

Preface

This volume includes the 249 papers selected from the 5th International Conference on Physical and Numerical Simulations of Material Processing (ICPNS'07), held on Zhengzhou, China on October 23-27, 2007.

Physical and numerical simulations make it possible for materials science to go from experience-based to science-based, and from qualitative to quantitative. Physical simulations, which effectively reveal the principles of materials' structure and properties evolutions, save the time and money significantly whereas numerical simulations turn the experimentally "impossible mission" of the full description and design of various material processes into feasibility. Naturally, both simulations are gaining attention worldwide, and will be a prominent approach of materials research in the 21st century.

The International Conference on Physical and Numerical Simulations of Material Processing (ICPNS) is such a platform for timely exchange of the recent academic and experimental accomplishments in the field of physical and numerical simulations. The 5th Conference (ICPNS'2007) is co-sponsored by 34 societies and university around the world, including those from Australia, Canada, China mainland, Croatia, Finland, France, Germany, Hong Kong, India, Japan, Korea, Pakistan, Russia, Taiwan, Ukraine, UK, and the USA. During the conference, more than 500 participants from 35 countries/regions presented their research papers. These contributed papers represent the frontier in the research field of physical and numerical simulations. During the ICPNS'2007, we see the high demand to publish a special volume covering the latest research achievement in the filed.

On behalf of the organizing committee, I would like to express my deepest appreciation to the 42 referees from home and abroad for their diligent work on paper review. Likewise, I owe lots of gratefulness to Editor-in-Chief Thomas Wohlbier for his hard work.

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