

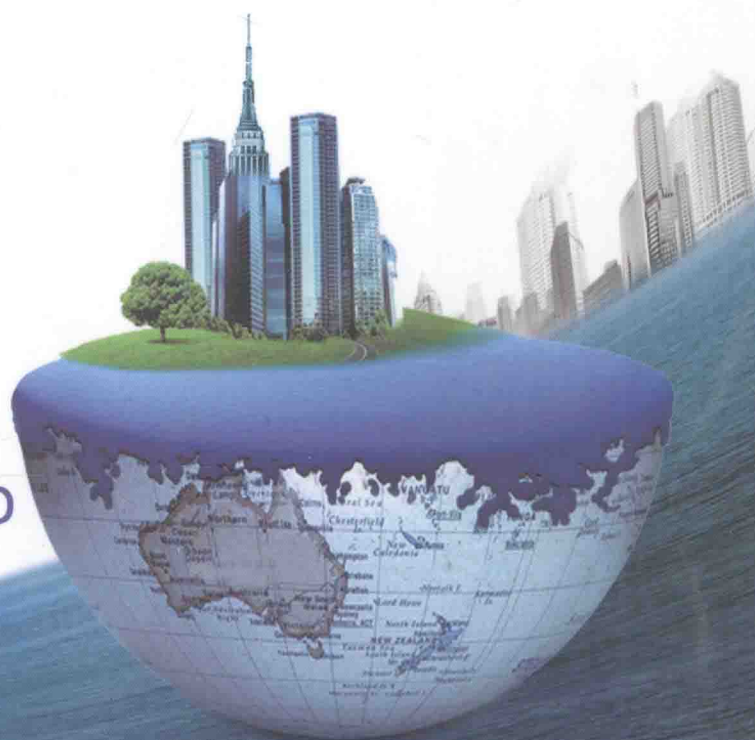
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Proceedings of the 5th International Symposium on
Innovation & Sustainability of
Structures in Civil Engineering

July 6-7, 2013, Harbin, China

(Volume II)

Edited by
Hui Li · Jie Li
Zhishen Wu · Anxin Guo



Harbin Institute of Technology Press

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PREFACE

Innovation & sustainability of structures are emerging issues in civil engineering recent years. The International Symposium on Innovation & Sustainability in Civil Engineering is dedicated to promoting related research and practice. As the on-going series symposia which were held sequentially in 2005 (Nanjing, China), 2007 (Shanghai, China), 2009 (Guangzhou, China) and 2011 (Xiamen, China), the objective of this symposium (ISISS-2013) is still to provide an international forum for researchers, specialists, professionals and public administrators and for all concerned with the promotion and exchange on innovation in civil engineering, especially for sustainability of structures and disaster prevention & mitigation. The symposium is aimed at presenting and publishing the most recent research & development on innovative materials, methodologies and technologies, intelligent structures, structural health monitoring, structural safety and durability, structures and systems with high performance and sustainable capacity. ISISS-2013 is organized by the School of Civil Engineering, Harbin Institute of Technology, and is supported by the National Natural Science Foundation of China (NSFC), American Society of Civil Engineers (ASCE), International Society for Structural Health Monitoring of Intelligent Infrastructure (ISHMII), China Civil Engineering Society (CCES) and China Society of Vibration Engineering (CSVE). On behalf of the Organizing Committee of the International Symposium on Innovation & Sustainability in Civil Engineering (ISISS-2013), we would like to welcome professionals involved in the related fields in civil engineering from all over the world to the City of Harbin in China on July 6-7, 2013 for ISISS-2013.

The Proceedings of ISISS-2013 contain the papers of invited keynote and plenary lectures from more than 18 distinguished international experts and technical presentations in 8 professional sessions under the topics of Structural Analysis, Structural Health Monitoring, Structural Control, System ID & Damage Detection, Wind Engineering, Materials & Structures, Earthquake Engineering, and Durability of Structures. The proceedings of ISISS-2013 highlight the state-of-the-art innovations in these fields. ISISS-2013 has received enthusiastic responses from the worldwide. 118 full papers were accepted for publish in the proceedings.

We would like to express our sincere thanks to all the members of the International Scientific Committee, the International Advisory Committee as well as the Organizing Committee, whose dedication is the very important for the success of ISISS-2013. Thanks are due to all the contributors to the proceedings for their careful preparations of their manuscripts and all the invited keynote and plenary speakers for their special strong support, which makes the Proceedings of ISISS-2013 with high level quality. We sincerely hope that all the participants to ISISS-2013 will have a good opportunity to meet colleagues from the world for technical and scientific discussions and enjoy their stays in Harbin when attending ISISS-2013.

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Structural Control

