Texas Tech University
Department of Chemical Engineering
Seminar Schedule

High-energy x-ray diffraction for a cleaner, sustainable and healthier future

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Abstract

To address the world's growing demand for cleaner, sustainable and healthier future, simultaneous advances in materials science, technology and industry are required. This, in turn, requires improved techniques for determining the atomic-scale structure of materials because it is the 3D arrangement of atoms in materials that largely determines their functional properties. In the talk, I will introduce high-energy x-ray diffraction as an experimental technique for determining the atomic-scale structure of materials exhibiting any degree of structural coherence as they are produced, stored or used. Examples will include bio-imaging and pharmaceutical materials, biogenic materials for pollution remediation, nanoalloy catalysts under gas-phase reactions and at the cathode of operating fuel cells, battery materials and quantum materials.