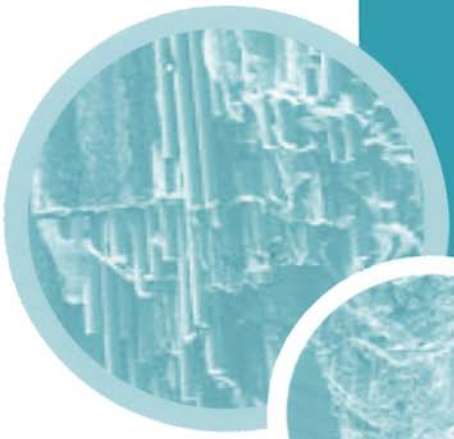
Effects of Radiation on Materials

22nd Symposium



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T. R. Allen, R. G. Lott, J. T. Busby, and A. S. Kumar, editors

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Foreword

This Special Technical Publication is a compilation of technical papers which were peer reviewed for the On-line Journal ASTM International and used as the proceedings of the 22nd Symposium on Effects of Radiation on Materials. The symposium, sponsored by ASTM Committee E10 on Nuclear Technology and Applications, was held in Boston, Massachusetts on June 8-10, 2004. The Chairs of the Symposium were Todd R. Allen, from the University of Wisconsin, Randy G. Lott, from Westinghouse Electric Company, Jeremy T. Busby, then at the University of Michigan and now at Oak Ridge National Laboratory, and Arvind S. Kumar, University of Missouri-Rolla.

Contents

Overview

Selected papers from the 22nd Symposium on the Effects of Radiation on Materials are published in this volume. The symposium, sponsored by ASTM Committee E-10 on Nuclear Technology and Applications was held in Boston, Massachusetts on June 8-10, 2004. Todd R. Allen, from the University of Wisconsin, chaired the meeting. Co-chairmen were Randy G. Lott, Westinghouse Electric Company, Jeremy T. Busby, then at the University of Michigan and now at Oak ridge National Laboratory, and Arvind S. Kumar, University of Missouri-Rolla.

This symposium series began in 1956 with a meeting jointly sponsored by E-10, then the Committee on Radioisotopes and Radiation Effects, and the Atomic Industrial Forum. The symposium in the present form, sponsored by Committee E-10, began in 1960 and became international in 1963 with the presentation of five papers of the total of eighteen from laboratories outside of the United States. At the current meeting, of the 61 papers presented, 25 came from sources outside the United States. The nearly 50% international participation in the presentations represents the truly international efforts that are ongoing in the study of radiation effects on materials.

The symposium began with a plenary lecture presented by Dr. Everett Bloom of Oak Ridge National Laboratory. One of the pioneers of the field of radiation effects, Dr. Bloom provided a history of important events in the development of the field of radiation effects and linked this history to the challenges facing the materials development in Generation IV systems.

The technical program was evenly balanced between sessions on austenitic stainless steels (17 presentations), ferritic-martensitic stainless steels (11 presentations), pressure vessel steels (15 presentations), radiation damage fundamentals (12 presentations), and ceramics and other nuclear energy system materials (6 presentations). The technical balance is indicative of the continued strength of research interest in embrittlement of pressure vessel steels, as well as the renewed interest in austenitic and ferritic-martensitic steels, as well as ceramics, for application in Generation IV systems. Heartening was the number of students and young post-doctoral researchers who presented and participated in the symposium.

The editors wish to express our gratitude to all of the reviewers, without whom the quality of this publication would not be possible, and to all the symposium participants.

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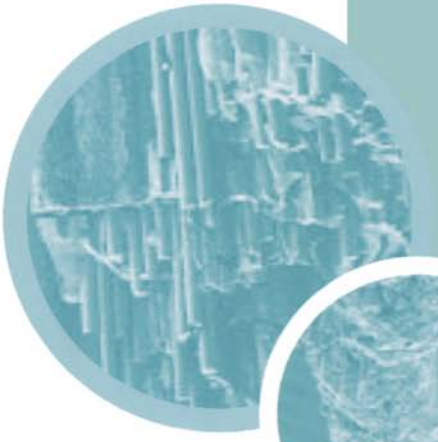

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