

The preface

S. R. S. Prabakaran • B. V. R. Chowdari • R. J. Brodd

Published online: 9 January 2008
© Springer-Verlag 2007

With the objective of providing a common platform for both local and international materials scientists, engineers, and technologists, the Materials Research Society of Singapore (MRS-S) has succeeded over the years into the organization of International Conference on Materials for Advanced Technologies (ICMAT), a biannual event first launched in 2001. Since then, it has been very successful and a popular event among materials scientists and engineers from all over the world. The ICMAT conferences are organized in association with the National University of Singapore (NUS), Nanyang Technological University (NTU), Institute of Materials Research and Engineering (IMRE) and many other national and international organizations.

The 2007 event is fourth of its kind held on July 1–6, 2007 at Singapore, as part of a continuing series. The conference was declared open at the SUNTEC Singapore International Convention and Exhibition Centre (SICEC) on 2 July 2007 at the traditional inaugural event followed by a plenary address by Prof. Claude Cohen-Tannoudji, a noble laureate in Physics. A total of 1,750 delegates from all around the world presented more than 2,000 papers at

the 5-day conference. In addition to plenary, public, and theme lectures, there were 18 symposia covering the frontier areas of materials science, engineering, and technology. More than 50 vendors displayed equipment and products at the accompanying exhibition.

The Symposium K on ‘*Nanostructured and Bulk materials for Electrochemical Power Sources*’ had attracted large participation necessitating parallel sessions, indicating the importance of advanced electrochemical power sources such as lithium-ion batteries, electrochemical capacitors (ECs) and fuel cells. The symposium was an interdisciplinary forum devoted to all aspects of science and technology of bulk and nanostructured materials as applied to electrochemical power sources.

Under one roof, the symposium gathered many world luminaries who brought impetus to the conference in general and the Symposium K in particular. The oral presentations were carefully selected from the abstracts received on the basis of their pertinence and originality. They were classified into four broad categories: electrodes (cathodes and anodes), electrolytes, ECs and fuel cells. Special interest was focused on the current state-of-the-art Phospho-Olivine cathode materials as well. A total of 120 papers which include 38 invited, keynote talks, 57 oral presentations, and 25 poster papers were presented. There were two parallel sessions devoted to discuss various aspects of these electrochemical power sources. As usual, topics related to lithium-ion batteries (LIB) received great emphasis. Nevertheless, the prime focus was centered on the nanostructure aspects of electrode materials used in batteries, ECs and fuel cells. Recent developments in the understanding of the behavior of positive electrode (cathode) materials, especially LiFePO₄, received utmost attention among the invited speakers. On the other hand, negative electrode (anode) materials also received good attention. ECs and the

S. R. S. Prabakaran (✉)
Faculty of Engineering,
The Nottingham University Malaysia Campus,
Jalan Broga, Semenyih,
Selangor 43500, Malaysia
e-mail: prabakaran.sahaya@nottingham.edu.my

B. V. R. Chowdari
Department of Physics, The National University of Singapore,
BLK S12, Lower Kent Ridge Road,
Singapore 117542, Singapore

R. J. Brodd
Valence Technologies, Inc.,
6504 Bridge Point Pkwy., Ste. 415,
Austin, TX 78730, USA

fuel cell topics were also rendered equal importance because of their increasing needs in various electrochemical energy storage applications. To promote discussions and foster collaborations, the poster presentation was regarded as a media. Two best posters were chosen by the duly appointed judges, and the awards were presented acknowledging the scientific merits.

To disseminate wide spread attention to the international audience having interest in these topics, a special issue proceedings was planned to publish peer reviewed manuscripts presented in the symposium. In this respect, a reasonable number of manuscripts were received for publication in the proceedings. These were duly subjected to the process of peer review by the journal office independently. The accepted papers are being published as a special issue in the '*Journal of solid state electrochemistry*'. Thanks are due to all the authors for submitting the manuscripts before the deadline and to the reviewers for their critical evaluation and suggestions for improving the manuscripts, which greatly contributed to their quality as per journal's standards.

On behalf of the symposium organizing committee, I would like to express my sincere gratitude to the co-chairmen [Dr. Ralph J. BRODD, Valence Technology Inc.,

USA, Prof. B.V.R. CHOWDARI, National University of Singapore, Singapore, Prof. LU Li, National University of Singapore, Singapore, Prof. G. V. SUBBA RAO, Materials Research Society (Singapore), Singapore], to all members of the International scientific and local organizing committee, the invited, keynote speakers, the session chairpersons, authors, and the enthusiastic audience who contributed a great deal to the success of the Symposium K. Finally, the cooperation of the journal assistant editors, editorial assistants, Editor-in-Chief, Prof. Fritz Scholz for the timely release of the online first publication and the publication of proceedings volume in such a short period of time is gratefully acknowledged. We sincerely thank Valence Technology Inc, USA for the valuable sponsorship and the active participation.

We take this opportunity to express our deep appreciation and thanks to symposium assistants and the event manager for their assistance in the conference logistics. Last but not the least, we sincerely thank IUMRS (USA) members Dr Gopal Rao and Dr Mike Driver for their valuable meeting scene coverage during the conference. We hope the special issue will be of interest not only to the active researchers in the field of electrochemical power sources, but also to encourage and motivate budding researchers.