Special Issue

Microstructure Evolution, Property and Characterization of Crystalline Materials after Ion Irradiation

Message from the Guest Editors

Crystalline materials including alloys, ceramics and composites have been widely used in nuclear reactors. Irradiation damage is a critical issue for crystalline materials, as it influences their structure stability. This Special Issue aims to characterize the various defects induced by ion irradiation (e.g., voids, dislocation loops, He bubbles) and evaluate the influence of these microstructure changes on the macroscopic properties of crystalline materials using transmission electron microscopy (TEM), nanoindentation and other advanced techniques. **Keywords:**

- ion irradiation
- microstructural characterization
- displacement damage
- irradiation defects dislocation loops
- helium bubbles
- helium embrittlement
- irradiation-induced hardening/softening
- helium embrittlement swelling
- synergistic effect between irradiation and corrosion

Discount: 200 CHF (If you need more, please contact Aries.gan@mdpi.com) Both original research papers and review articles summarizing recent progress in this field are welcome!

Guest Editors

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Deadline for manuscript submissions

closed (15 November 2022)

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About the Journal

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.

Editor-in-Chief

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