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978-1-605-11360-9 - Material Challenges in Current and Future Nuclear Technologies

Karl R. Whittle, Blas P. Uberuaga, Marjorie Bertolus and Robin W. Grimes

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**MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1383**

Material Challenges in Current and Future Nuclear Technologies

EDITORS

Karl R. Whittle

Australian Nuclear Science and Technology Organisation
Kirrawee, Australia

Blas P. Uberuaga

Los Alamos National Laboratory
Los Alamos, New Mexico, U.S.A.

Marjorie Bertolus

CEA, DEN
Saint-Paul-lez-Durance, France

Robin W. Grimes

Imperial College London
London, United Kingdom



Materials Research Society
Warrendale, Pennsylvania



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PREFACE

Symposium A, “Material Challenges in Current and Future Nuclear Technologies” was held at the 2011 MRS Fall Meeting in Boston, Massachusetts, November 28 – December 2, 2011. This volume includes papers presented during the symposium. The symposium addressed current questions in nuclear materials development, such as the effects of radiation damage on core materials. At the same time, emphasis was placed on research that tried to pre-empt future issues, such as materials with applications in both the proposed GenIV fission designs and fusion reactor cores. There was also linkage made between both areas of research, as in many areas, the requirements for both future fusion and fission reactor technologies are often very similar.

The articles in this volume are separated into four broad areas:

- i) Fuel
- ii) Radiation effects
- iii) Corrosion
- iv) Structural materials

Each of the areas combines both simulation and experimental work, highlighting the cross-linkage between them and how they can be used to holistically develop new materials for nuclear technologies.

Karl R. Whittle
Blas P. Uberuaga
Marjorie Bertolus
Robin W. Grimes

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