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Preface

These proceedings contain the papers presented in the symposia on Microstructural Processes in Irradiated Materials (MPIM) and on Reactor Pressure Vessel (RPV) Embrittlement and Fusion Materials: Measuring, Modeling and Managing Irradiation Effects that were held in San Francisco, California, USA, from 15 February to 19 February 2009, as part of the annual meeting of The Minerals, Metals and Materials Society (TMS).

This MPIM symposium covered a wide range of processes in irradiated materials including damage production, defect properties, microstructural evolution and mechanical behavior. A particular emphasis was on the connections between state-of-the-art multiscale modeling and advanced experimental microstructural characterization, and the development of advanced oxide dispersion ferritic alloys. The symposium involved original contributions on first principles modeling of point defect and impurity properties, multiscale modeling of damage accumulation, and advanced experimental characterization techniques to characterize the microstructural evolution of irradiated and mechanically deformed materials. In total 72 presentations, including 10 invited talks, were given.

The symposium on RPV Embrittlement and Fusion Materials, involved a number of invited and contributed presentations that reviewed and acknowledged the technical contributions to the study of irradiation effects on materials made by Prof. G. Robert Odette of the University of California, Santa Barbara. The symposium involved 21 presentations.

We would like to acknowledge the Idaho National Laboratory Advanced Test Reactor National Scientific User Facility for a financial contribution to the two symposium that was used to provide reduced registration fees for students and invited contributors, as well as to thank all the participants to these symposia for their presentation, and all authors for the quality of their manuscripts, which has resulted in this issue of the Journal of Nuclear Materials containing the symposia proceedings.

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