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Preface

Driven by the rapid growth of the computer, communication and portable consumer electronics, the chip density grows beyond thousand millions of transistors, fields of Computational Electronics and Computational Electromagnetics are facing new challenges in mathematical models, numerical methods, simulation techniques, and computer-aided design and manufacturing software.

We would like to use this special issue to report the recent important advances in the area of scientific computing in electronics engineering. The purpose of this special issue is for academics and industrial professionals to present their recent advances, ideas and results and to exchange experiences in modeling, simulation, optimization, and other computational support for problems in electronic, electrical and computer engineering. This issue includes not only selected best papers from The 2006 Workshop on Scientific Computing in Electronics Engineering (http://ymlabcad03.eic.nctu.edu.tw/wscee06/) held in conjunction with International Conference on Computational Science (http://www.iccs-meeting.org/iccs2006/index.html, ICCS 2006) in The University of Reading, UK on 28–31 May 2006, but also papers applied for this call for papers. The ICCS 2006 was organized by The University of Reading, Universiteit van Amsterdam, and The University of Tennessee and was endorsed by International Association for Mathematics and Computers in Simulation (IMACS), Society for Industrial and Applied Mathematics, and the UK e-Science Programme. There were a large number of paper submissions, not only from the Asia Pacific, but also from Europe and North America. All submissions and selected best papers were reviewed by at least three reviewers on relevance and technical contents on basis of papers. It was extremely difficult to select the presentation in the special issue because there were many excellent and interesting submissions. In order to allocate as many papers as possible and keep the high quality of the special issue, we finally decide to accept 17 papers in the special issue. We believe all of these papers and topics, ranging from nanoelectronics to computer and communication engineering, will not only provide novel ideas, new results, work in progress and state-of-the-art techniques in this field, but also stimulate the future research activities in the area of scientific computing in electronics engineering.

The represented topics and papers are certainly not an exhaustive representation of the world of current scientific computing in electronics engineering. Nonetheless, they represent the rich and many-faceted knowledge, that we have the pleasure of sharing with the readers. We would like to thank the authors for their excellent contributions and patience in assisting us. Finally, the fundamental work of all reviewers on these papers is also very warmly acknowledged. I would like to thank the Editor-in-Chief of Mathematics and Computers in Simulation, Professor Dr. Robert Beauwens for his support and all the Associated Guest Editors of this issue.

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