ANNUAL MEETING
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MARCH 14-18, 2021 • ORLANDO WORLD CENTER MARRIOTT
ORLANDO, FLORIDA, USA
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SUBMIT AN ABSTRACT TO:

NUCLEAR MATERIALS

CHARACTERIZATION OF NUCLEAR MATERIALS AND FUELS WITH ADVANCED X-RAY AND NEUTRON TECHNIQUES

Neutron and x-ray radiation sources offer new opportunities to advance the fundamental understanding of nuclear reactor materials, fuels and engineering components. A variety of advanced characterization tools including diffraction, imaging and spectroscopy have recently become available to allow measurements of microstructure and deformation over a range of relevant time and length scales, on both pre- and post-irradiated materials, and under in situ conditions including stress, corrosive media and temperature. The symposium will highlight recent experimental efforts and future prospects to characterize material and fuel systems for nuclear reactor applications using neutron and x-ray radiation techniques.

Areas covered will include stress/strain evolution, void and crack initiation and propagation, structural stability, phase stability and transformations, characterization of irradiation defects, and corrosion. Specifically, the following areas are encouraged:

- In situ studies of dynamic processes including deformation, phase transformations, recrystallization and corrosion.

- 3D imaging based on diffraction, phase, density, or elemental contrast.

- Characterization of irradiation-induced effects.

- Experimentation coupled with modeling.

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