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TMS 2020

149th Annual Meeting & Exhibition

February 23-27, 2020 • San Diego, California, USA



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Nuclear Materials

Radiation Effects in Metals and Ceramics

Radiation can produce significant degradation in the properties of materials. An understanding of the microstructural changes occurring during irradiation is critical for the development of advanced materials as well as for modeling property changes.

The scope of this symposium will focus on the microstructural changes occurring in solids during electron, ion, neutron, gamma ray, or x-ray irradiation. This symposium is intended to bring together researchers working on different materials systems (metals, semi-conductors and ceramics) and radiation-induced phenomena so that similarities and differences in radiation effects can be compared and integrated. Both experimental and theoretical studies are solicited with a particular emphasis on linking state-of-the-art modeling with experimental observations of materials microstructure and property evolution. Studies showcasing connections between modeling results on point defects, impurity behaviors, damage accumulation, and those of advanced experimental characterization are encouraged. Finally, coupled effects of irradiation and corrosion which are ubiquitous in reactor systems and are the focus of the Energy Frontiers Research Center FUTURE (Fundamental Understanding of Transport Under Reactor Extremes) are also interest to this symposium.

Specific topics where contributions are encouraged include:

- Radiation damage in metals, semi-conductors, and ceramics
- In-situ characterization techniques that help modelling efforts
- Radiation-induced segregation, precipitation, amorphization, and recrystallization
- Radiation-induced dimensional instabilities (e.g. swelling and creep)
- Mechanisms of deformation and fracture in irradiated materials
- Radiation effects simulation and evaluation techniques
- Corrosion and oxidation in irradiated materials

The emphasis is put on the characterization and the modelling of nano/microstructural changes.

ORGANIZERS

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Abstract Deadline is July 1, 2019. Submit online at
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Questions?
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