

## 7<sup>TH</sup> WORKSHOP "LITHIUM-SULFUR-BATTERIES" NOVEMBER 12 - 13, 2018

Venue: Fraunhofer IWS, Winterbergstraße 28, 01277 Dresden

### NOVEMBER 12

- 10:00 Registration

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Session I Trends in material development: Electrolytes and cathode chemistry  
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Chair: Prof. Dr. Stefan Kaskel, Fraunhofer IWS, TU Dresden

- 11:00 Welcome and opening  
*Prof. Dr. Christoph Leyens, Fraunhofer IWS, TU Dresden, Germany*
- 11:15 General overview on polymer electrolytes  
*Prof. Dr. Michel Armand, CIC energigune, Spain*
- 12:00 *On the mechanism of effect of concentration of lithium support salts in electrolyte on performance of lithium-sulfur batteries*  
Dr. Elena Karaseva, Ufa Institute of Chemistry of Russian Academy of Sciences, Russia
- 12:30 Lunch break
- 13:45 New electrolytes with low polysulfide solubility and low mass density  
*Christine Weller, Fraunhofer IWS, Germany*
- 14:15 Triphasic interface-mediated routines for high-efficiency lithium-sulfur batteries  
*Dr. Long Kong, Tsinghua University, China*
- 14:45 Revisiting the design rules for thick sulfur cathodes: Enabling high energy density lithium-sulfur batteries  
*Dr. Mahdokht Shaibani, Monash University*
- 15:15 Coffee break

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Session II Mechanisms and modelling  
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Chair: Dr. Susanne Dörfler, Fraunhofer IWS

- 15:45 Multidimensional operando analysis of Li/S batteries with neutrons and photons  
*Dr. Sebastian Risse, Helmholtz-Zentrum Berlin, Germany*
- 16:15 In-situ impedance spectroscopy of a sulfur-cathode in Li-S batteries  
*Qi He, Technische Universität München, Germany*
- 16:45 Real-time modelling for lithium-sulfur battery management systems  
*Dr. Daniel Auger, Cranfield University, United Kingdom*
- 17:30 Poster session and dinner at Fraunhofer IWS

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#### Session III Solid state cell concepts

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Chair: Dr. Holger Althues, Fraunhofer IWS

- 09:00 Understanding and optimizing thiophosphate ionic conductors for the use in Li-S solid-state batteries  
*Dr. Wolfgang Zeier, Justus-Liebig-Universität Gießen, Germany*
- 09:30 Li<sub>2</sub>S-P<sub>2</sub>S<sub>5</sub>-LiI based solid electrolytes for next generation lithium sulfur batteries using metal sulfide composite cathodes  
*Milad Hosseini, Helmholtz Institute Ulm, Germany*
- 10:00 Coffee break
- 10:30 *Development of all-solid-state polymer Li-S*  
*Dr. Chunmei Li, CIC energigune*
- 11:00 Challenges on a high sulphur loading cathode for all-solid-state Li-S cells  
*Dr. Yuichi Aihara, Samsung SRJ*
- 11:30 Towards accurate diffusion measurements in solid-state electrolytes using NMR diffusometry  
*Prof. Dr. William Price, Western Sydney University, Australia*
- 12:00 Lunch break

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#### Session IV Li-S Pouchcell Design, Manufacturing & Evaluation

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Chair: Prof. Dr. Stefan Kaskel, Fraunhofer IWS

- 13:15 Safety and performance evaluation of Li-S prototype cells  
*Dr. Holger Althues, Fraunhofer IWS, Germany*
- 13:45 End to end processing of lithium metal anodes  
*Dr. Jacob Locke, OXIS Energy, United Kingdom*
- 14:15 Processing of advanced lithium sulfide cathodes for lithium-sulfur-batteries  
*Sebastian Daniel Hirt, Zentrum für Brennstoffzellentechnik GmbH, Germany*
- 14:45 Concluding remarks  
*Prof. Dr. Stefan Kaskel, Fraunhofer IWS, TU Dresden, Germany*
- 15:00 Tour through the labs of the Fraunhofer IWS (optional 1h)