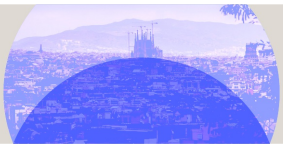


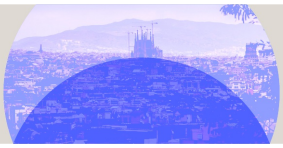
Materials for Sustainable Development Conference (MAT-SUS) (NFM22)

#BATTERIES - Solid State Batteries: Advances and challenges on materials, processing and characterization

Barcelona, Spain, 2022 October 26th - 27th
Conference Chairs: Alex Morata, Albert Tarancón and Ainara Aguadero

Conference Program

October 26th - Day 3 (Wednesday)	
08:55 - 09:00	**Room S9 + S10 Chair Introduction**
	Session 1.1 Chair: Martin Finsterbusch
09:00 - 09:30 1.1-I1	Wolfgang Zeier *(University of Muenster)* Interfaces and scaling relations in solid-state batteries
09:30 - 10:00 1.1-I2	Irune Villaluenga *(IKERBASQUE, Basque Foundation for Science)* Nanostructured Polymer Electrolytes for Li-metal Batteries
10:00 - 10:30 1.1-I3	Montse Casas-Cabanas *(CIC energiGUNE)*, Sona Valiyaveettil-SobhanRaj, Pedro López-Aranguren, Marine Reynaud, Grazia Accardo Oxide and phosphate-based ion conductors: synthesis and low-temperature densification strategies
10:30 - 11:15	**Coffee Break**
	Session 1.2 Chair: Jordi Jacas Biendicho
11:15 - 11:30 1.2-T1	Dominic Spencer Jolly *(University Oxford)*, Peter G. Bruce The dependence of the critical current for voiding on pressure and temperature in lithium and sodium anode solid-state batteries
11:30 - 11:45 1.2-T2	Mikel Arrese-Igor *(CIC energiGUNE)*, María Martinez-Ibañez, Erwan Dumont, Ekaterina Pavlenko, Michel Armand, Frédéric Aguesse, Pedro López-Aranguren Double Layer Polymer Electrolytes as strategy for improved performance high-voltage solid-state Li-metal batteries
11:45 - 12:00 1.2-T3	Antonio Gianfranco Sabato *(Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930, Sant Adrià de Besòs, Spain)*, Marc Nuñez, Simone Anelli, Marc Torrell, Alex Morata, Albert Tarancón 3D printing of LAGP glass electrolyte for all solid state Li-ion batteries
12:00 - 12:15 1.2-T4	Isabel Sobrados de la Plaza *(Instituto de Ciencia de Materiales de Madrid (ICMM), CSIC 28049 Madrid, Spain)*, Ricardo Jiménez Rioboo, Virginia Diez-Gómez, Jesús Sanz Lazaro, Cristina Ruiz-Santaquiteria, Wilmer Bucheli Self-diffusion in polycrystalline Li1+xTi2-xAlx(PO4)3 (0.2 ≤ x ≤ 0.4) samples followed by 7Li PFG (Pulse Field Gradient) NMR spectroscopy
12:15 - 12:30 1.2-T5	Kit Barker *(Department of Materials, Royal School of Mines Imperial College London)*, Stephen Skinner, Ainara Aguadero, Ieuan Seymour The Role of the A Site Element on Ionic Conductivity in Solid Halide Materials
12:30 - 12:45 1.2-T6	Nicolas Osenciat *(EMPA Swiss Federal Laboratories for Materials Science and Technology)*, Abdessalem Aribia, Moritz Futscher, André Müller, Kumar Yalamanchili, Helmut Rudigier, Yaroslav Romanyuk PVD of thin-film solid-state electrolytes: a study on the lithium rich oxychloride antiperovskite
12:45 - 15:25	**Lunch**
15:25 - 15:30	**Room S9 + S10 Chair Introduction**
	Session 1.3 Chair: Ainara Aguadero
15:30 - 16:00 1.3-I1	Alejandro A. Franco *(Laboratoire de Réactivité et Chimie des Solides (LRCS) UMR CNRS 7314 - Université de Picardie Jules Verne 33 rue Saint Leu, FR-80039 Amiens Cedex, France)* A Digital Twin for the Optimization of Battery Manufacturing Processes
16:00 - 16:30 1.3-I2	Francesco Ciucci *(HKUST)* Modeling the Defect Chemistry, Transport Properties, and Stability of Anti-perovskite Materials
16:30 - 17:00 1.3-I3	M. Rosa Palacin *(Institut de Ciència de Materials de Barcelona, ICMAB-CSIC Campus UAB)* Calcium Based Batteries—Lessons Learnt and Challenges Ahead
19:30 - 22:00	**Social Dinner**



October 27th - Day 4 (Thursday)	
08:55 - 09:00	**Room S9 + S10 Chair Introduction**
	Session 2.1 Chair: Montse Casas Cabanas
09:00 - 09:30 2.1-I1	Kelsey Hatzell *(Princeton University)*, Wahid Zaman Chemo-mechanics in lithium metal solid state batteries
09:30 - 10:00 2.1-I2	Pieremanuele Canepa *(Department of Materials Science and Engineering, National University of Singapore)*, Zeyu Deng, Tara Mishra, Eunike Mahayoni, Vincent Seznec, Jean-Noel Chotard, Anthony Cheetham, Christian Masquelier, Gopalakrishnan Sai Gautam Theoretical and Experimental Studies of ion Transport in Mixed Polyanion Solid Electrolytes
10:00 - 10:30 2.1-I3	Jordi Jacas Biendicho *(Catalonia Institute for Energy Research)*, Zahilia Cabán Huertas High performance silicon electrode enabled by titanicone coating
10:30 - 11:15	**Coffee Break**
	Session 2.2 Chair: Albert Tarancón
11:15 - 11:45 2.2-I1	Yaroslav Romanyuk *(Empa - Swiss Federal Laboratories for Materials Science and Technology)*, Jordi Sastre, Xubin Chen, Abdessalem Aribia, Diego Burri, Luc Brinkman, Moritz Futscher Thin-film solid-state batteries: building efficient microbatteries that could advance bulk devices
11:45 - 12:15 2.2-I2	Mark Huijben *(University of Twente, MESA+ Institute for Nanotechnology)* Lithium Transport in Epitaxial 2D and 3D Thin Films for Solid-State Batteries
12:15 - 12:45 2.2-I3	Martin Finsterbusch *(Institute of Energy and Climate Research: Materials Synthesis and Processing (IEK-1))* Oxide-Electrolyte Based All-Solid-State Batteries
12:45 - 15:25	**Lunch**
15:25 - 15:30	**Room S9 + S10 - Chair Introduction**
	Session 2.3 Chair: Alex Morata
15:30 - 15:45 2.3-T1	Kunjoong Kim *(Technical University of Munich, Department of Chemistry)* Designing cathode composite for oxide Li-metal battery
15:45 - 16:00 2.3-T2	Guanchen Li, Zeyang Geng *(Department of Engineering Science, University of Oxford, United Kingdom)*, Charles Monroe Cell design principles for solid-state batteries from a streamlined porous-electrode model
16:00 - 16:15 2.3-T3	Abdessalem Aribia *(Laboratory for thin-films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology)*, Moritz Futscher, Jordi Sastre, Matthias Rumpel, Agnieszka Priebe, Max Döbeli, Tiwari Ayodhya, Yaroslav Romanyuk Unlocking Stable Multi-Electron Cycling in NMC811 Thin-Films between 1.5 – 4.7 V
16:15 - 16:30 2.3-T4	Juan Carlos Gonzalez-Rosillo *(Catalonia Institute for Energy Research−IREC)*, Alex Morata, Albert Tarancón Thin and Robust LATP Solid Electrolytes with Close-to-Bulk Ionic Conductivity and its Integration in Solid-State Architectures
16:30 - 16:45 2.3-T5	Sergio Federico Mayer *(Instituto de Ciencia de Materiales de Madrid (ICMM), CSIC 28049 Madrid, Spain)*, José Antonio Alonso Materials for energy: neutron diffraction structural characterisation and structure-properties correlation
16:45 - 16:50	**Symposium Closing**
17:15 - 17:30	**General Closing**
17:30 - 20:00	**Poster Session**

Poster Contribution

328	Philipp Odenwald *(Institute of Energy and Climate Research: Materials Synthesis and Processing (IEK-1))*, Enkhtsetseg Dashjav, Frank Tietz, Dina Fattakhova-Rohlfing Zr-Deficient NaSICON Solid Electrolytes - Enhanced Sintering and Ionic Conductivity
329	Müller André *(Laboratory for Thin Films and Photovoltaics, Empa – Swiss Federal Laboratories for Materials Science and Technology, Überlandstrasse 129, CH-8600 Dübendorf, Switzerland)*, Okur Faruk, Aribia Abdessalem, Futscher Moritz H., Romanyuk Yaroslav E. Understanding the influence of an artificial SEI at the LLZO/LCO electrolyte-cathode interface
343	Zipei Wan *(University of St Andrews)*, John Irvine Novel Garnet-type Electrolyte Li7-xLa3Ce2-xTaxO12 with Fast Lithium Ion Conduction
344	Mihkel Vestli *(University of St Andrews)*, John Irvine Characerization of Ta-doped LLZO electrolyte for solid state battery prepared by tape-casting
345	Ioanna Maria Pateli *(School of Chemistry, University of St Andrews, St Andrews, Fife KY16 9ST, UK)*, Mihkel Vestli, John T.S. Irvine Interfacial Chemical Stability of Li6.5La3Zr1.5Nb0.5O12 with Common Positive Battery Materials