

# Preface

The 2nd International Conference on Civil Engineering and Transportation took place in Guilin, China, October 27-28, 2012. The impact of construction technology and transport infrastructure development is known to be significant on the economy of any country. Therefore, the International Conference on Civil Engineering and Transportation is aspired to promote construction practices and create awareness among different industry professionals. And the main aim of this conference is to bring together academics and other professionals from all over the world, for the presentation and exchange of their thoughts and experiences on concepts, trends and practices in civil engineering and advanced transportation fields. The conference is intended to offer a stimulating environment to encourage discussion and exchange of ideas leading to the advanced construction technology and transportation.

All the papers in the conference proceedings have been undergone the intensive review process performed by the international technical committee, and only accepted papers are included. This volume comprised the selected papers from the subject areas of architectural design and its theory; urban planning and design; sustainable city and regional development; building materials and processing technology; renewable energy and building energy saving; building ecological environment; environmental engineering and environmental protection; transportation planning; construction and operation organization; its theory and applications; modern logistics system planning and optimization; traffic control and information technology; urban transportation planning and management; and vehicle engineering.

We would like to acknowledge and give special appreciation to our keynote speakers for their valuable contribution, our delegates for being with us and sharing their experiences, and our invitees for participating in ICCET 2012. We would also like to extend my appreciation to the steering Committee and the International Scientific Committee for the devotion of their precious time, advice and hard work to prepare for this Conference.

***The editors***

The 2nd International Conference on  
Civil Engineering and Transportation  
(ICCET 2012)

**Organized by:**

Liaoning Technical University, China

**Conference Organization**

**Chairman**

Prof. Yishan Pan, Liaoning Technical University, China

**International Scientific Committee**

Prof. Longsheng Bao, Shenyang Jianzhu University, China

Prof. Xiangdong Zhang, Liaoning Technical University, China

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

Prof. Xianglin Gu, Tongji University, China

Prof. Xiating Feng, Institute of Rock and Soil Mechanics, CAS

Prof. Hongnan Li, Dalian University of Technology, China

Prof. Zhihua Chen, Tianjin University, China

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

Prof. Shucui Li, Shandong University, China

Prof. Lai Wang, Shandong University of Science and Technology

Prof. Xin'gang Zhou, Yantai University, China

Prof. Xuejun Zhou, Shandong Jianzhu University, China

Prof. Feng Fan, Harbin Institute of Technology, China

Prof. Luciano Feo, University of Salerno, Italy

Prof. Han-Bin Ge, Meiju University, Japan

Prof. Haiyan Guo, Ocean University of China  
Prof. Zong Woo Geem, iGlobal University, USA  
Prof. Linhai Han, Tsinghua University, China  
Prof. Yong Huang, Guizhou University, China  
Prof. Jiping Hao, Xi'an University of Architecture and Technology, China  
Prof. I. E. Harik, University of Kentucky, USA  
Prof. David Hui, University of New Orleans, USA  
Prof. Tan Kiang Hwee, National University of Singapore  
Prof. Tim Ibell, University of Bath, UK  
Dr. Tianjian Ji, The University of Manchester, UK  
Prof. A. Kaveh, Iran University of Science & Technology, Iran  
Prof. Guoqiang Li, Tongji University, China  
Prof. Lijuan Li, Guangdong University of Technology, China  
Prof. Shucai Li, Shandong University, China  
Prof. Zhongxian Li, Tianjin University, China  
Prof. Qiusheng Li, Hong Kong City University, Hong Kong  
Prof. Kang Seok Lee, Chonnam National University, South Korea  
Prof. Marcus M.K. Lee, the University of Southampton, UK  
Prof. Zhengliang Li, Chongqing University, China  
Prof. Zhengnong Li, Hunan University, China  
Prof. Guangfan Li, Hainan University, China  
Prof. Xiliang Liu, Tianjin University, China  
Prof. Yew-Chaye Loo, Griffith University, Australia  
Prof. Yaozhi Luo, Zhejiang 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. Yongjiu Shi, Tsinghua University, China  
Prof. Xingping Shu, Hunan University, China

Prof. Ramiro Sofronie, University of Bucharest, Romania  
Prof. M. N. Soutsos, University of Liverpool, Liverpool, UK  
Prof. Mark G Stewart, The University of Newcastle, Australia  
Prof. Dasui Wang, Shanghai Xiandai Architechral Design(Group) Co.,Ltd.  
Prof. B. H. V. Topping, Heriot-Watt University, Edinburgh, UK  
Prof. Tamon UEDA, Hokkaido University, Japan  
Prof. Guangyue Wang, Shandong University, China  
Prof. Lai Wang, Shandong University of Science and Technology, China  
Prof. Yan Wang, Qingdao Technological University, China  
Prof. Jinfeng Wang, Huaqiao University, China  
Prof. Zhi-Shen Wu, Ibaraki University, Japan  
Prof. Shi Yan, Shenyang Jianzhu University, China  
Dr. Scott T. SMITH, Hong Kong University, Hong Kong  
Prof. J-G. Teng, Hong Kong Polytechnic University, Hong Kong  
Prof. Yan Xiao, Hunan University, China  
Prof. Zhixin Yan, Lanzhou University, China  
Prof. Yanzhen Yu, Jinan University, China  
Prof. Qilin Zhang, Tongji University, China  
Prof. Xin Zhang, Shandong Jianzhu University, China  
Prof. Yigang Zhang, Beijing University of Technology, China  
Prof. Jincheng Zhao, Shanghai Jiaotong University, China  
Prof. Xin'gang Zhou, Yantai University, China  
Prof. Xuejun Zhou, Shandong Jianzhu University  
Prof. Yanpeng Zhu, Lanzhou University of Technology, China  
Prof. Chaoying Zou, Harbin Institute of Technology, China  
Prof. Jiru Zhang, Wuhan University of Technology, China  
Prof. Chuangbin Zhou, Wuhan University, China

## **Local Organizing Committee**

Prof. Xiangdong Zhang, Liaoning Technical University, China