



Preface

The Twelfth International Conference on Fusion Reactor Materials (ICFRM-12) was held December 7–12, 2005, at the Fess Parker Doubletree Hotel in Santa Barbara, California, USA. The purpose of the conference was to assemble the international fusion materials community for the presentation and discussion of current research and development results on the science and technology of fusion reactor materials. The past 25 years of focused materials research and development for fusion applications has established a substantial technology base in support of the promise of fusion energy. The imminent construction of a burning plasma experiment, ITER, has increased international attention on this area. The technology of fusion energy is rapidly reaching maturity, and recent progress in research devoted to fusion reactor materials is a major contributor to this effort. In addition, this research for fusion continues to be at the forefront of the larger materials science field.

ICFRM-12 was the latest in the ICFRM conference series that was initiated to broaden and build on the first three successful Topical Meetings on Fusion Reactor Materials held in 1979 in Miami Beach, FL; 1981 in Seattle, WA; and 1983 in Albuquerque, NM. ICFRM-1 was held in Tokyo on December 3–6, 1984 with 264 participants from 15 countries; 79 of these participants were from countries outside Japan. Interest and participation in the conference series has continued to grow, and the size and scope of the conference have increased with time. ICFRM-12 attracted 399 participants from 25 countries (104 from the USA), including 65 students. The program comprised oral presentation of 28 invited and 78 contributed papers, plus 399 contributed papers presented in poster sessions. As a result, the proceedings of ICFRM-12 encompass a comprehensive range of materials science and technology data and experience relevant to fusion system designers as they seek to construct current experiments such as ITER and design innovative solutions for future energy systems.

The preparation of manuscripts for the proceedings in the Journal of Nuclear Materials imposed rather strict constraints on the authors. Stringent page limits were set for each paper. This, along with rigorous refereeing, required most authors to carry out a substantial revision of the papers they initially submitted. As a result of the authors' and reviewers' effort, these proceedings provide a concise and condensed source of technical information that will be valuable to both the fusion and the broader materials science communities.

Conducting a well-organized conference and preparing a high quality proceedings are only possible with the collaboration, diligence, and efforts of many individuals. The editors would like to express their deepest appreciation to the authors, the reviewers, the participants, and the members of the various committees for their many contributions. Our special thanks go to the members of the local committees and the supporting staff from the University of California, Santa Barbara and the administrative staff at the Oak Ridge National Laboratory.

We look forward to seeing all of you at ICFRM-13 in Nice, France, December 9–14, 2007.

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