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Radiation Damage of Alloys

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Message from the Guest Editors

Rising global energy demand and the adverse environmental impact of fossil energy sources have led to renewed interest in increasing the share of energy coming from nuclear fission and fusion. Since the performance of nuclear materials is of utmost importance, radiation damage of alloys used or to be used as structural or fuel materials in nuclear environments must be thoroughly investigated in order to facilitate its deployment in advanced fission and fusion reactors or to benefit the life extension of the current fleet of nuclear power plants. This Special Issue therefore aims to present the latest research progress that advances our understanding of radiation damages in alloys for nuclear application. We are inviting researchers in the field of radiation damage to submit their original work to this Special Issue. We encourage submissions in a wide range of topics related to advanced alloys, including the fundamentals of radiation damage, ion irradiation, neutron irradiation, radiation-induced property degradation, advanced characterization of radiation damage, multiscale modeling and simulation, synergistic effect of radiation and other environmental factors, etc.

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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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