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Preface

This five-volume set was compiled following the 2006 International Conference on Computational Science and its Applications, ICCSA 2006, held in Glasgow, UK, during May 8–11, 2006. It represents the outstanding collection of almost 664 refereed papers selected from over 2,450 submissions to ICCSA 2006.

Computational science has firmly established itself as a vital part of many scientific investigations, affecting researchers and practitioners in areas ranging from applications such as aerospace and automotive, to emerging technologies such as bioinformatics and nanotechnologies, to core disciplines such as mathematics, physics, and chemistry. Due to the shear size of many challenges in computational science, the use of supercomputing, parallel processing, and sophisticated algorithms is inevitable and becomes a part of fundamental theoretical research as well as endeavors in emerging fields. Together, these far-reaching scientific areas contributed to shaping this conference in the realms of state-of-the-art computational science research and applications, encompassing the facilitating theoretical foundations and the innovative applications of such results in other areas.

The topics of the refereed papers span all the traditional as well as emerging computational science realms, and are structured according to the five major conference themes:

- Computational Methods, Algorithms and Applications
- High-Performance Technical Computing and Networks
- Advanced and Emerging Applications
- Geometric Modeling, Graphics and Visualization
- Information Systems and Information Technologies

Moreover, submissions from 31 workshops and technical sessions in areas such as information security, mobile communication, grid computing, modeling, optimization, computational geometry, virtual reality, symbolic computations, molecular structures, Web systems and intelligence, spatial analysis, bioinformatics and geocomputations, are included in this publication. The continuous support of computational science researchers has helped ICCSA to become a firmly established forum in the area of scientific computing.

We recognize the contribution of the International Steering Committee and sincerely thank the International Program Committee for their tremendous support in putting this conference together, the near 800 referees for their diligent work, and the IEE European Chapter for their generous assistance in hosting the event.

We also thank our sponsors for their continuous support without which this conference would not be possible.

Finally, we thank all authors for their submissions and all invited speakers and conference attendants for making the ICCSA Conference truly one of the premium events on the scientific community scene, facilitating exchange of ideas, fostering new collaborations, and shaping the future of computational science.

May 2006

Marina L. Gavrilova
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on behalf of the co-editors
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