

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1743

Materials and Radiation Effects for Advanced Nuclear Technologies

November 30-December 5, 2014
Boston, Massachusetts, USA

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-5108-0623-8

Some format issues inherent in the e-media version may also appear in this print version.

©Materials Research Society 2015

This reprint is produced with the permission of the Materials Research Society and Cambridge University Press.

This publication is in copyright, subject to statutory exception and to the provisions of relevant collective licensing agreements. No reproduction of any part may take place without the written permission of Cambridge University Press.

Cambridge University Press
Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press
32 Avenue of the Americas, New York, NY 10013-2473, USA
www.cambridge.org

Materials Research Society
506 Keystone Drive, Warrendale, PA 15086
www.mrs.org

CODEN: MRSPDH

ISBN: 978-1-5108-0623-8

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-part Internet Web sites referred to in this publication and does not guarantee that any content on such Web sites is, or will remain, accurate or appropriate.

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

In-Situ High Temperature XRD on $U_{0.54}Pu_{0.46}O_{2-x}$ A Study of the Miscibility Gap	1
<i>M. Strach, R. Belin, J.-C. Richaud, J. Rogez</i>	
Structural Analysis of $Gd_2Ce_2O_7$	7
<i>M. Patel, G. Baldinozzi, J. Aguiar, J. Valdez, S. Vogel, K. Sickafus</i>	
First-principles Study of Point Defects in Cerium Dioxide and Comparison to Uranium Dioxide	14
<i>L. Shi, E. Vathonne, M. Freyss, M. Bertolus, V. Oison, R. Hayn</i>	
Migration Barriers and Evolution of Mechanical Properties of Oxide Nanoclusters Containing Helium	20
<i>T. Danielson, C. Hin</i>	
Synchrotron X-Ray Diffraction Analysis of Gadolinium and Lanthanum Titanate Oxides Irradiated by Xenon and Tantalum Swift Heavy Ions	26
<i>S. Park, M. Lang, C. Tracy, F. Zhang, C. Trautmann, Z. Wang, R. Ewing</i>	
Effects of Low Energy Carbon Ion Implantation on the Material Properties of InAs/GaAs Quantum Dots with Variation in Capping Layer	33
<i>S. Upadhyay, A. Mandal, A. Basu, P. Singh, S. Chakrabarti</i>	
Effect of Low Energy Implantation on the Properties of Ti/Ni/Au Contacts to n-SiC	39
<i>P. Leech, A. Holland, G. Reeves, Y. Pan, M. Ridgway, P. Tanner</i>	
Energetic Ion Bombardment of Carbon Nanotubes	45
<i>G. Konesky</i>	
Neutron Detection Signatures at Zero Bias in Novel Semiconducting Boron Carbide/Pyridine Polymers	51
<i>E. Echeverria, R. James, F. Pasquale, J. Santana, M. Driver, A. Enders, J. Kelber, P. Dowben</i>	
Phase-Field Modelling of Radiation Induced Microstructures	57
<i>L. Luneville, G. Demange, V. Pontikis, D. Simeone</i>	
Phase Transition of Sigma-CrFe Under Fast Electron Irradiation	64
<i>T. Nagase, S. Anada, K. Kobayashi, H. Yasuda, H. Mori</i>	
Effects of Thermal Treatment on the Co-rolled U-Mo Fuel Foils	70
<i>J.-F. Jue, D. Keiser, T. Trowbridge, C. Breckenridge, B. Mackowiak, G. Moore, B. Rabin, M. Meyer</i>	
Molecular Dynamics Simulation of the Impact of Fission Fragment Energy Deposition on Ion Tracks in Uranium Dioxide	76
<i>J. Wormald, A. Hawari</i>	
Author Index	