



Advanced materials and systems for electrochemical energy storage (EMRS/B 2017): Foreword

This special issue of *Electrochimica Acta* contains a selection of research articles corresponding to contributions presented at Symposium-B as part of European Materials Science Meeting Edition 2017, that was held in Strasbourg, France from the 22nd to the 26th of May 2017. The symposium gathered more 200 delegates from all around the world, being thus the symposium with the largest participation at this conference. We were very pleased with the strong and diverse attendance.

The theme of the meeting, which was also sponsored by CHILWEE Co. and International Society of Electrochemistry, was 'Advanced materials and systems for electrochemical energy storage'. One plenary lecture, 15 keynote invited lectures, 70 contributed orals and approximately 120 posters presented broad ranging research, emphasising the importance of electrochemical energy storage for a more efficient renewable energy management in the near future.

The intent of this symposium was to provide a forum for scientists worldwide to present the state of the art developments and discuss the strategies to improve the performance metrics, safety attributes and reduce the cost of the electrochemical energy storage systems and devices. The discussions covered the chemistry, materials and engineering aspects for current and emerging concepts in Lithium-ion batteries and beyond: improved capacitive energy storage, hybrid systems, but also cell design towards system level considerations. It was the right place to debate on horizons in multifunctional energy storage designs that go beyond the current system performances.

We were fortunate to have Prof. Patrice Simon (UPS Toulouse, France) selected as the conference plenary speaker that gave an excellent talk on capacitive electrochemical energy storage. We were also delighted to have the following internationally renowned scientists presenting at this conference the state-of-the-art advances in the electrochemical energy storage field:

- Andrea Balducci (FS-Universität Jena, Germany) speaking on "Protic ionic liquids as electrolyte for lithium and sodium batteries";
- Renaud Bouchet (LEMPI/INP, France) speaking on "Towards Better Single-Ion Block Copolymer Electrolytes";
- Dominic Bresser (CEA, France) speaking on "Potential synergies and remaining challenges for combined conversion/alloying materials as lithium-ion anodes";
- Lee Johnson (Oxford University, UK) speaking on "Cathode Reactions in Rechargeable Aprotic Metal-O₂ Batteries";
- Robert Dominko (NIC, Slovenia) speaking on "Materials for magnesium batteries";
- Bruce Dunn (UCLA, USA) speaking on "Pseudocapacitive Energy Storage in Oxide Materials";
- Yury Gogotsi (Drexel University, USA) speaking on "Storing Energy in 2D Carbides and Nitrides";
- Alexis Grimaud (Collège de France, France) speaking on "Anionic redox processes for electrochemical devices: from theory to application";
- Jusef Hassoun (University of Ferrara, Italy) speaking on "Advanced Lithium–Sulfur battery Configurations";
- Satoshi Horike, (Kyoto University, Japan) speaking on "Ion conducting coordination polymer crystals for energy devices working at intermediate temperature";
- Mathieu Morcrette (UPJV/LRCS, France) speaking on "Improvement of Li–S batteries";
- Huisheng Peng (Fudan University, China) speaking on "Fiber-Shaped Energy Harvesting and Storage Devices";
- Philippe Poizot (IMN/IUF, France) speaking on "Design and electrochemical properties of organic host materials for rechargeable batteries";
- Gary Rubloff (University of Maryland, USA) speaking on "Thin Film Processing, Structures and Architectures for Advanced Batteries";
- Chunsheng Wang (University of Maryland, USA) speaking on "Impact of electrolyte stability on electrochemical performance of Li-ion battery".

The scientific sessions were characterised by vibrant discussion and exchange of ideas. The oral sessions ran from early Monday morning till Friday afternoon, with full-five busy days. Given the high number of submission, two poster sessions (Tuesday and Thursday evening) were organized and enhanced by local food, and Alsatian wine.

There were also many prizes awarded to promising young scientists contributing to this event. First, two best graduate students awards were awarded to Mrs. Olesia Karakulina and Mr. Daobin Liu. ISE sponsored Best Oral Presentation Award Winners were Alice Robba, Leire Meabe, Niccolo Guerrini. And ISE sponsored Best Poster Award Winners were Jong Tae Yoo, Adrian Münzer, Hemesh Avireddy, Deyana Tchitchekova, Aliya Mukanova, Andrea Grimoldi. All of these awardees acknowledged for their excellent research and achievements.

The organization of a such a successful symposium would have not been possible without the participation of many researchers and we would like to thank in particular the symposium scientific committee members including Michel Armand (CIC Energigune, Spain), Jan Fransaer (Katholiek Universiteit Leuven, Belgium), Miran Gaberscek (NIC, Slovenia), Hubert Girault (LEPA, EPFL,

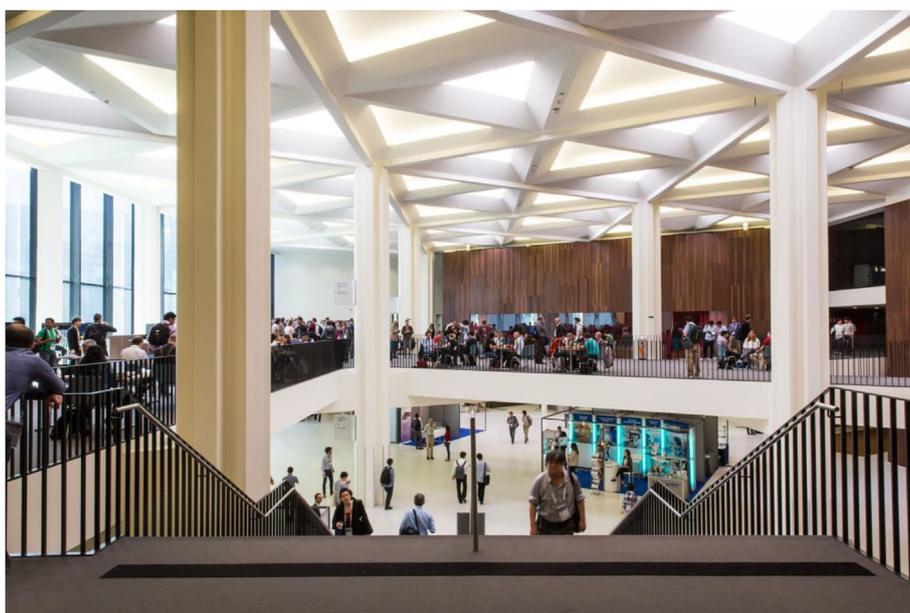
Switzerland), Geoffroy Hautier (Katholieke Universiteit Leuven, Belgium), Paolo Samori (Université de Strasbourg, France), Frederic Sauvage (LRCS, Amiens, France), Bao-Lian Su (UNamur, Belgium) and Herman Terryn (VUB, Belgium); as well as ISE sponsored Best Poster and Oral Presentation Awards panel members including M. Alfredsson, A. Ponrouch, S. A. Freunberger, N. Aguiló-Aguayo, C. Per-

eira, M. Shaijumon, M. Marinaro and B. Laïk.

Last but not least, we also wish to thank all the participants and support staff who contributed to making this a highly successful and enjoyable meeting. And looking forward to see you again in 2019 during the E-MRS to be held in Nice, France !



Conference venue



Main hall



Prof. Patrice Simon giving the plenary session talk



Symposium B graduate student award ceremony: second from left - Daobin Liu, third from right, in front - Olesia Karakulina



Conference room during presentations

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