

Preface

Dear Distinguished Delegates, Guests, and Readers,

J.J. College of Engineering and Technology (J.J.C.E.T.), one of the premier educational institutions, located in Tiruchirappalli, Tamilnadu, India amid pleasant surroundings is a delightful place to hold an international conference (www.jjcet.ac.in). The management, staff, and students together are highly interested in promoting India as a developed country. As a stepping-stone in their efforts, they hosted this first International Conference on Emerging Trends in Science, Engineering and Technology (INCOSSET-2012), getting technical sponsors from the leading and most prestigious publications, IEEE and Springer. The Conference INCOSSET-2012 was held on 13 and 14 December 2012.

In the INCOSSET-2012 conference, there were five themes covering different disciplines. Theme 1 Integrated Information, Communication, and Computing Technology. Theme 2 comprised Engineering Disciplines of Production, Aeronautical, Mechanical, Material Science, and Energy. Theme 3 consisted of Environmental and Civil Engineering. Theme 4 covered Electrical Power Drives and Controls, Instrumentation, Automation, and Robotics. Theme 5 included Science and Management. The INCOSSET-2012 Conference published the proceedings in two volumes: Volume-I comprised Theme 1 and Theme 4 which is technically sponsored by IEEE. Volume-II comprised Themes 2, 3, and 5 which are published by Springer.

Both the proceedings volumes I and II of the conference contain the written versions of most of the contributions presented by the researchers and academicians who came from all over the world to present and discuss topics in their respective research areas. Around 250 scientific researchers and academicians had a good opportunity for having many fruitful discussions and exchanges that contributed to the success of the conference. The contributions of their research that were presented on the first day formed the heart of the conference to provide ample opportunity for discussion.

This conference attracted more than 700 papers from authors. All these papers were sent to the members of the Peer Reviewing Technical Committee. The reviews were based on the papers' relevance to the theme, originality and presentation of the work, importance and contribution of work towards current research. The selected, accepted, and registered papers 160 in number were split almost

equally between the five main themes and were distributed across the days of the conference so that approximately equal numbers of papers in the different areas were scheduled on both days for oral presentation. One paper was selected from each theme and was awarded as the best paper in the respective theme. There were nearly 160 oral presentations during the conference's 20 pre-planned technical sessions. The Conference program was made available on the college and conference web site (www.jjcet.ac.in and www.incoset.jjcet.ac.in).

The inclusion of video conferencing technology in the conference INCOSSET-2012 facilitated the keynote speaker's efforts to present the ideas and methods in a lively and accessible way. The authors of accepted and registered papers who were unable to participate in the conference INCOSSET-2012 were also permitted to present from their own place. This adoption of Video Conferencing technology in the conference INCOSSET-2012 was remarkable in the history of J.J.C.E.T and was highly appreciated.

There were five Keynote Speakers: In Theme 1, Dr. Mohd Zaid Bin Abdullah (USM's School of Electrical and Electronic Engineering, Malaysia) gave a very enlightening speech on "*Microwave Technology*". In Theme 2, Dr. S. G. Ponnambalam, (Monash University, Malaysia) talked on "*Evolutionary Algorithm for Flexible Assembly Line Scheduling*" and Dr. Yukio Tamura, Director, Global Center of Excellence Program, Tokyo Polytechnic University, Japan, enlightened with the topic on "*Recent topics in wind engineering and building aerodynamics special reference to 634 m high Tokyo Sky Tree*". In Theme 3, **Dr. Shen-En-Chen**, Associate Professor, University of North Carolina, Charlotte, USA, spoke on the topic "**Network-Wide Transportation Infrastructure Monitoring Strategies and Enabling Technologies**". In Theme 4, Dr. Samavedham Lakshmi Narayanan (National University of Singapore, Singapore) enlightened with his talk on "*Mathematical Modeling and its Relevance to the Management of Epidemics/ Infectious Disease*". In Theme 5, Dr. S. R. S. Prabakaran (Manipal International University, Malaysia) conversed on the topic "*Will NANO Technology Dominate 21 Century and Beyond?*".

All in all, the INCOSSET-2012 in J.J.C.E.T., Tiruchirappalli was successful. The keynote speeches and plenary sessions gained insight into new areas. Also, included among the speakers were several young scientists, academicians, industrialists, Ph.D. research scholars and PG students, who brought new perspectives to their fields.

Given the rapidity with which engineering and science is advancing in all of the areas covered by INCOSSET-2012, we expect that the future INCOSSET conferences will be more stimulating than this most recent one, as indicated by the contributions presented in this proceedings volume.

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