

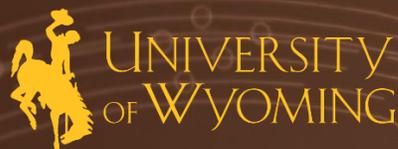
# Empowering Your Research: Advanced Characterization Tools for Chemical and Biological Engineering Applications

Date – 09 February

Time – 12:00pm

Room – EN2102

*Dr. Qian Yang*  
*Assistant Research Scientist*  
*University of Wyoming*  
*Center for Advanced Scientific*  
*Instrumentation*



College of Engineering  
and Physical Sciences

Chemical and Biomedical  
Engineering

Hosted By  
Dr. Juhyeon Ahn  
[Juhyeon.Ahn@uwyo.edu](mailto:Juhyeon.Ahn@uwyo.edu)

## **Abstract**

Advanced characterization tools play a critical role in modern chemical engineering research by enabling direct links between processing, structure, and performance across materials, energy systems, and biological interfaces. This talk introduces the Center for Advanced Scientific Instrumentation (CASI) at the University of Wyoming and highlights how its shared facilities support graduate-level research in chemical, biomedical, energy, and petroleum engineering. The presentation will provide an overview of CASI's core capabilities, including transmission electron microscopy (TEM/STEM), focused ion beam–scanning electron microscopy (FIB-SEM), X-ray micro-computed tomography (micro-CT), and light microscopy, along with examples of research conducted through CASI across diverse research fields. The talk will conclude with guidance on user access, training pathways, and best practices for integrating advanced characterization into graduate research projects, helping students efficiently leverage shared instrumentation to strengthen their thesis and dissertation work.

## **Bio**

Qian Yang is an Assistant Research Scientist at the University of Wyoming's Center for Advanced Scientific Instrumentation (CASI). He manages and supports shared advanced characterization facilities, including transmission electron microscopy (TEM), focused ion beam–scanning electron microscopy (FIB-SEM), and X-ray micro-computed tomography (micro-CT). Qian trains and supports users across engineering, materials science, chemistry, and geology, and plays a central role in developing experimental workflows, facility policies, and campus-wide access to advanced instrumentation. He received his Ph.D. in Chemical Engineering from the University of Wyoming, where he worked with Dr. Joseph Holles on heterogeneous catalysis and reaction engineering. Before Ph.D., he worked at the Chinese Academy of Sciences, Institute of Process Engineering, as a chemical process pilot plant engineer. He also conducted research with Dr. Bruce Parkinson in the University of Wyoming's Chemistry Department on solar cells and semiconductor materials.