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Effects of Neutron and Ion Irradiation on Nuclear Materials

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Deadline for manuscript submissions:

31 May 2024

Message from the Guest Editors

Dear Colleagues,

Irradiation damage is a critical issue for nuclear materials. Neutrons react with material to form various fission and transmutation products, which can seriously affect the performance of materials, such as the thermal properties, mechanical properties, corrosion resistance and other properties. In addition, ion irradiation is widely used to simulate neutron irradiation to study the irradiation behavior of materials.

This Special Issue aims to publish research on the various defects and microstructure evolution induced by neutron and ion irradiation (e.g., voids, dislocation loops, He bubbles, phase change) in different kinds of materials in nuclear systems (e.g., fuels, cladding, core structures, pressure vessels and control components for fission reactors, and the first walls for fusion reactors) and evaluate the effects of these microstructure changes on the macroscopic properties of crystalline materials. Both original research papers and review articles summarizing recent progress in this field are welcome.



mdpi.com/si/165904

Special Issue



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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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