

Title: “Epitaxial thin-films: From soup to nuts”

Abstract:

“This talk will focus on the development and characterization of epitaxial thin-films tailored to address fundamental questions in catalysis, planetary science, and the continued miniaturization of interconnects in electronic devices. The talk will include recent work completed within Dr. Kaden’s research group to: (i) produce and characterize single-crystalline molybdenum-nitride thin-films intended for use as hydrodenitrogenation model-catalysts, (ii) examine the site-specific role attributable to Al-O-Si bridge configurations present at single-crystalline bilayer silicates used to model space-weathering processes leading to water evolution at the interface of airless planetary bodies such as the Moon, and (iii) investigate surface-dependent effects on resistivity for oxide-capped epitaxial Ru sheets with thicknesses in the nanometer size regime.”

Bio:

“Dr. Kaden is chemical-physicist specializing in improving upon fundamental structure-activity relationships essential to surface-mediated applications of broad importance to disparate fields bridging materials science, catalysis, planetary science and condensed matter physics. Dr. Kaden is currently an assistant professor in the Physics Department at the University of Central Florida and has previously completed a postdoctoral fellowship in chemical-physics at the Fritz Haber Institute of the Max Planck Society in Berlin, Germany, and a PhD in Physical Chemistry at the University of Utah.”