011

Nicola Comisso (*ICMATE, CNR, Padova, Italy*), Silvana De Iuliis, Luca Mattarozzi, Francesca Migliorini, Lourdes Vázquez-Gómez, Enrico Verlato

[Effects of Addition of CeO₂ on Electrocatalytic Oxidation of Glycerol in Acid Media](#)

S3-012

Kenneth Crossley (*Energy & Environment Division, Paul Scherrer Institute, Villigen, Switzerland*), Camelia N. Borca, Nicola P.M. Casati, Antonio Cervellino, Emiliana Fabbri, Nina S. Genz, Jinzhen Huang, Thomas J. Schmidt

[Synchrotron Characterization of Hydroxide Perovskite Oxygen Evolution Reaction Catalyst Activation](#)

S3-013

Edgar Cruz Ortiz (*Electrochemical Energy Systems, Hahn-Schickard, Freiburg, Germany*), Melanie Bühler, Niklas van Treel, Severin Vierrath, Marco Viviani

[Hydrogen Cross-Over Measurements of Proton Exchange Membranes for Water Electrolysis with in-operando Conditions](#)

S3-014

Giuditta De Amicis (*Chemistry, Università degli Studi di Pavia, Pavia, Italy*), Paolo Ghigna, Alessandro Minguzzi, Anna Testolin, Alberto Vertova

[In-situ Surface Activation of Polycrystalline LaNiO₃ Electrocatalyst for the Oxygen Evolution Reaction](#)

S3-045

Jean-Francois Drillet (*Energy storage & conversion, Dechema research institute, Frankfurt a.M., Germany*), Nicky Bogolowski, David Kniep, Mariappan Sakthivel, Beatriz Sanchez-Batalla

[Main Critical Material Issues for Large-Scale Development of AWE, PEMWE and HTWE Electrolyzers](#)

S3-015

Johan Ehlers (*Department of Energy Conversion and Storage, Technical University of Denmark, Kongens Lyngby, Denmark*), Christodoulos Chatzichristodoulou, Gastón Larrazábal

[The Long-Term Structural Evolution of Nickel-Iron Anodes in Alkaline Electrolytes](#)

S3-016

Alessandro Raffaele Ferrari (*Department of Materials Science, University of Milano-Bicocca, Milano, Italy*), Tommaso Caielli, Piercarlo Mustarelli, Diego Stucchi

[Poly\(biphenyl piperidinium\) AEMs: a multi-approach to improve mechanical properties](#)

S3-017

Linda Feuerstein (*Chair of Electrochemistry, Technische Universität Dresden, Germany*), Ekin-Esme Bas, Dorothea Golze, Martin Oschatz, Inez Weidinger

[Exploring Local Electric Field Effects by Electrochemical Stark Spectroscopy: an In-situ Study on HER-active C₂N-type Carbon Materials](#)

S3-018

Sebastian Francis (*Chemical Engineering, University of Iceland, Reykjavik, Iceland*), Egill Skúlason

[CO₂ reduction to fuel through surface engineering](#)

S3-019

Christoph Griesser (*Department of Physical Chemistry, University of Innsbruck, Innsbruck, Austria*), Sergio Diaz-Coello, Julia Kunze-Liebhäuser

[Surface chemistry of tungsten carbide uncovered in-situ with electrochemical XPS](#)

S3-020

Julie Guehl (*ICPEES UMR 7515, CNRS- University of Strasbourg, Strasbourg, France*), Tristan Asset, Antoine Bonnefont, Alexandr Oshchepkov, Elena Savinova, Eric Sibert

[Development of Ni@NiOx/C cathodes for the hydrogen evolution reaction by electrodeposition](#)

S3-021

Alexander Kohushölter (*Electrochemical Energy Systems, University of Freiburg, Freiburg, Germany*), Susanne Koch, Lukas Metzler, Severin Vierrath

[Understanding Hydrogen Gas Crossover in Anion-Exchange Membrane Water Electrolysis: Hysteresis Analysis](#)

S3-022

Mikolaj Kozak (*Department of Physical Chemistry and Electrochemistry, Jagiellonian University, Krakow, Poland*), Agnieszka Brzozka, Lifeng Liu, Grzegorz Sulka

[Transition metal selenides: electrodeposition of catalytic material for hydrogen evolution reaction](#)

S3-023

Denis Kuznetsov (*Mechanical and Process Engineering, ETH Zurich, Zurich, Switzerland*), Christoph Müller, Yi-Hsuan Wu

[Rationalizing the Effect of Redox-Inactive Metals on the Activity of Oxides in Oxygen Electrocatalysis](#)

S3-024

Thomas Mabit (*Institut de Physique de Rennes, Université de Rennes, Rennes, France*), Hamid Ben Ahmed, Laurent Courbin, Marie-Caroline Jullien, Florian Scholkopf

[Enhanced Electrolyzer Efficiency via Rapid Simulation Integrating Gas Bubble Dynamics](#)

S3-025

Peter Machata (*Department of Composite Materials, Polymer Institute SAS, Bratislava, Slovakia*), Sadik Cogal, Matej Micusik, Maria Omastova

[Increase of Surface Wettability of MoSe₂ by Hydrophilic Polymer for Enhancement of Electrocatalytic Efficiency of Water Splitting](#)

S3-026

Francesco Malaj (*Department of Materials Science, University of Milano-Bicocca, Milan, Italy*), Enrico Berretti, Lorenzo Brogi, Camilla Coletti, Stiven Forti, Domenico Lentini, Antonio Rossi, Carlo Santoro, Alessandro Tampucci

[One-Pot Synthesis of FeNi₃/FeNiOx Nanoparticles for PGM-Free Anion Exchange Membrane Water Electrolysis](#)

S3-027

Salvo Mirabella (*Physics and Astronomy, University of Catania, Catania, Italy*), Catya Alba, Angelo Forestan, Giacometta Mineo, Riccardo Reitano, Antonino Scandurra, Antonio Terrasi, Federico Ursino

[Low-cost Mo-based Nanocatalysts from Industrial Waste powder for Hydrogen Production](#)

S3-028

Seyed Ariana Mirshokraee (*Material science and Nanotechnology, University of Milano-Bicocca, Milano, Italy*), Vincenzo Baglio, Enrico Berretti, Francesco Di Franco, Alessandro Lavacchi, Carmelo Lo Vecchio, Mohsin Muhyuddin, Carlo Santoro, Rosanna Viscardi, Andrea Zaffora

[Mono-, bi- and tri-metallic Fe-based platinum group metal-free electrocatalysts derived from phthalocyanine for oxygen reduction reaction in alkaline media](#)

S3-029

Borislava Mladenova (*Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria*), Galin Borisov, Mariela Dimitrova, Evelina Slavcheva

[Highly efficient Co/MPT catalysts for AEM water electrolysis](#)

S3-030

Melina Müller (*Heterogeneous Reactions, Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*), Saskia Heumann, Holger Ruland, Sebastian Tigges, Kristina Tschulik

[From Beaker- to Single-Cell Alkaline Electrolyzer: Activity and Stability Comparison of Commonly Used Ni-Catalysts in OER](#)

S3-031

Giulio Pappaiani (*Department of Chemistry “Ugo Schiff”, University of Florence, Firenze, Italy*), Claudio Fontanesi, Walter Giurlani, Massimo Innocenti, Giulio Mazzoleni, Francesco Montanari

[Electrodeposition of Thin Films and Nanostructures of Metals on n-doped Monocrystalline Silicon for Energy Applications](#)

S3-032

Jungju Park (*Mechanical engineering, Sogang university, Seoul, Korea*), Gihun Son

[Numerical Modeling of Hydrogen Production in Alkaline Water Electrolysis](#)

S3-033

SUBIR PAUL (*Industrial Engineering, Hasselt University, Hasselt, Belgium*), An Hardy, Momo Safari, Koen Vandewal

[Graded Catalyst Layer Design for Improved Performance in Proton Exchange Membrane Water Electrolysis](#)

S3-034

Malgorzata Plachta (*Department of Physical Chemistry and Electrochemistry, Jagiellonian University, Krakow, Poland*), Karolina Syrek, Leszek Zaraska

[Electrodeposition of nanostructured tin dioxide layers on glass substrate for energy-related applications](#)

S3-035

Alessia Pollice (*Dept. of Chemistry “Giacomo Ciamician”, Alma Mater Studiorum - University of Bologna, Italy*), Francesco Paolucci, Giovanni Valenti
[Smart Design, Cleaner Future: Optimization of the MicroFlowCell in Cathodic Reactions](#)

S3-036

Rayantan Sadhukhan (*Chemistry, Tata Institute of Fundamental Research Hyderabad, Hyderabad, India*), Amar Kumar, Tharangattu N Narayanan
[Ultra-Low Loaded Platinum Bonded Hexagonal Boron Nitride as Stable Electrocatalyst for Hydrogen Generation](#)

S3-037

Janis Schmitt (*Electrochemical Reaction Engineering (AVT.ERT), RWTH Aachen University, Aachen, Germany*), Clara Gohlke, Christian Marcks, Anna Mechler
[Ni-Fe-based Anodes for Alkaline Water Electrolysis: Electrochemical Activation under Industrial Conditions](#)

S3-038

Dylan Schulz (*Chemistry and Chemical Engineering, Chalmers University of Technology, Gothenburg, Sweden*), Anna Martinelli, Anders Palmqvist, Bastien Penninckx, Sankar Sasidharan, Xin Wen, Fabian Wenger
[Novel Carbon-Nanorod Morphologies for PEM Electrolyser Cathodes Characterization by Raman Spectroscopy & SEM/TEM](#)

S3-039

Renata Sechi (*Energy Conversion and Storage, Technical University of Denmark (DTU), Kongens Lyngby, Denmark*), Arghya Bhowmik, Heine Anton Hansen, Georg Kastlunger
[First-Principles Molecular Dynamics of Charged Au\(111\) in an Alkaline Water Electrolyzer](#)

S3-040

Pamella Silva Rodrigues (*Helmholtz Institute Erlangen-Nürnberg for Renewable Energy, Forschungszentrum Jülich GmbH, Erlangen, Germany*), Serhiy Cherevko, Gabriel C. da Silva, Moisés A. de Araújo, Tatiana Priamushko, Edson A. Ticianelli
[Influence of the IrO_x incorporation on the OER performance of nickel selenide pre-catalyst](#)

S3-041

Jenn Fang Su (*Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan*)

[A Highly Porous Cu Electrocatalyst for Nitrate Reduction to Ammonium](#)

S3-042

Margherita Verrucchi (*Chemistry, University of Florence, Sesto Fiorentino (FI), Italy*), Carla Bazzicalupi, Walter Giurlani, Massimo Innocenti, Elena Mariani, Giulio Pappaiani, Ambra Pelagatti

[Variables evaluation on electrodeposition of palladium hydrides for hydrogen storage](#)

S3-043

Zengming Zhang (*IEK-13, FZJ-juelich, juelich, Deutschland, Germany*)

[From Retro to Relevant: New Understanding of the Electric Double Layer at Mercury Electrodes](#)

S3-044

Lulu Zhang (*Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany*), Jun Huang

[Plasmonic Sensing of Electric Double Layers at Nanoparticles](#)

S4 - Hydrogen conversion technologies

S4-001

Andrea Baricci (*Dipartimento di Energia, Politecnico di Milano, Milano, Italy*), Andrea Casalegno, Elena Colombo, Amedeo Grimaldi

[Monodimensional Modelling Approach for Polymer Electrolyte Membrane Fuel Cells Validated Against Experimental Data](#)

S4-002

Axelle Baudy (*LEPMI, Grenoble INP - UGA, Grenoble, France*), Marian Chatenet, Laetitia Dubau, Marion Scohy

[Post Mortem Study of Catalyst Degradations in HT-PEMFC MEAs upon Start-stop Operation](#)

S4-003

Fabio Biffoli (*Department of Chemistry, University of Florence, Firenze, Italy*), Antonio Bianchi, Marco Bonechi, Walter Giurlani, Massimo Innocenti, Leonardo Lari, Ilaria Maggini, Arianna Meoli, Matteo Savastano

[Upcycling of Electroplating Industries Waste Waters: Pd-decorated Carbon Black and Graphene Catalysts for Oxygen Reduction Reaction](#)

S4-004

Lazar Bijelić (*Department of Materials Chemistry, National Institute of Chemistry, Hajdrihova 19, Ljubljana, Slovenia*), Tina Dukić, Marjan Bele, Matija Gatalo, Nejc Hodnik, Leonard Jean Moriau, Ante Matošin, Francisco Ruiz-Zepeda

[Carbon-Supported PtCo Nanoalloys for the Oxygen Reduction Reaction: Investigating the Structure-Stability Relationship with Identical-Location Transmission Electron Microscopy](#)

S4-005

Patrizia Bocchetta (*Innovation Engineering, Università del Salento, Lecce, Italy*), Meenal Gupta

[Biomass-derived carbon electrodes as electrocatalysts for regenerative fuel cells](#)

S4-007

Vojtech Domín (*Dept. of Inorganic Technology, University of Chemistry and Technology, Prague, Prague, Czech Republic*), Karel Bouzek, Tomas Bystron, Matija Gatalo, Nejc Hodnik, Martin Paidar, Luka Pavko, Martin Prokop
[Performance and stability of Pt-Co alloy catalysts in HTPEM fuel cells](#)

S4-008

Kirill Dosaev (*ICPEES UMR-7515, CNRS-ECPM-Université de Strasbourg, Strasbourg, France*), Tristan Asset, Amaria Wafaa Oudjdi, Sergey Pronkin
[Electrocatalyst – Ionomer – H₃PO₄ Interactions Unveiled for HT-PEMFCs Applications](#)

S4-009

Giulia Gianola (*Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Torino, Italy*), Plamen Atanassov, Candido Fabrizio Pirri, Stefania Specchia, Juqin Zeng
[Development and Characterization of ORR FeNC Catalyst](#)

S4-010

Nicolò Giulini (*Materials Science, University of Milano-Bicocca, Milano, Italy*), Luca Beverina, Sara Mattiello, Mohsin Muhyuddin, Carlo Santoro, Mauro Sassi
[Upcycling the Discarded Porphyrins Wastes into Electrocatalysts for Oxygen Reduction Reaction](#)

S4-011

Geetanksha Gupta (*Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*), Manoj Neergat
[Kinetic Investigation of Hydrogen Oxidation/Evolution Reactions on Nickel in Alkaline Electrolytes](#)

S4-012

Miroslav Hala (*Department of Inorganic Technology, University of Chemistry and Technology in Prague, Prague, Czech Republic*), Karel Bouzek, Kathleen Heindrich, Tomáš Jedlička, Martin Paidar, Martin Prokop, Andreas Willert, Ralf Zichner, Tatiana Zubkova
[Comparative Analysis of Inkjet and Ultrasonically Sprayed Catalyst-Coated Membranes for PEM Fuel Cells](#)

S4-013

Jun Huang (*IEK-13, Forschungszentrum Jülich, Jülich, Germany*)[Modeling Mesoscopic Electrochemical Double Layers in a Semiclassical Functional Approach](#)

S4-014

Kassa Belay Ibrahim (*Department of Molecular Science and Nano-systems, Ca'Foscari University of Venice, Venice, Italy*), Elisa Moretti, Tofik Ahmed Shifa, Alberto Vomiero[Frontiers in 2D Materials for water splitting derived Green Energy: A Focus on Current Challenges and Opportunities](#)

S4-015

Tae-Won Kim (*Green Energy & Nano Technology R&D Group, Korea Instit. of Industrials Technology, Gwangju, Korea*), Seo-Jin Jeong, Ho-Yung Jung, Hyeon-Bin Lee[Synthesis of Pt-Y-Ni/C Ternary Catalysts via Microwave-Polyol Method for Enhanced Electrochemical Oxygen Reduction Reaction](#)

S4-016

Choeun Kim (*Department of Mechanical and Information Engineering, University of Seoul, Seoul, Korea*), Youngseung Na[Electrochemical Characterization of Proton Exchange Membrane Fuel Cells with Staggered Channel Design](#)

S4-017

Qi Li (*School of Physical and Chemical Sciences, Queen Mary University of London, United Kingdom*), Jingyu Feng, Christopher Jones, Hui Luo, Angus Pedersen, Maria-Magdalena Titirici, Mengnan Wang, Yue Xu, Mi Zhang[Investigating the effect of the combination of Fe porphyrin and carbon nanotubes on the Oxygen Reduction Reaction](#)

S4-018

Lairana Lima Duarte (*Inorganic Chemistry, Technische Universität Dresden, Dresden, Germany*), Julia Grothe, Stefan Kaskel, Maria Rita Ortega Vega, Stefan Röher, Inez Weidinger[Electrochemical oxygen reduction: comparison of a nitrogen-doped templated carbon \(DUT-108\) versus commercial Ketjen Black EC-600JD as supports for iron\(II\) tris\(1,10-phenanthroline\) sulfate](#)

S4-019

Vincent Martin (*CNRS, LEPMI, Grenoble, France*), Laetitia Dubau, Kavita Kumar, Frédéric Maillard, Camille Roiron, Arnaud Viola

[Inductively Coupled Plasma Mass Spectrometry Serving Electrochemistry](#)

S4-020

Eftychia Martino (*Chemical Engineering, University of Patras, Patras, Greece*), Christos Chatziliadis, Constantinos G. Vayenas, Alexandros Katsaounis, Zhongda Liu, Michaela Michaela, Xiaoyan Qing

[Experimental Investigation of Triode Alcohol Fuel Cells](#)

S4-021

Maria Chiara Massaro (*Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy*), Alessandro Hugo Antonio Monteverde

[CFD Modeling of PEMFCs for Aviation: Thermal and Performance Optimization](#)

S4-022

Ante Matošin (*Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia*), Marjan Bele, Lazar Bijelić, Tina Dukic, Matija Gatalo, Nejc Hodnik, Iva Klofutar

[Stability Analysis of Pt-Co Nanoalloy Fuel Cell Electrocatalysts Combining Accelerated Degradation Tests and Identical Location TEM](#)

S4-023

Fabrice Micoud (*CEA LITEN, Université Grenoble Alpes, Grenoble, France*), Thomas Cavoué, Clémence Marty, Joël Pauchet, Jean-Philippe Poirot-Crouvezier, Patrick Redon, Sepehr Saadat, Michaël Slusarek, Benjamin Wiedemann, Florian Wilhelm

[The DOLPHIN Project – Towards Next-Generation Fuel Cell Stacks Featuring Outstanding Performance](#)

S4-024

Jens Mitzel (*Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany*), Pawel Gazdzicki

[PENTASTIC - Robust PEMFC-MEA Derived from Model-Based Understanding of Durability Limitations for Heavy Duty Applications](#)

S4-025

Daniele Mora (*Department of Energy, Politecnico di Milano, Milano, Italy*),
Andrea Baricci, Andrea Casalegno, Elena Colombo, Marta Galli, Andrea Ronci

[Investigating PEMFC heterogeneity of ageing through accelerated stress tests under local operating conditions with a focus on low relative humidity operation](#)

S4-026

Marcel Müller (*Applied Electrochemistry, Fraunhofer ICT, Pfinztal, Germany*), Birgit Kintzel, Julia Melke

[Functionalization and Characterization of Supports for Catalysts in Fuel Cells](#)

S4-027

Mohsin Muhyuddin (*Department of Materials Science, Milan, Italy*),
Hilah C. Honig, Massimiliano D'Arienzo, Lior Elbaz, Silvia Mostoni,
Mohsin Muhyuddin, Carlo Santoro, Roberto Scotti, Paolo Valagussa

[Engineering Atomically Dispersed and Accessible Active Moieties in Fe-N-Cs](#)

S4-028

Mohsin Muhyuddin (*Department of Materials Science, University of Milan Bicocca, Milan, Italy*), Andrea Franzetti, Niccolò Lamanna, Alessandro Lavacchi, Mohsin Muhyuddin, Carlo Santoro, Davide Testa, Luca Zoia, Giovanni Zuccante

[Waste to Electrocatalysts via Pyrolysis: Upcycling the Discarding Cigarette Butts into Oxygen Reduction Reaction Electrocatalysts](#)

S4-029

Andre Olean-Oliveira (*NETZ – NanoEnergieTechnikZentrum, Max-Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*), Viktor Čolić

[Electrochemical oxygen reduction reaction toward hydrogen peroxide generation in edge- and basal-terminated pyrolytic graphite on acidic condition](#)

S4-030

Amaria Wafaa Oudjdi (*ICPEES - Electrochemistry and Energy Conversion, University of Strasbourg, Strasbourg, France*), Tristan Asset, Panagiotis Bexis, Marjorie Cavarroc, Christos Chochos, Cuong Diong-Viet, Kirill Dosaev, Benoit Gouze, Laure Guétaz, Arnaud Morin, Jean-Mario Nhut, Cuong Pham-Huu, Manon Prioux, Sergey Pronkin, Lai Truong-Phuoc

[Degradation-resistant Carbon Supports for Catalytic Layer of HT-PEMFCs](#)

S4-031

Madhuparna Ray (*Polymer and Process Engineering, IIT Roorkee, Saharanpur, India*), Sujay Chattopadhyay, Subrata Maiti, Sunil Shetty, Amit Suhag

[Studies on the Encapsulation of ionic liquids and antioxidants in metal-organic frameworks to achieve high proton conductivity and chemical durability of proton exchange membranes](#)

S4-032

Stefan Röher (*Electrochemistry, TU Dresden, Dresden, Germany*), Julia Grothe, Lairana Lima Duarte, Inez Weidinger

[Operando Electrochemical Raman Spectroscopy of Self-Adsorbed Fe-Phthalocyanine on Nitrogen-Doped Templated Carbon \(DUT-108\) for Enhanced Oxygen Reduction Reaction Activity](#)

S4-033

Sofia Saffirio (*Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy*), Simone Anelli, Silvia Fiore, Sonia Lucia Fiorilli, Claudio Gerbaldi, Manasa Kumar Rath, Massimo Santarelli, Federico Smeacetto

[Scalable strategies for the recovery and reuse of ceramic materials from Solid Oxide Cells \(SOCs\)](#)

S4-034

Aleksandr Samarín (*LEPMI, University Grenoble Alpes, Grenoble INP, Saint-Martin-d'Hères, France*), Antoine Bonnefont, Marian Chatenet, Eric Sibert

[Study of Single Crystal Pt/Ionomer Interfaces](#)

S4-035

Hendrik Sannemüller (*Department of Microsystems Engineering, Hahn-Schickard-Gesellschaft für angewandte forschung e. V., Freiburg, Germany*), Hannes Liepold, Andreas Muenchinger, Hien Nguyen, Severin Vierrath

[Gas mass transport resistance of Hydrocarbon-Based Catalyst Layers in Proton-Exchange Membrane Fuel Cells](#)

S4-036

Mohammad Reza Shirzad Kebria (*Materials science, University of Milano-Bicocca, Milan, Italy*), Saeed Asadi, Piercarlo Mustarelli

[Reinforced Conductive Membrane Integration: Enhancing Performance and Durability of PEM Fuel Cells](#)

S4-037

Diego Stucchi (*Materials Science, Università degli Studi di Milano Bicocca, Milano, Italy*), Tommaso Caielli, Antonio Di Tolla, Alessandro Ferrari, Piercarlo Mustarelli, Giulia Stucchi

[Cerium oxide nanoparticles decorated with different perfluoroalkyl silanes as radical scavengers in Aquivion®-based composite PEMFC](#)

S4-038

Francesco Verducci (*Energy Department, MRT Fuel Cell & Battery Lab, Politecnico di Milano, Milan, Italy*), Andrea Baricci, Andrea Casalegno, Elena Colombo, Amedeo Grimaldi, Giorgio Orsenigo

[Modeling Analysis of the Impact of Platinum Oxides on PEMFC Performance and Degradation Under a Realistic Driving Cycle](#)

S4-039

Lulu Zhang (*Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany*), Yanxia Chen, Jun Huang, Weiqiang Tang, Dongchen Zhao

[Anion-Dependent Non-Nernstian Behaviors in Oxygen Reduction at Pt\(111\)](#)

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20,604

R&D members

22,039

Issued and Pending patents

36.8%

Global EV battery Market share in 2023

Ranking First Seven consecutive years

40%

Global energy storage battery Market share in 2023

Ranking First Three consecutive years

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37th Topical Meeting of the International Society of Electrochemistry

Conference Schedule

SUNDAY 9 June		MONDAY 10 June				TUESDAY 11 June				WEDNESDAY 12 June			
08:30 - 09:20		Keynote - Radenka Maric				Keynote - Marian Chatenet				Keynote - M. Rosa Palacin			
		Room 1	Room 2	Room 3	Room 4	Room 1	Room 2	Room 3	Room 4	Room 1	Room 2	Room 3	Room 4
09:30 - 10:00		S1 - Invited	S2 - Invited	S3 - Invited	S4 - Invited	S1 - Invited	S2 - Invited	S3 - Invited	S4 - Invited	S1 - Invited	S2 - Invited		S1 - Invited
10:00 - 10:45		S1 - Orals	S2 - Orals	S3 - Orals	S4 - Orals	S1 - Orals	S2 - Orals	S3 - Orals	S4 - Orals	S1 - Orals	S2 - Orals		S1 - Orals
10:45 - 11:15		Coffee break				Coffee break				Coffee break			
11:15 - 11:30		S1 - Invited	S2 - Invited	S3 - Invited	S4 - Invited	S1 - Invited	S2 - Orals	S3 - Invited	S4 - Invited	S1 - Invited			S1 - Invited
11:30 - 11:45													
11:45 - 13:00		S1 & S3 Posters	S2 - Orals	S1 & S3 Posters	S4 - Orals	S1 - Orals	S2 & S4 Posters	S3 - Orals	S2 & S4 Posters	S1 - Orals	S2 - Orals		S1 - Orals
13:00 - 14:30		Lunch				Lunch				Closing Ceremony			
Registration													
Opening Ceremony													
Keynote - Yi Cui													
Room 1													
Room 2													
Room 3													
Room 4													
S1 - Orals													
S2 - Orals													
S3 - Orals													
S4 - Orals													
16:00 - 16:15													
16:15 - 16:30													
16:30 - 17:00		Coffee break				Coffee break							
S1 - Invited													
S2 - Invited													
S3 - Invited													
S4 - Invited													
S1 - Orals													
S2 - Orals													
S3 - Orals													
S4 - Orals													
S1 - Pitch													
S2 - Pitch													
S3 - Pitch													
S4 - Pitch													
S1 & S3 Posters & Welcome Reception		Evening				Gala Dinner 20:00							
		S2 & S4 Posters & Aperitif											

S1 - Lithium-based technologies

S2 - Beyond lithium: New chemistries and approaches

S3 - Hydrogen production technologies

S4 - Hydrogen conversion technologies