Preface

Since the First Conference on the PSTAM or Platform Science and Technology for Advanced Magnesium Alloys (Nagaoka International Work-Shop) in 2000, further steps have been progressing in various fields related to magnesium alloys. In addition, the worldwide network on the research and development for advanced magnesium alloys has been growing up through the activity by the priority research group on the platform science and technology for advanced magnesium alloys. This second Conference on PSTAM or PSTAM-2003 (January 27 to 30th, Osaka, Japan) is planned and executed as one of major social activities for the priority research group with aid of the Ministry of Education, Science, Culture, Sports and Technology, Japan. Through this Conference, every participant recognizes a wide spreading perspective on the academic fundamentals and industrial applications of advanced magnesium alloys. Their fatigue and mechanical properties are discussed with deep investigation on their microstructure evolution. Their plastic forming as well as their alloy development is focussed with consideration of high temperature properties. Various advancing developments in the melting and casting are keenly argued with stresses on the recycling design and process. Non-equilibrium processing is selected as a hot issue to drive a new frontier of advanced magnesium alloys. Composite design is also weighed to search for new application. Corrosion and surface modification is high-lighted to essentially modify the weak-points of magnesium alloys and to improve their corrosion and wearing resistance. New functionality is thought much to enlarge the possible extension of intrinsic functionality to magnesium alloys and compounds.

More than two hundred and fifty delegates from sixteen countries attend to this Conference. Over one hundred and fifty papers are presented and included into this Proceeding. Nine plenary and twenty-four invited lectures are on the schedule. Special spot-light is focussed to the work-shop on the automobile applications of advanced magnesium alloys. Special guest speakers are invited for hot discussion to discover what is expected when choosing the magnesium alloys as automotive parts and structural members and for strong propaganda to motivate the academic reasoning on the necessary key items in application. These volumes invoking the above contents might be a reference to guide lots of academia and industrial persons to advanced magnesium alloys and to stimulate the related research and development to magnesium alloys in future.

First, sincere thanks are distributed to each organizing committee member and staff who have been engaged in preparation for PSTAM-2003. Without their hard work, this Conference could not be held successfully and fruitfully. We wish to thank the followings for their contribution to the success of this Conference: Air Force Office of Scientific Research (AFOSR) and Asian Office of Aerospace Research and Development (AOARD). Their support is not intended to imply endorsement by the United States Federal Government. In final, we would like to express sincere gratitude to the financial support by the Grand-in-Aid for Scientific Research on the Priority Area on Platform Science and Technology for Advanced Magnesium Alloys with the contract number of #1125101 from the Ministry of Education, Science, Culture, Sports and Technology, Japan.

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