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## Editorial

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### Prakash C. Ghosh\* and Santanu Bandyopadhyay

Department of Energy Science and Engineering,  
Indian Institute of Technology Bombay,  
Powai, Mumbai, 400076, India  
Email: pcghosh@iitb.ac.in  
Email: santanu.bandyopadhyay@gmail.com

\*Corresponding author

**Biographical notes:** Prakash C. Ghosh is currently serving as an Associate Professor in the Department of Energy Science and Engineering at Indian Institute of Technology Bombay, Mumbai, India. He received his Doctoral degree in Mechanical Engineering from RWTH Aachen, Germany. His research interests include low temperature fuel cells which include designing, modelling, fabrication and characterisation of PEFC and HT-PEFC stacks. In addition to these he is also involved in solar hydrogen research. He has 34 international journal papers in the field of solar energy, fuel cells and hydrogen energy. He has also four awarded international patent and four filed patents in his name. He has participated in several national as well as international projects with several countries such as the UK, Canada, Australia and the USA in the capacity of Principal Investigator and co-Principal Investigator.

Santanu Bandyopadhyay is currently Institute Chair Professor, Department of Energy Science and Engineering, at the Indian Institute of Technology Bombay. In 2001, he joined Department of Energy Science and Engineering (formally, Energy Systems Engineering), IIT Bombay. His research interest includes process integration, pinch analysis, industrial energy conservation, modelling and simulation of energy systems, design and optimisation of renewable energy systems, etc. Since 1994, he has been associated with and contributed towards various developmental, industrial, and research activities involving different structured approaches to process design, energy integration and conservation as well as renewable energy systems design. He is currently Editor for *Asia for Clean Technologies and Environmental Policy* (Springer).

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The Department of Energy Science and Engineering at the Indian Institute of Technology Bombay, Mumbai, India is one of the dedicated departments in India focussing on energy setup. IIT Bombay had an interdisciplinary program in energy systems engineering, which grew into the department. Keeping the vision of the department, 'to develop sustainable energy systems and solutions for the future' in mind, it was felt there was a need to provide a common platform for Indian researchers in the field of energy and power, and so the 1st National Conference was organised in 2006. Subsequently, in 2007, it was further expanded and reached the next level in the form of a biennial international conference and the first International Conference on Advances in Energy Research was organised.

The 4th International Conference on Advances in Energy Research (ICAER) was organised in the Indian Institute of Technology Bombay, Mumbai, India between

10–12 December 2013. A total of 350 registrants and 324 papers were received from different countries (Australia, Canada, Japan, Malaysia, the Philippines, Turkey, the UK, and the USA). Finally, after reviewing, 246 papers were selected for presentation at the conference. Out of the selected papers, 190 were scheduled for oral presentation and 56 were scheduled for poster presentation. The conference was organised in 27 sessions in the fields of photovoltaic, solar thermal, wind energy, biomass and combustion, energy storage, energy efficiency and modelling, energy policy, fuel cells, and buildings, to name but a few. This special issue of the *International Journal of Energy Technology and Policy* is a collection of six expanded papers selected from the 4th International Conference on Advances in Energy Research.

This special issue consists of papers ranging from materials development for energy application to the system level analysis.

Dharaskar et al. discuss the synthesis of ionic liquid suitable for investigation of possible application as green energy efficient solvent.

Jain et al. have presented a vapour compression-absorption cascaded refrigeration system to obtain optimal condensing temperature for cascading condenser.

Bhattacharya and Sengupta have described the effect of ambient air temperature on the performances of regenerative air pre-heated pulverised coal fired boilers.

Boyaghchi and Sabaghian have studied the variation of exergoeconomic parameters and optimisation of a Kalina power cycle integrated with parabolic trough solar collectors.

Chowdhury et al. presented the method controlling guarded hot box for determining the U-value using.

Kavei et al. have grown multilayer ZnS and Ag thin films by PVD method at nano-scale thickness and different substrate temperatures are investigated.

I would like to thank all the participants, the members of the organising and academic committee and most importantly the students of the department for their help in organising this conference.