

The 5th International Symposium on Steel Science

**ISSS 2017**



November 13 -16, 2017

Kansai Seminar House, Kyoto, Japan

Edited by S. Ii, T. Furuhashi, T. Tsuchiyama and G. Miyamoto



The Iron and Steel Institute of Japan

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## Preface

ISSS 2017 is the fifth of the series of international symposia on the science of steels, which is a project launched in 2007 by the Iron and Steel Institute of Japan (ISIJ). Its aim is to provide scientists and engineers from academia and industry a forum for presenting latest results of frontier research on iron and steel and discussing them in depth.

The first symposium was held in May 2007 in Kyoto, the second in October 2009, the third in May 2012, and the fourth in November 2014 at the same place. Following the four successful meetings, the fifth symposium was organized by succeeding the traditions — oral presentations exclusively by invited speakers, brief introductions to posters, and no parallel sessions — for the sake of better communication, and by carefully selecting topics to bring good balance between academic seeds and industrial needs.

The symposium took place in November 2017 at the same venue as the last four, amid the calm atmosphere in the suburbs of old Kyoto. It was entitled ‘Characterization and design of multiscale heterostructures in advanced steels’, with its focus on such specific topics as microstructural formation in martensitic and bainitic steels, transformation kinetics, alloy partitioning, grain boundary segregation, advanced analyses of nanostructures, and theoretical/simulation studies as well as mechanical properties in high strength steels.

In the ISSS 2017, we had 78 participants from 10 countries, and also fruitful discussions among the participants. The records show that 69 scientists and 9 students attended, 58 from the host country and 20 from abroad. There were 17 oral presentations by invited speakers, and 37 poster presentations, summing up to 54.

These proceedings contain 45 papers, including those from 14 invited speakers and 31 contributions from the posters. The reader can readily sense the enthusiastic atmosphere of the symposium from the high scientific level of the research presented here. We deeply thank all participants of ISSS 2017, and hope that the proceedings will contribute to the further development of steel science and technology.

On behalf of the Organizing Committee, we wish to express our appreciation for the cooperation and encouragement of the members of the International Advisory Board. We also thank Ms Koike A. and Ms Kaise A. of Kyoto University for their help in the secretariat, and Ms Kamei S. of the ISIJ for timely guidance and efficient assistance in practical tasks. The financial supports from the Hyuga Memorial International Conference Grant and the Fund for Facilitating International Exchange of the ISIJ, and the Financial Aid for International Conferences of Kansai Regional Office of the ISIJ are gratefully acknowledged.

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April 2018

**ISSS 2017, Kansai Seminar House, Kyoto, Japan  
November 13-16, 2017**



The 2<sup>nd</sup> International Symposium on Seed Science  
ISSS 2017  
Characterization and genetic  
diversity of wild rice  
International Symposium on Seed Science  
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