

Preface

There are continuous demands for high performance materials with enhanced properties. In the development of these materials and their processing methods, physical and numerical simulations have important roles to play. By using best current knowledge and modern facilities, these simulation techniques can enable the rapid and economic evaluation and prediction of high temperature processes and applications.

In order to assist the exchange of information concerning the latest achievements in the field of physical and numerical simulation methods and their applications in the processing of advanced materials, the International Conference on Physical and Numerical Simulation of Materials Processing has been held regularly over the past two decades. Following on from its six predecessors in Harbin (1990), Hainan (1997), Beijing (1999), Shanghai (2004), Zhengzhou (2007) and Guilin (2010), this conference has now been held outside China for the first time - in Oulu, Finland. The local organizer of the conference is the Centre for Advanced Steels Research (CASR) at the University of Oulu, where physical simulation has been a key activity in the development of new advanced low-alloy and stainless steel grades for the last two decades.

In this conference, the number of papers is more than a hundred and the number of attendants about 200. These numbers are naturally less than those for the recent conferences in China, but they meet our expectations and targets. The papers deal extensively with physical and numerical simulation, the modeling of processes, as well as recent advances in the processing of various materials, e.g., steels, light metals, composites, etc.

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