

# Effects of Radiation on Materials

## 23rd International Symposium

**Editors:**

Randy G. Lott and Jeremy T. Busby

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# *Effects of Radiation on Materials: 23rd International Symposium*

*Randy G. Lott and Jeremy T. Busby, editors*

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## Foreword

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This publication, *Effects of Radiation on Materials: 23rd Symposium*, contains papers presented at the aforementioned symposium held on June 13, 2006 - June 15, 2006, in San Jose, CA. The symposium sponsor was ASTM International Committee E10 on Nuclear Technology and Applications.

The symposium was chaired by Randy G. Lott and Jeremy T. Busby.

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# Overview

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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. The current meeting continued this international emphasis with ten of the eighteen papers included in this volume originating outside the United States.

The symposium hosted a special Topical Session on Fundamentals of Defect Accumulation and Deformation in Irradiated Materials honoring the work of Dr. Bachu Singh. A friend and collaborator to researchers around the world, Dr. Singh retired from Risø National Laboratory, Denmark in 2006. The breadth of Dr. Singh's contributions to the field of radiation effects was reflected in the range of topics presented in the Topical Session, which included both detailed studies of defect cascades produced during ion irradiation to studies of strain hardening mechanisms in irradiated stainless steels.

The technical program continued the Symposium's traditional strong focus on irradiation embrittlement of reactor pressure vessel steels. The papers included in this volume provide a broad perspective on the development and application of trend curves used to predict fracture toughness transition temperatures in irradiated reactor pressure vessel steels. The remaining papers in this volume represent the broad spectrum of radiation effects discussed at the Symposium. These topics covered materials ranging from erbium-tritide films to oxide dispersion strengthened (ODS) ferritic steels.

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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