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Science, TEchnology and Mathematics Education**

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Proceedings

Editors

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Organised by

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PREFACE

epiSTEME-7 is the seventh in a series of biennial conferences organized by the Homi Bhabha Centre for Science Education, a Centre of the Tata Institute of Fundamental Research, Mumbai, India. The epiSTEME conferences bring together researchers and educationists in science, technology and mathematics education in an interdisciplinary exchange. The research shared at these conferences is inspired by cognitive, pedagogical, historical, philosophical and socio-cultural aspects of the sciences.

The name epiSTEME connotes, at one level, a systematic study of knowledge, while as an acronym it suggests a meta-view of science, technology and mathematics education. The previous epiSTEME conferences, held in 2004, 2007, 2009, 2011, 2013 and 2015 have catalyzed collaborative educational programmes globally. Within India, these collaborations have helped to initiate and foster linkages between theory, empirical research and the work of grassroots organizations.

Four broad strands of research that impact STME form the core of epiSTEME-7 and the themes identified under each strand to reflect active research topics and areas of interest are:

Strand 1 – Historical, philosophical and socio-cultural studies of STM: implications for education (history and philosophy of STM, socio-cultural and gender issues in STM, science and technology studies)

Strand 2 – Cognitive and affective studies of STME (visuo-spatial thinking, knowledge representation, language and learning, problem solving)

Strand 3 – Curriculum and pedagogical studies in STME (assessment and evaluation, role of ICT in teaching-learning, classroom discourse, affective aspects of learning, professional development of teachers, educational initiatives and innovations)

Strand 4 – Discipline based education research with emphasis on undergraduate science education

Leading scholars from Australia, Canada, India, UK and the USA will present overviews of some of the themes within each strand. The conference has 9 invited talks addressing the research areas of STME. In addition, paper and poster sessions, a few post conference workshops have been planned. The epiSTEME-7 conference received 87 submissions and each paper was sent to 3 reviewers for blind review. We take this opportunity to thank all the 77 reviewers for their role in the peer review process of epiSTEME-7. The conference submissions had an acceptance rate of about 70 percent. Of the accepted papers, there will be 32 oral presentations and 22 poster presentations. The participants to epiSTEME-7 come from 9 countries in addition to India. These include Germany, Iran, Mauritius, Nepal, Rwanda, Singapore, South Africa, Sweden and the USA.

We wish to express our gratitude towards all members of HBCSE for their co-operation. We thank Prof. K. Subramaniam who has been a source of encouragement to us, and Prof. Sugra Chunawala for her support and guidance at every juncture. All the academic and organizational committee members deserve special thanks for their active participation in the planning and execution of the conference, their inputs were indeed helpful. We thank Mr. Tejas Joshi for his unstinting editorial contribution and suggestions for typesetting. Ms. Indrani Das Sen, Ms. Anjali Sadanandan and Ms. Pratiksha Rajadhyaksha helped with the proof-reading. Sincere thanks to Mr. K. R. Manoj for setting up the conference submission system and designing graphics for the event.

Editors

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