UNIVERSITY OF CALIFORNIA
UC RIVERSIDE | Materials Science and Engineering

WINTER 2020 COLLOQUIUM SPEAKER

Interface-Microstructure-Enabled High Strength and Damage Tolerance in Metallic Materials

This presentation will highlight interphase boundary dominated microstructures in metallic materials that result in unprecedented behavior such as ultra-high flow strengths, plastic flow stability, crack growth resistance, and enhanced radiation damage tolerance. Results from Cu-X (where X is a BCC refractory metal) model systems synthesized by magnetron sputtering will be described. The integration of atomistic modeling and dislocation theory with experimental characterization, including in situ TEM, will be highlighted. Fundamental understanding of the defect-interface interactions as well as the processing-interface microstructure relationships enable materials with controlled interface microstructures in metallic nanocomposites to achieve tailored response in engineering applications.

MARCH 4, 2020 | WINSTON CHUNG HALL 205/206 | 1 PM - 2 PM

Dr. Amit Misra

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Amit Misra is Professor and Chair of the Department of Materials Science and Engineering (MSE) at the University of Michigan, Ann Arbor since 2014. Prior to that he worked at Los Alamos National Laboratory, New Mexico (LANL) from 1996 to 2014. At LANL, his most recent appointment was as the Director of a US Department of Energy, Office of Basic Energy Sciences (DOE/BES) funded Energy Frontier Research Center (EFRC) titled Center for Materials at Irradiation and Mechanical Extremes. Professor Misra has a PhD in Materials Science and Engineering from University of Michigan (1994) and BS in Metallurgical Engineering (1989) from IIT-BHU, India. He is a naturalized citizen of USA. His primary research expertise is in processing-structure-property relations in advanced structural metallic materials for tailored response in extreme environments for next-generation of automotive, aerospace, defense and nuclear energy technologies. He has mentored over 40 early career scientists and engineers (postdocs and graduate students).

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