

Special Issue

Radiation Damage in Metals and Alloys

Message from the Guest Editor

This Special Issue focuses on critically assessing the current knowledge about radiation damage in nuclear metals and alloys, and to publish new advances in experimental and modelling methodologies and synergies to better predict radiation-induced structural modifications, and their potential impact on the mechanical and corrosion behaviour, fracture mechanics, and dimensional stability of nuclear alloys, systems and components. Potential research contributions to this issue can focus on: (i) the mechanistic understanding of radiation damage at the atomic-to-mesoscale and related modelling approaches; (ii) use of complementary characterisation techniques, such as (scanning) transmission electron microscopy, atom probe tomography, neutron and synchrotron X-ray scattering or positron annihilation spectroscopy; (iii) benchmarking the damage induced by neutron, energetic ion or electron bombardment; (iv) unprecedented damage levels, temperature and flux effects of defect structures; (v) novel alloy development (e.g., high-entropy and nano-structured alloys); (vi) micro/macro-scale testing; and (vii) impact of damage on alloy performance and structural integrity.

Guest Editor

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About the Journal

Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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