

Preface

The 2012 2nd International Conference on Materials and Products Manufacturing Technology (ICMPMT 2012) took place in Guangzhou, China, September 22-23, 2012. This conference is co-organized by Inner Mongolia University of Technology, Korea Maritime University and Queensland University of Technology. This conference series provides a forum for accessing to the up-to-date knowledge from both industrial and academic worlds and allows for the free exchange of ideas and challenges faced by these two key stakeholders and encourage future collaboration between these groups.

Following evaluation and feedback by the International Scientific Committee, accepted papers are selected for publications in those volumes. Studies presented in this book cover these topics: composites, micro / nano materials and technology, steel and iron and technology, ceramic, metal alloy materials, polymer materials and technology, physics and chemistry materials and technology, building materials, energy materials and fuel technology, environmental friendly materials and waste recycling, biomaterials, chemical materials and processes, thin films, earthquake resistant structures, materials and design, surface engineering/coatings, modeling, analysis and simulation, materials forming and processes, materials machining, welding & joining, mechanical behavior & fracture , tooling testing and evaluation of materials.

We would like to express our sincere thanks to all participants for their contributions and stimulating discussions. We thank the conference session chairmen for their help and assistance in defining the program of presentations. We are also grateful to the committee for their hard work.

The editors

The 2nd International Conference on
Materials and Products Manufacturing Technology
(ICMPMT 2012)

Organized by:

Inner Mongolia University of Technology

Korea Maritime University

Queensland University of Technology

Conference Organization

Chairmen

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

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

Prof. Prasad Yarlagadda, Queensland University of Technology, Australia

International Scientific Committee

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

Prof. Xiangdong Liu, Inner Mongolia University of Technology, China

Prof. Yongquan Han, Inner Mongolia University of Technology, China

Prof. Junhui Dong, Inner Mongolia University of Technology, China

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

Prof. Liqun Ai, Hebei United University, China

Prof. Qingyou Liu, Southwest Petroleum University, China

Prof. Zheng Liang, Southwest Petroleum University, China

Prof. Xiaodong Zhang, Southwest Petroleum University, China

Prof. Zhijiu Ai, Southwest Petroleum University, China

Prof. Yongze Zhang, Baoji Oilfield Machinery Co.,LTD

Prof. Hong Zhang, China University of Petroleum

Prof. Jinglong Bu, Hebei United University, China

Prof. Daolun Chen, Ryerson University, Canada

Prof. Zunce Wang, Northeast Petroleum University, China

Prof. Sizhu Zhou, Yangtze University, China

Prof. Yong Peng, Southwest Petroleum University, China

Prof. Yongjin Chen, Kunming Univ. of Science of Technology, China

Prof. Weixing Chen,Xi'an Technological 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. Junjie Hao, Beijing University of Technology, China

Prof. Julong He, Yanshan University, China

Prof. Xingang Hou, Lanzhou Uiversity of Technology, China

Prof. Jingtao Han, Beijing University of Technology, 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. Changsheng Li, Northeastern University, China

Prof. Baochun Lu, Nanjing University of Science and Technology

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

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. Mingzhi Wang, Yanshan University, China

Prof. Jiuba Wen, Henan University of Science and Technology

Prof. Ming Wen, Hebei University of Technology, China

Prof. Kaiming Wu, Wuhan University of Science and Technology

Prof. Prasad Yarlagadda, Queensland University of Technology, Australia

Prof. Peiyu Yan, Tsinghua University, China

Prof. Xiaoyan Yuan, Tianjin University, China

Prof. Shao Hui Yin, Hunan University, China

Prof. Daoyuan Yang, Zhengzhou University, 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
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, Au
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

Conference Secretary

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