Special Issue

Radiation Damage in Materials: Helium Effects

Message from the Guest Editors

Understanding radiation damage effects in materials, used in various irradiation environments, has been an ongoing challenge for several decades. Helium is one such impurity that plays an important and unique role in controlling the microstructure and properties of materials due to its virtually zero solubility in any material systems. This Special Issue, “Radiation Damage in Materials—Helium Effects”, invites review articles and full length papers on new irradiation material research activities and novel material ideas that focus on understanding He effects on microstructure evolution and thermo-mechanical properties using experimental and/or modeling approaches, where material systems include, but are not limited to, advanced structural steels for fast fission and fusion applications, and plasma facing materials, such as tungsten in fusion devices. Research related to self-irradiation damage by energetic alpha emissions in actinides, as well as in advanced nuclear waste materials, are also encouraged.

Keywords
- radiation damage
- helium bubbles
- ion irradiation
- nuclear materials

Guest Editors

Dr. Yongqiang Wang
Materials Science & Technology Division, Los Alamos National Laboratory, Los Alamos, NM 87544, USA

Dr. Khalid Hattar
Center for Integrated Nanotechnologies, Sandia National Laboratories, Albuquerque, NM 87185, USA

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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