### **Preface**

The international conference on advanced design and manufacturing engineering series provides a forum for accessing to the most up-to-date and authoritative knowledge from both industrial and academic worlds, sharing best practice in the field of advanced design and manufacturing engineering. The meeting will provide an opportunity to highlight recent developments and to identify emerging and future areas of growth in this exciting field. The first of this conference series (ADME 2011) was held in Guangzhou, China, in September 2011 with the participation of Scientists from the Asia-Pacific region, Europe and the United States. The second of this conference series (ADME 2012) was held in Taiyuan, China, in August 2012 and the third one was held in Anshan (ADME 2013), China, in July 2013. Following the success of the previous conferences, the 4th International Conference on Advanced Design and Manufacturing Engineering (ADME 2014) was taken place in Hangzhou, China, From July 26 to 27, 2014. This conference successfully brought together scientists and engineers from industry and academia and provided a forum for exchange of ideas, cooperation and future directions by means of keynote speeches, regular presentations and a round-table discussion.

All papers had undergone the careful peer-review by expert referees to the professional and scientific standards before it is selected for publications in those volumes. Studies presented in this book cover these topics: Nano Materials Science and Technology, Metals and Alloys, Steel Materials and Applications, Resin, Rubber and Polymer Materials, Optical/Electrical/Magnetic Materials and Technology, Ceramic Materials and Technologies, Composite Research and Applications, Fiber Materials, Chemical and Energy Materials and Technologies, Biomaterials and Applied Research, Materials Processing, Testing and Monitoring Technologies, Applied Mechanics, Building Materials and Construction Engineering.

We believe that this conference provided a medium for scientists and experts in the field to effectively communicate and share ideas. We would like to express our sincere thanks to all participants for their contributions and stimulating discussions. We are also grateful to keynote speakers, referees, exhibitors, committee members and many others for their patience and efforts.

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