

Preface

The International Conference on Structures and Building Materials (ICSBM) is the premier forum for the presentation of new advances and research results in the fields of civil engineering and building materials. This conference series bring together international scientific community, academics and practitioners, researchers and students and provide an opportunity to discuss and share recent advances in both research and practice about all aspects of building materials and diagnostics of civil engineering, building, structures and geotechnics. After the very successful previous issues ICSBM'2011 (Guangzhou, China), ICSBM'2012 (Hangzhou, China) and ICSBM'2013 (Guiyang, China), ICSBM'2014 (Guangzhou, China), and ICSBM'2015: 5th International Conference on Structures and Building Materials was held successfully in Shenzhen, China.

This book is a collection of accepted papers. All these accepted papers were subjected to strict peer-reviewing by 2-4 expert referees. The book mainly focused on geotechnical and structural engineering, monitoring and control of structures, reliability, durability and rehabilitation of structures and building materials. This book will not only provide the readers a broad overview of the latest advances but also provide the researchers a valuable summary and reference in this field.

We would like to express our sincere appreciations to all the authors for their contributions to this volume. We are indebted to all the referees for their constructive comments on the papers. Thanks are also given to Trans Tech Publications for producing this volume.

The Committee of ICSBM 2015

Conference Organization

Chairmen

Prof. Yun-Hae Kim, Korea Maritime and Ocean University, Korea

Prof. Xun Wu, Tongji University, China

Prof. Genda Chen, Missouri University of Science and Technology, USA

Prof. Husain Abbas, Chair Professor, King Saud University

Prof. Chee Khoon Ng, Universiti Malaysia Sarawak, Malaysia

Technical and Organizing Committee

Prof. Xiuli Du, Beijing University of Technology, China

Prof. Yong Huang, Guizhou University, China

Prof. Jianjun Zheng, Zhejiang University of Technology

Prof. Chaohe Chen, Hainan University, China

Prof. Weiliang Jin, Zhejiang University, China

Prof. Jianguo Nie, Tsing Hua University, China

Prof. Bo Wu, South China University of Technology, China

Prof. Shilang Xu, Zhejiang University, China

Prof. Yiqiang Xiang, Zhejiang University, China

Prof. Jianjun Zheng, Zhejiang University of Technology

Prof. Boyang Ding, Zhejiang University of Technology

Prof. Minyun Hu, Zhejiang University of Technology

Prof. Zhiyong Dong, Zhejiang University of Technology

Prof. Xinjun Zhang, Zhejiang University of Technology

Prof. Fuying Liu, Zhejiang University of Technology

Academician Prof. Wei Sun, Southeast University, China

Prof. Ailin Zhang, Beijing University of Technology, China

Prof. Weiming Yan, Beijing University of Technology, China

Prof. Bin Xu, Hunan University, China

Prof. Feng Fan, Harbin Institute of Technology, China

Prof. Lijuan Li, Guangdong University of Technology

Prof. Yiqiang Xiang, Zhejiang University, China

Prof. Peiyu Yan, Tsinghua University, China

Prof. Feng Liu, Guangdong University of Technology

Prof. Jun Deng, Guangdong University of Technology

Prof. Jianxun Ma, Xi'an Jiaotong University, China

Prof. Jichao Zhang, Guangzhou University, China

Prof. Linhai Han, Tsinghua University, China

Prof. Wenguang Liu, Shanghai University, China

Prof. Yanpeng Zhu, Lanzhou University of Technology, China

Prof. Yun Zhou, Guangzhou University, China

Prof. Zhengliang Li, Chongqing University, China

Prof. Zhihua Chen, Tianjin University, China

Prof. Guangfan Li, Hainan University, China

Prof. Jiping Hao, Xi'AN Univ. of Architecture and Tech., China

Prof. Jihong Ye, Southeast University, China

Prof. Zixiong Guo, Hua Qiao University, China

Prof. Xuejun Zhou, Shandong Jianzhu University, China

Prof. Ayman Mosallam, Univ of California Irvine, USA

Prof. Aftab Mufti, University of Manitoba, Canada

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

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

Prof. Aftab Mufti, University of Manitoba, Canada

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

Prof. David Hui, University of New Orleans, USA

Prof. Faris Albermani, University of Queensland, Australia

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-G. Teng, Hong Kong Polytechnic University, Hong Kong

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

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

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

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

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

Prof. Luciano Feo, University of Salerno, Italy

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

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

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

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

Prof. Ramiro Sofronie, University of Bucharest, Romania

Prof. Steve.G.Millard, University of Liverpool, UK

Dr.Tianjian Ji, The University of Manchester, UK

Prof. Tamon UEDA, Hokkaido University, Japan

Prof. Tan Kiang Hwee, National University of Singapore

Prof. Tim Ibell, University of Bath, UK

Prof. Zong Woo Geem, iGlobal University, USA

Prof. Zhi-Shen Wu, Ibaraki University, Japan