

Preface

This proceeding contains the accepted papers from The 2013 2nd International Conference on Civil, Architectural and Hydraulic Engineering (ICCAHE2013). The first of this conference was held at the Zhangjiajie, China on 10-12 August 2012. Following the success of the first conferences, The second of this conference series (ICCAHE 2013) was held in Zhuhai, China, on July 27-28 2013. This conference series is a forum for enhancing mutual understanding between scientists, engineers, policymakers and experts in the civil, architectural and hydraulic engineering field. The theme of this conference is “innovation in construction”. This proceeding is enriched by contributions from many experts representing many industry and academic establishments worldwide. Authors from more than 30 different countries have pooled their rich multidisciplinary up-to-date knowledge, in order to share their invaluable experience with the community.

All papers published in this volume have been peer reviewed through processes administered by the proceedings editors. Reviews were conducted by expert referees to the professional and scientific standards. This book covers the subject areas of Sustainable City and Regional Development, Environmental Engineering and Environmental Protection, Architectural Design and Its Theory, Renewable Energy, Low Carbon, Energy Saving in Building and Research of Urban Living Environment, Landscape Planning and Design, Urban Planning and Design, Transportation Planning, Traffic Control and Logistics Engineering, Transportation Machinery, Engineering Management and Engineering Education, Computer Applications and Information Technologies.

We would like to express our deep gratitude to all the keynote speakers, authors, referees, exhibitors, technical co-sponsoring organizations, committee members, and many others on whom the success of this prestigious event depends.

The editors

The 2013 2nd International Conference on
Civil, Architectural and Hydraulic Engineering
(ICCAHE 2013)

Conference Organization

Chairman

Academician Prof. Kejian Ma, Guizhou University, China

International Scientific Committee

Dr. Ahmed Sarhan, Malaya University, Malaysia

Dr. Gui Wang, The University of Queensland, Australia

Dr. Scott T. SMITH, Hong Kong University, Hong Kong

Dr. Sreenivasan M, SR Technical University, IN

Dr. Tianjian Ji, The University of Manchester, UK

Prof. Abdul Amir H. Kadhum, Malaysia

Prof. A. Kaveh, Iran University of Science & Technology, Iran

Prof. Aftab Mufti, University of Manitoba, Canada

Prof. Antoine E. Naaman, University of Michigan, USA

Prof. Ayman Mosallam, Univ of California Irvine, USA

Prof. B. H. V. Topping, Heriot-Watt University, Edinburgh, UK

Prof. Chao Hsun Haung, National Taipei University of Technology, Taiwan

Prof. Chiew Sing-Ping, Nanyang Technological University, Singapore

Prof. Carlos Aquino, Ritsumeikan University, Japan

Prof. David Hui, University of New Orleans, USA

Prof. Hamid Ronagh, The University of Queensland, Australia

Prof. Han-Bin Ge, Meiju University, Japan

Prof. I. E. Harik, University of Kentucky, USA

Prof. J. H. Bungey, University of Liverpool, Liverpool, UK

Prof. Jian-Fei Chen, the University of Edinburgh, UK

Prof. Jongwook Park, Sungkyunkwan University, Korea

Prof. Katsuyuki Kida, Kyushu University, JP

Prof. Ken-ichi Manabe, Tokyo Metropolitan University, Japan

Prof. Kum-Gil Sung, Inha University, Korea

Prof. Kyung-Man Moon, Korea Maritime University, Korea

Prof. K. J. Bathe, Massachusetts Institute of Technology, USA

Prof. Kang Seok Lee, Chonnam National University, South Korea

Prof. Lau Hieng Ho, Curtin University of Technology, Malaysia

Prof. Luciano Feo, University of Salerno, Italy

Prof. Lawrence C. Bank, University of Wisconsin-Madison, USA

Prof. Marcus M.K. Lee, the University of Southampton, UK

Prof. Mark G Stewart, The University of Newcastle, Australia

Prof. M. N. Soutsos, University of Liverpool, Liverpool, UK

Prof. Nangkula Utaberta, The National University of Malaysia

Prof. Ramiro Sofronie, University of Bucharest, Romania

Prof. R. Sri Ravindra rajah, University of Technology, Australia

Prof. Tim Ibell, University of Bath, UK

Prof. Tamon UEDA, Hokkaido University, Japan

Prof. TAN Kang-Hai, Nanyang Technological University, Singapore

Prof. Tan Kiang Hwee, National University of Singapore

Prof. Wen-Hsiang Hsieh, National Formosa University, Australia

Prof. Zhi-Shen Wu, Ibaraki University, Japan

Prof. Zong Woo Geem, Gachon University, South Korea

Prof. Quanxi Shao, The Commonwealth Scientific and Industrial Research Organisation of Australia

Prof. Hansong Tang, The City University of New York, USA

Prof. Shixiong Hu, East Stroudsburg University of Pennsylvania, USA

Dr. Dar Hao Chen, Texas Department of Transportation, USA

Prof. Zhouhui Yang University of Alaska Anchorage, USA

Prof. Chunsheng Cai, Louisiana State University, USA

Prof. Qiusheng Li, City University of Hong Kong

Prof. Changbo Jiang, Changsha University of Science and Technology, China

Prof. Jianguo Liang, Changsha University of Science and Technology, China

Prof. Weiliang Jin, Zhejiang University, China

prof. Xianglin Gu, Tongji University, China

Prof. Chunyu Wei, Hunan University, China

Prof. Feng Liu, Guangdong University of Technology, China

Prof. Shilang Xu, Zhejiang University, China

Prof. Shanhua Xu, Xi'an Univ. of Architecture and Tech., China

Prof. Lieping Ye, Tsinghua University, China

Prof. Jianguo Nie, Tsinghua University, China

Prof. Tiejun Zhao, Qingdao Technological University, China

Prof. Xingang Zhou, Yantai University, China

Prof. Jiru Zhang, Wuhan University of Technology, China

Prof. Chuangbin Zhou, Wuhan University, China

Prof. Xuejun Zhou, Shandong Jianzhu University, China

Prof. Guoqiang Zhang, Hunan University, China

Prof. Yibin He, Hunan University, China

Prof. Ditao Niu, Xi'an Univ. of Architecture and Tech., China

Prof. Zhiwu Yu, Central South University, China

Prof. Baihao Li, Dongnan University, China

Prof. Shuguo Liang, Wuhan University, China

Prof. Shicheng Ma, Xiangtan University, China

Prof. Bowang Chen, Hunan City University, China

Prof. Xijun Liu, Hunan University of Science and Technology, China

Prof. Shuibo Xie, Nanhua University, China

Prof. Wanlin Cao, Beijing University of Technology, China

Prof. Chaohe Chen, South China University of Technology, China

Prof. Changyu Cui, Harbin Institute of Technology, China

Prof. Yaojun Ge, Tongji University, China

Prof. Linhai Hang, Tsinghua University, China

Prof. Yong Huang, Guizhou University, China

Prof. Guoqiang Li, Tongji University, China

Prof. Lijuan Li, Guangdong University of Technology, China

Prof. Aiqun Li, Southeast University, China

Prof. Guangfan Li, Hainan University, China