

Preface

This book contains the accepted and presented paper at the 4th International conference on Textile Engineering and Materials (ICTEM 2014), held on August 23th-24th 2014 at Shenzhen, China. It was the fourth conference in this series; the first one was in 2011 in Tianjin, the second one was in 2012 in Changsha, and the third one was in 2013 in Dalian. The general purpose of this conference is to provide a forum for the presentation and discussion of the latest research and technology on all aspects of textiles and materials. The topics addressed in this publication span the entire spectrum of research to applications for textile technology and textile materials. This book contains the accepted manuscripts from the areas of Textile Science, Technology and Aesthetics, Textile Industry Development, Management and Innovation, Apparel Design and Manufacturing, Merchandising and Industrial Development, Textile Materials, Processing, Testing and Application, Materials and Processing Technology, Mechanical Engineering and Industrial Engineering, Computer Applications in Industry.

We hope that you will enjoy the excellent work of our many authors and this volume brings you some new ideas and understanding of the magical textile technologies and textile composites world.

The Organizing Committee of ICTEM 2014

Conference Organization

Chairmen

Prof. Laijiu Zheng, Dalian Polytechnic University, China

Prof. Kuroda, Gunma University, Japan

Prof. Huawu Liu, Tianjin Polytechnic University, China

Technical and Organizing Committee

Prof. Weixing Chen, Xi'an Technological University, China

Prof. Jiwei Cai, Hebei United University, China

Prof. Wenbo Du, Beijing University of Technology, China

Prof. Huili Ding, Hebei University of Technology, China

Prof. Xianjin Yu, Shandong University of Technology, China

Prof. Ming Dong, Shanghai Jiao Tong University, China

Prof. Xiaoxing Feng, Hebei University of Technology, China

Prof. Wenzhi Fu, Jilin University, China

Prof. Zhengping Fang, Zhejiang University, China

Prof. Jian Gao, Guangdong University of Technology, China

Prof. Jing Guo, Dalian Polytechnic University, China

Prof. Kai Gu, Beijing Institute of Petrochemical Technology

Prof. Yin Biao Guo, Xiamen University, China

Prof. Zhaohui Huang, China University of Geosciences, China

Prof. Junjie Hao, University of Science & Technology Beijing, China

Prof. Julong He, Yanshan University, China

Prof. Xingang Hou, Lanzhou University of Technology, China

Prof. Jingtao Han, University of Science & Technology Beijing, China

Prof. Lin He, Guizhou University, China

Prof. Xiaoming Jia, Hebei United University, China

Prof. Xiaolin Jia, Zhengzhou University, China

Prof. Zhenglian Jiang, Research Institute, Baosteel, China

Prof. Sihai Jiao, Research Institute, Baosteel, China

Prof. Shanqing Li, Research Institute, Baosteel, China

Prof. Xianghua Liu, Northeastern University, China

Prof. Jiacheng Liu, Tianjing University, China

Prof. Kaiqi Liu, Iron&Steel Reserch Institute, China

Prof. Yaqing Liu, North University of China

Prof. Jialu Li, Tianjin University of Technology, China

Prof. Yungang Li, Hebei United University, China

Prof. Dehong Lu, Kunming University of Science and Technology

Prof. Baochun Lu, Nanjing University of Science and Technology

Prof. Chenxu Lu, Insti. of Process Eng., Chinese Academy of Science

Prof. Yongcheng Lin, Central South University, China

Prof. Gaifei Peng, Beijing Jiaotong University, China

Prof. Dianli Qu, University of Science and Technology Liaoning

Prof. Junan Shen, Georgia Southern University, USA

Prof. Wenlei Sun, Xinjiang University, China

Prof. Junyou Shi, Qingdao University of Science&Technology,China

Prof. Zhiming Shi, Inner Mongolia University of Technology, China

Prof. Yi Shen, Hebei United University, China

Prof. Xiaoming San, Hebei United University, China

Prof. Xitang Wang, Wuhan University of Science and Technology

Prof. Jun Wang, Northeastern University, China

Prof. Qiang Wang, University of Jinan, China

Prof. Pengcheng Wang, Inner Mongolia University of Technology, China

Prof. Mingzhi Wang, Yanshan University, China

Prof. Ming Wen, Hebei University of Technology, China

Prof. Kaiming Wu, Wuhan University of Science and Technology

Prof. Guoqing Xiao, xi'an University of Architecture and Technology

Prof. Peiyu Yan, Tsinghua University, China

Prof. Xiaoyan Yuan, Tianjin University, China

Prof. Shao Hui Yin, Hunan University, China

Prof. Rong Zhu, University of Science & Technology Beijing , China

Prof. Daoyuan Yang, Zhengzhou University, China

Prof. Zepeng Zhang, China University of Geosciences, China

Prof. Chun Liang Zhang, Guangzhou University, China

Prof. Jianmin Zeng, Guangxi University, China

Prof. Ping Zou, Northeastern University, China

Prof. Shihong Zhang, The Institute of Metal Research, CAS

Prof. Changsheng Zhao, Sichuan University, China

Prof. AKM Nurul Amin, International Islamic University, Malaysia

Prof. Carlos Caceres, The University of Queensland, Australia

Dr. Chunsheng Lu, Curtin University of Technology, Australia

Dr. Dongbin Wei, University of Wollongong, Australia

Prof. Geun Jo Han, Dong-A Univeristy, Korea

Dr. Gui Wang, The University of Queensland, Australia

Prof. Jong Kook Lee, Chosun University, Korea

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

Prof. Jeng-Haur Horng, National Formosa University, Taiwan

Prof. Jia-Horng Lin, Feng Chia University, Taiwan

Prof. Indra Putra Almanar, Universiti Sains Malaysia

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

Dr. Mark Fong, Hong Kong Industrial Technology Research Centre

Prof. P. S. Pa, National Taipei University of Education, Taiwan

Prof. Sagar Kamarthi, Northeastern University, USA

Prof. Shahrum Abdullah, University Kebangsaan Malaysia, Malaysia

Prof. Toshio Haga, Osaka Institute of Technology, Japan
Prof. Walid Mahmoud Shewakh, Beni Suef university, Egypt
Prof. Yun-Hae Kim, Korea Maritime University, Korea
Dr. Yuantong Gu, Queensland University of Technology,
Prof. Yu-Shiang Wu, China Univerisity of Sci. and Tech., Taiwan
Prof. Heinz-Gunter, Brokmeier, Technische Universitat Clausthal, Germany
Prof. Zhengyi Jiang, University of Wollongong, Australia
Prof. Yun-Hae Kim, Korea Maritime University, Korea
Prof. Christian Kloc, Nanyang Technological University, Singapore
Prof. Jacques Noudem, CRISMAT laboratory, France

Local Organizing Committee

Chair

Prof. Laijiu Zheng, Dalian Polytechnic University, China

Member

Prof. Kuroda, Gunma University, Japan

Prof. Jihui Wang, Dalian Polytechnic University, China

Prof. Yanping Peng, Dalian Polytechnic University, China

