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Software Technology and Engineering
(ICSTE 2011)

August 12 – 14, 2011

Kuala Lumpur, Malaysia



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PREFACE

Dear Distinguished Delegates and Guests,

The Organizing Committee warmly welcomes our distinguished delegates and guests to the 2011 3rd International Conference on Software Technology and Engineering (ICSTE 2011), and the workshop—2011 International Conference on Computer Design and Engineering (ICCDE 2011) and 2011 International Conference on Energy and Electrical Systems (ICEES 2011) held during August 12-14, 2011, Kuala Lumpur, Malaysia.

ICSTE 2011 is co-sponsored by University Putra Malaysia, Polytechnic University Puerto Rico, Chengdu Young Education & Consultancy, and IACSIT. If you have attended a conference sponsored by IACSIT before, you are aware that the conferences together report the results of research efforts in a broad range of Computer Science and Information Technology. These conferences are aimed at discussing with all of you the wide range of problems encountered in present and future high technologies. The ICSTE 2011 is organized to gather members of our international community scientists so that researchers from around the world can present their leading-edge work, expanding our community's knowledge and insight into the significant challenges currently being addressed in that research. The conference Program Committee is itself quite diverse and truly international, with membership from the Americas, Europe, Asia, Africa and Oceania.

This proceeding records the fully refereed papers presented at the conference. The main conference themes and tracks are Software Technology and Engineering. The main goal of these events is to provide international scientific forums for exchange of new ideas in a number of fields that interact in-depth through discussions with their peers from around the world. Both inward research; core areas of Software Technology and Engineering and outward research; multi-disciplinary, inter-disciplinary, and applications will be covered during these events.

The conference has solicited and gathered technical research submissions related to all aspects of major conference themes and tracks. All the submitted papers in the proceeding have been peer

reviewed by the reviewers drawn from the scientific committee, external reviewers and editorial board depending on the subject matter of the paper. Reviewing and initial selection were undertaken electronically. After the rigorous peer-review process, the submitted papers were selected on the basis of originality, significance, and clarity for the purpose of the conference. The selected papers and additional late-breaking contributions to be presented as lectures will make an exciting technical program. The conference program is extremely rich, featuring high-impact presentations.

The high quality of the program – guaranteed by the presence of an unparalleled number of internationally recognized top experts – can be assessed when reading the contents of the program. The conference will therefore be a unique event, where attendees will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other fields. The program has been structured to favor interactions among attendees coming from many diverse horizons, scientifically, geographically, from academia and from industry. Included in this will to favor interactions are social events at prestigious sites.

We would like to thank the program chairs, organization staff, and the members of the program committees for their work. Thanks also go to the editors for their wonderful editorial service to this proceeding.

We are grateful to all those who have contributed to the success of ICSTE 2011. We hope that all participants and other interested readers benefit scientifically from the proceedings and also find it stimulating in the process. Finally, we would like to wish you success in your technical presentations and social networking.

We hope you have a unique, rewarding and enjoyable week at ICSTE 2011 in Kuala Lumpur, Malaysia.

With our warmest regards,

The Organizing Committees
August 12-14, 2011
Kuala Lumpur, Malaysia

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