JAMES MADISON UNIVERSITY

SEMINAR
Friday, April 4

Dr. Bianca Schacherl

Institute for Nuclear Waste Disposal
Karlsruhe Institute of Technology

Insights into the hidden world of actinide bonding and behaviour using X-ray spectroscopies

Abstract. Characteristics of radionuclides like spontaneous emission of radiation or the induced fission of heavy nuclei are utilised in many different fields such as medicine, science, and energy production. These radionuclides are often Actinides. However, the electronic structure of these very heavy elements and with that their behaviour in bonding to other elements but also in environmental and biological systems is still not fully understood. X-ray spectroscopies can help resolve these questions. In this talk I will show how developing specialized methods and X-ray spectroscopic approaches and employing them for radiochemical applications can shed light on these fascinating and central questions

About Dr. Schacherel. Bianca Schacherl received her BSc in chemistry from University of Konstanz, Germany before starting her MSc and PhD at Karlsruhe Institute of Technology (KIT), Germany on "Advancing actinide high-energy resolution X-ray absorption/emission spectroscopic tools", for which was awarded the KIT Doctoral Award for Outstanding Doctoral Researchers. She explored several directions of radiochemistry during research stays in Germany, Belgium, Switzerland, the Joint Research Center of the European Commission, and Los Alamos National Lab (LANL), USA and joined Lawrence Berkeley National Laboratory (LBL), USA in 2023 for a joint Post-Doc with the Minasian and Abergel groups. Since 2025, she has been a junior group leader at KIT in Germany on Development of X-ray Spectroscopies and Radiochemical Applications. Her research interests are radiochemistry, radiopharmacy and spectroscopy, especially X-ray spectroscopies and their application on radiochemical as well as biological systems. She looks forward to discussing exciting science with you.

Website: https://www.ine.kit.edu/english/1946.php

Meet the Speaker 2:00 pm, PCB 3144
Seminar 3:30 pm, King 159