

UNIVERSITY OF CALIFORNIA, IRVINE

THE DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

Is Proud to Host a Seminar by:

ASSOCIATE PROFESSOR CHEN LI

Dept. of Mechanical Engineering

Dept. of Materials Science and Engineering

University of California, Riverside

Thursday, November 3, 2022

2:00-3:20 PM

Location: McDonnell Douglas Engineering Auditorium

SCATTERING STUDIES OF LATTICE AND SPIN DYNAMICS IN MATERIALS

Abstract: Many scientific and technical challenges require materials with structural, transportation, electronic, and magnetic properties tailored to specific applications. Knowledge on fundamental excitations in materials is critical to understand many of these physical properties. Inelastic neutron scattering, neutron diffraction, and inelastic X-ray scattering are valuable tools to measure the lattice and spin dynamics in materials with exotic vibrational properties, including spintronic materials, thermoelectrics, negative thermal expansion material, fast ion conductor, and low-dimension materials. Anharmonic phonon dynamics arises from various mechanisms in these materials, such as phonon-phonon, electron-phonon, and magnon-phonon interactions. Understanding these fundamental interactions not only helps us better understand the existing materials but also provides profound insights on engineering novel functional materials with transformative impacts and uncovering new physics.

Bio: Dr. Li joined the Department Mechanical Engineering and Materials Science and Engineering Program at University of California, Riverside in 2016. Prior to that, Dr. Li worked as a research scientist at Carnegie Institute of Washington. He was also a joint faculty at Spallation Neutron Source, the most intense pulsed neutron source in the world, at Oak Ridge National Laboratory.

Dr. Li obtained B.Sc. in Physics from Department of Physics, Peking University and Ph.D. in Materials Science from Department of Applied Physics and Materials Science, California Institute of Technology. After graduation, he worked as a postdoc for Scattering and Thermophysics Group, Materials Science and Technology Division, at Oak Ridge National Laboratory. Dr. Li received NSF Career Award in 2017.