



## Preface

Polymer batteries and fuel cells are at the forefront of the development of portable and stationary new power and energy sources. The Second International Conference on Polymer Batteries and Fuel Cells was held in Las Vegas, NV, June 12–17, 2005 at the Riviera Hotel. The Electrochemical Society, Inc. administered the meeting. There were over 220 in attendance and 194 papers and posters. The meeting was organized by James E. McGrath of Virginia Polytechnic and State University and Ralph J. Brodd of Broddarp of Nevada, Inc. This was the second meeting in the series that started with PBFC-1, organized by Dr. J Park and held on Jeju Island Korea in June 2003.

The conference was evenly divided between the Polymer Battery and Fuel Cell sections. The researchers presented their work on the latest progress in the field and the technical challenges in high power batteries from universities, national laboratories, and institutes as well as from the major developers in each field, such as NEC, Valence Technology, Celgard, and General Motors.

Lithium batteries and fuel cells based on polymer components are emerging technologies that have been under intense investigation and development over the past two years with significant progress. These two technologies seldom meet together, even though there is considerable synergy between the two groups. In many instances, they are competing for the same or similar markets. These polymer devices have potential advantages in terms of versatility in design, safety and improved energy density. Accordingly, several commercial types of lithium and lithium-ion polymer have been introduced in the portable electronics arena. Likewise, polymer electrolyte fuel cells are considered to be the power source of the future. However, there are many problems that remain to be overcome and inventions to be made from the fundamentals to the applications in these polymer systems including the manufacturing processes. The PBFC-2 Conference provided a unique forum to present, discuss and exchange experiences between fuel cell and battery scientists and technologists for the advancement of the technology.

Drs. Paul Stonehart and Stanley Whittingham gave the keynote lectures in Fuel Cell and Polymer Battery Sessions, respectively. The session topics included structure of the cathode and anode materials, liquid and polymer battery electrolytes including ionic liquids, as well as battery systems. In the Fuel

Cell Sessions topics included polymer electrolyte membrane composition and structure, precious and non-precious metal catalysts, modeling and transport properties in membranes. A proceedings volume will be issued by the *Journal of Power Sources*. The next PBFC Conference will be hosted by Dr. Bruno Scrosati in 2007 in Italy. Hope to see you there.

The Executive Committee consisted of T. Osaka, Waseda University, B. Scrosati, University of Rome, J.-K. Park, KAIST, and R. Brodd of Broddarp of Nevada. The advice and assistance of Dr. Park, Chairman of PBFC-1 was especially helpful. A special “thank you” to the members of the Local Committee for their support, council and encouragement, to the members of the International Scientific Committee as well as to the local committee members for their valuable advise and support in making the Conference a great success.

The manuscripts in this special issue of the *Journal of Power Sources* were subjected to peer review and accepted papers are being published in this volume. Thanks to the authors for the preparation of the manuscripts as well as to the referees for their critical evaluations that contributed to the excellence of the conference record.

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