



71st Annual Meeting

of the
International Society of Electrochemistry

Belgrade, Wednesday 31 August to Friday 4 September 2020

Symposium 8
Oral presentation program

Wednesday 2 September 2020

s08 Next generation batteries - S and T challenges and opportunities

Chairman : Dominic Bresser; Miran Gaberscek; Milica Vujkovic

10:00 to 10:10

Welcome (Organizers)

10:10 to 10:40 Keynote

Evgeny Antipov (Chemistry, Lomonosov Moscow State University, Moscow, Russia)

[Novel Phosphates and Fluoride-Phosphates Electrode Materials for Me-ion Batteries](#)

10:40 to 11:00

Huang Zhang (Institute of Flexible Electronics, Northwestern Polytechnical University, Xi'an, China), Xu Liu, Bingsheng Qin, Stefano Passerini

[Boosting Aqueous Zinc Batteries by Intercalation Chemistries at High-Voltage](#)

11:00 to 11:20

Lea Droguet (Chaire de Chimie du solide et de l'énergie, Collège de France, Paris, France), Alexis Grimaud, Olivier Fontaine, Jean-Marie Tarascon

[Water-in-salt electrolyte: from hype to practical reality in Li-ion battery](#)

11:20 to 11:40

Coffee Break

11:40 to 12:00 Invited

Genki Kobayashi (Department of Materials Molecular Science, Institute for Molecular Science, Okazaki, Japan)

[A Hydride Superionic Conductor Ba_{1.8}LiH_{2.8}O_{0.9}](#)

12:00 to 12:20

Yonggang Wang (Department of Chemistry, Fudan University, Shanghai, China)

[Organic electrodes For Energy Storage and Conversion](#)

12:20 to 12:40

Patrick Gerlach (Center for Energy and Environmental Chemistry Jena, Friedrich Schiller University Jena, Jena, Germany), Rene Burges, Ulrich S. Schubert, Alexandra Lex-Balducci, Andrea Balducci

[The Influence of Protic and Aprotic Ionic Liquids on the Electrochemical Behavior of Organic Radical Polymers](#)

12:40 to 13:00 Invited

Robert Dominko (Department of Materials Chemistry, National institute of chemistry, Ljubljana, Slovenia), Klemen Pirnat, Alen Vižintin, Anja Kopač Lautar, Rekha Narayan, Jan Bitenc

[Enabling multivalent batteries by organic cathodes](#)

14:00 to 14:30 Keynote

Saiful Islam (United Kingdom)

[From Lithium-Rich Cathodes to Solid Electrolyte Interfaces: Atomic-Scale Insights into Battery Materials](#)

14:30 to 14:50

Federico Poli (Chemistry, University of Bologna, Bologna, Italy), Tian Lian, Jose Ramon Herrera, Clara Santato, Fabio Cicoira, Francesca Soavi

[Unveiling the electronic properties of lithium ion materials through electrolyte gate transistor set-up](#)

14:50 to 15:10

Nuria Garcia-Araez (Chemistry, University of Southampton, Southampton, United Kingdom), Rinaldo Raccichini, Liam Furness, James Dibden, Nina Meddings, He Li, John Lampkin, John Owen

[New tools for the rational development of metal-sulfur batteries](#)

15:10 to 15:30

Coffee Break

15:30 to 15:50 Invited

Alejandro A. Franco (LRCS (UMR CNRS 7314), Universite de Picardie Jules Verne, Amiens, France)

[Digital Twin of the Manufacturing Process of Rechargeable Batteries: the ARTISTIC Project](#)

15:50 to 16:10

Betar M. Gallant (Mechanical Engineering, MIT, Cambridge, USA), Rui Guo

[Transport and Reactivity of Ionic Phases of the Lithium SEI](#)

16:10 to 16:30

Vadim Lvovich (Research and Engineering, NASA, Cleveland, USA), Rocco Viggiano, Donald Dornbusch, John Connell, Yi Lin

[Solid-state Architecture Batteries for Enhanced Rechargeability and Safety \(SABERS\)](#)

16:30 to 16:50 Invited

Dina Fattakhova-Rohlfing (Forschungszentrum Juelich, Institute of Energy and Climate Research (IEK-1), Juelich, Germany), Qianli Ma, Frank Tietz

[Solid state sodium batteries: from solid electrolytes to functional device](#)

Thursday 3 September 2020

s08 Next generation batteries - S and T challenges and opportunities

Chairman : Dominic Bresser; Miran Gaberscek; Robert Kostecki; Milica Vujkovic

14:00 to 14:30 Keynote

Stefano Passerini (Helmholtz Institute Ulm, Karlsruhe Institute of Technology, Ulm, Germany), Matthias Kuenzel, Dominic Bresser

[Li-ion batteries: from High Energy to Sustainability](#)

14:30 to 14:50

Guiomar Hernandez (Department of Chemistry Angstrom Laboratory, Uppsala University, Uppsala, Sweden), Andrew J. Naylor, Yu-Chuan Chien, Daniel Brandell, Jonas Mindemark, Kristina Edström

[Elimination of Fluorination: The Influence of Fluorine-Free Electrolytes on the Performance of Si-based Li-ion Batteries](#)

14:50 to 15:10

Raul Garcia-Diez (Interface Design, Helmholtz-Zentrum für Materialien und Energie GmbH, Berlin, Germany), Hyein Moon, Ivana Hasa, Kaiqi Nie, Johannes Frisch, Roberto Felix, Claudia Hartmann, Regan G. Wilks, Stefano Passerini, Marcus Bär

[Spectroscopic study of the Na⁺ insertion mechanism and SEI formation in bio-waste derived hard carbon anodes for sodium-ion batteries](#)

15:10 to 15:30

Coffee Break

15:30 to 15:50 Invited

Alexandre Ponrouch (ICMAB, CSIC, Barcelona, Spain)

[Electrolyte and Interface for Calcium Battery](#)

15:50 to 16:10

Pawel Peter Bawol (Institute for Physical and Theoretical Chemistry, University of Bonn, Bonn, Germany), Helmut Baltruschat, Philip Heinrich Reinsberg, Andreas Koellisch, Inhee Park

[Insights into the ORR and OER in Ca²⁺ containing DMSO: A DEMS, RRDE, AFM and XPS study](#)

16:10 to 16:30

Pekka Peljo (Physical Electrochemistry and Electrochemical Physics, Aalto University, Espoo, Finland), Mahsa Shahsavan, Mahdi Moghaddam, Rasmus Rönkä, Silver Sepp, Solene Gentil, Elena Zanzola, Hubert Girault

[Pathways Towards Next Generation Energy Storage Technologies Based on Redox Flow Batteries: Solid Boosters and Aqueous Organics](#)

16:30 to 16:50 Invited

Isidora Cekic-Laskovic (Helmholtz Institute Münster (IEK-12) FZJ, Corrensstrasse 46, Münster, Germany), Aleksandr Korshunov, Matthew James Milner, Mariano Grünebaum, Armido Studer, Martin Winter

[Novel Verdazyl Electrolyte for Symmetrical Non-aqueous Redox Flow Batteries](#)