

Nuclear Engineering Seminar

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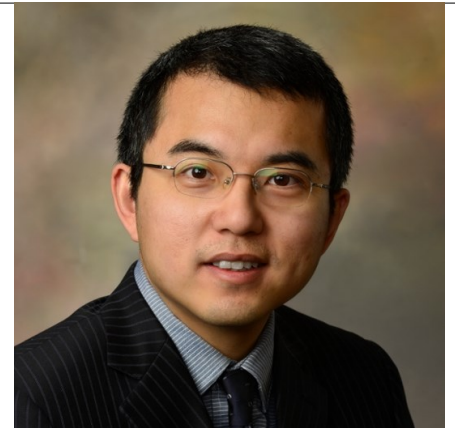
Wednesday, February 28, 2024

3:30pm | PHYS 112

Rethink Environmental Cracking

Abstract

Environmental cracking austenitic stainless steel under neutron irradiation affects the structural integrity of nuclear reactor systems. Over the past 40 years, significant progress has been made regarding the fundamental understandings of these phenomena in high temperature water systems. Strategies, including water chemistry control, weld residual stress management, steel sensitization management, high Cr alloy design, etc., have been implemented. This talk provides an overview of history of environmental cracking in nuclear systems and highlights our new approach to understand these phenomena and develop radiation and cracking resistant stainless steel for nuclear environments.



Education

- Ph.D., Georgia Institute of Technology
- M.S., The Ohio State University
- B.S., Nanjing University

Research Interests

- Advanced manufacturing for nuclear
- Structural alloys and composites
- Material degradation in extreme environments
- Irradiation effects of materials
- Mechanical behavior of materials
- Data analytics and machine learning

Affiliations

- The Minerals, Metals & Materials Society (TMS)
- American Society of Mechanical Engineers (ASME)
- Nuclear Science User Facilities (NSUF)
- International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC)
- ASTM International
- The Association for Materials Protection and Performance (AMPP)