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

PHYSICAL METALLURGY

DEFECT AND PHASE TRANSFORMATION PATHWAY ENGINEERING FOR DESIRED MICROSTRUCTURES

Solid–solid phase transformation during thermo–mechanical processing (TMP) is still one of the most effective and efficient means to produce desired microstructures for structural (including orthopedic implant) and functional materials including steels, light metals (e.g. titanium, magnesium and aluminum alloys) and shape memory alloys, to name a few. On the one hand, extended defects such as dislocations and internal interfaces (e.g., stacking faults, grain boundaries and triple junctions, hetero-phase interfaces) have been frequently utilized to direct nucleation and tune the number density, size, shape, orientation and spatial distribution of desired phases and thus mechanical properties. On the other hand, crystalline defects of a specific characteristic (s) generated during TMP could be desired for improving materials properties as well (e.g., grain boundaries with low-index plane demonstrate strong resistance to crack propagation and corrosion in harsh service environment)

The symposium aims at providing a forum for discussion of current research efforts that bring together state-of-the-art characterization tools (such as in-situ transmission electron microscopy, aberration-corrected scanning/transmission electron microscopy and atom probe tomography) and computational tools (including DFT, MD, Phase-Field and Machine Learning) for fundamental understanding of defect-microstructure interactions and the corresponding defect engineering strategies to design new microstructures, both homogeneous and heterogeneous / hierarchical for unprecedented properties.

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Abstract Deadline is July 1, 2020. Submit online at
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