

**Chemical Engineering  
and Material Properties**

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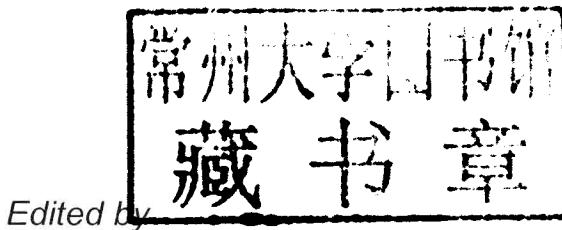
**Part 1**

Edited by  
H.M. Zhang and B. Wu

# **Chemical Engineering and Material Properties**

## **PART 1**

Selected, peer reviewed papers from the  
2011 International Symposium on  
Chemical Engineering and Material Properties  
(ISCEMP 2011),  
November 4-6, 2011, Shenyang, Liaoning, China



**H.M. Zhang and B. Wu**



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**PART 1**

Edited by  
H.M. Zhang  
B. Wu

## Preface

It is our pleasure to welcome you to 2011 International Symposium on Chemical Engineering and Material Properties (ISCEMP 2011) in Shenyang, China. ISCEMP 2011 is the first conference dedicated to issues related to chemical engineering and material properties. A major goal and feature of ISCEMP 2011 is to bring academic scientists, engineers, industry researchers together to exchange and share their experiences and research results about most aspects of chemical engineering and material properties, and discuss the practical challenges encountered and the solutions adopted.

This Conference is sponsored by Shenyang university of technology and co-sponsored by Harbin university of science and technology. Their support is very important for our conference.

We hope you will have a technically rewarding experience, and use this occasion to meet old friends and make many new ones. Don't miss the opportunity to explore in Shenyang, China. And don't forget to take a sample of the many and diverse attractions in the rest of the China.

The conference promises to be both stimulating and informative with a wonderful array of keynote and invited speakers from all over the world. Delegates will have a wide range of sessions to choose from and will have a difficult decision in deciding which sessions to attend.

The program consists of invited sessions, and technical workshops and discussions with eminent speakers covering a wide range of topics in chemical engineering and material properties. This rich program provides all attendees with the opportunities to meet and interact with one another. We hope your experience with ISCEMP 2011 is a fruitful and long lasting one. With your support and participation, ISCEMP will continue its success for a long time.

We would like to thank the organization staff, the members of the program committees and reviewers. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra helps in the review process, and the authors for contributing their research result to the conference. Special thanks go to TTP Publisher.

We wish all attendees of ISCEMP 2011 an enjoyable scientific gathering in Shenyang, China. We look forward to seeing all of you next year at the ISCEMP 2012.

L.M. Wang,  
Shenyang University of Technology, China

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