Preface

With the rapid development of science and technology, advanced materials and manufacturing attract more attention in scientific and engineering fields. The International Conference on Materials and Manufacturing (ICMM 2011) aims to provide a forum for the joint of academic research and industry application, to share development experiences and discuss innovative achievements in the field of materials and manufacturing. ICMM 2011 will be held on Sep. 7-9th 2011 in Jinzhou city, sponsored by Liaoning University of Technology, China.

This proceeding tends to collect the latest advancement and applications of materials and manufacturing. It covers advanced structural materials, functional materials, composite materials, advanced manufacturing process and technology and vehicle engineering technology. Major areas of advanced structural materials include iron and steel, nonferrous alloy, building materials and the other related classification; functional materials emphasize biomedical material, energy material, ecological environment material, smart material and electronic material; Composite materials involve the mechanism investigations and application progresses on both metal matrix composites and non-metallic matrix composites; Advanced manufacturing process and technology covers the entire range of basic and applied aspects of the synthesis and characterization, modeling, processing and application of advanced engineering materials; Vehicle Engineering is an important engineering technology field, focusing on the theory, design and technology problems of mobile machines on land including automobile, tractor, locomotive vehicle, military vehicle and engineering vehicles. This proceeding contains a selection of 301 papers from 672 papers submitted to ICMM from universities and industries all over the world. All of accepted papers were subjected to strict peer-reviewing by 2-3 expert referees. The papers have been selected for this volume due to their high quality and the relevance to this conference.

We gratefully appreciate the support from scientific researchers at home and abroad, college teachers and students as well as R&D employees in the industry circles to participate and contribute positively. We are indebted to Material Science institute of the Chinese Society for Metals, Liaoning University of Technology China; we express our gratitude to all the referees for their time and dedication. Thanks are also given to Trans Tech Publications for producing this volume.

Prof. Jianzhong Wang and Prof. Jingang Qi

On behalf of the organizing committee of ICMM2011

31st May 2011
Organizer
Liaoning University of Technology, China

Conference Chair:
Prof. Hui He, Liaoning University of Technology, China

Advisory board:
Jimei Xiao, (Academician, Chinese Academy of Sciences, China)
Bangchun Wen, (Academician, Chinese Academy of Sciences, China)
Guodong Wang, (Academician, Chinese Academy of Engineering, China)
Zuyao Xu, (Academician, Chinese Academy of Sciences, China)
Hengzhi Fu, (Academician, Chinese Academy of Sciences, China)
Yuquan Song, (Academician, Chinese Academy of Sciences, China)
Sam Zhang (Professor, Nanyang Technological University, Singapore)
Rian Dippennaar (Professor, The University of Wollongong, Australia)
Fuxing Yin (Chief Researcher, National Institute for Materials Science, Japan)
Jorg Wallaschek (Professor, Paderborn University, Germany)
Chang-Myung Lee (Professor, University of Ulsan, Korea)

Scholarship Committee Chairs:
Prof. Jianzhong Wang, Liaoning University of Technology, China
Prof. H.C. Man Hong Kong Polytechnic University, China

Scholarship Committees:
Dr. Daniel L.B. The University of Wollongong, Australia
Prof. Bingze Bai, Tsinghua University, China
Prof. Xiufang Bian, Shandong University, China
Prof. Daqiang Cang, University of Science and Technology Beijing, China
Prof. Zhenduo Cui, Tianjin University, China
Prof. Chuang Dong, Dalian University of Technology, China
Prof. Shulin Duan, Dalian Maritime University, China
Prof. Linxiu Du, Northeastern University, China
Prof. Hong Zeng, Liaoning University of Technology, China
Prof. Qijie Zhai, Shanghai University, China
Prof. Naiqin Zhao, Tianjin University, China
Researcher Yizhou Zhou, Institute of Metal Research, Chinese Academy of Sciences, China
Prof. Cangfu Zong, Jilin University, China
Dr. Shigemi Kohiki. Kyushu Institute of Technology, Japan.

Organizing Committee Chair:
Prof. Weimin Li, Liaoning University of Technology, China

Organizing Committee Co-chairs:
Prof. Chengjia Shang, University of Science and Technology Beijing, China
Prof. Ping Shi, Liaoning University of Technology, China
Prof. Guang'an Zhang, Liaoning University of Technology, China

Secretary Generals:
Prof. Jingang Qi, Liaoning University of Technology, China
Prof. Deqiang Zhang, Liaoning University of Technology, China
Prof. Jing Shi, Liaoning University of Technology, China

Conference Secretaries:
Dr. Bing Wang, Liaoning University of Technology, China
Dr. Jingyuan Yu, Liaoning University of Technology, China
Dr. Guochao Qi, Liaoning University of Technology, China
Dr. Guangcan Jin, Liaoning University of Technology, China
Dr. Qiang Li, Liaoning University of Technology, China