

**Department of Electrical and Computer Engineering
Materials Engineering Program
Texas Center for Superconductivity at Univ. of Houston
Center for Integrated Bio and Nano Systems
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Room: CBB 122**

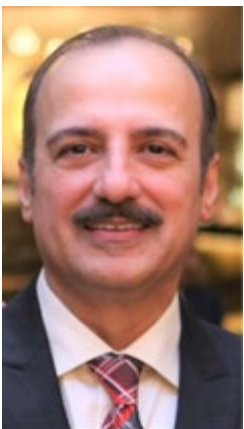
Space Exploration and Unique Challenges, Solutions and Methodologies for Astromaterials Analyses

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Abstract:

This seminar outlines and discusses innovative ways to perform various types of coordinated analyses with planetary materials utilizing the focused ion beam (FIB) synchrotron beamlines, nano-SIMS and transmission electron microscopy (TEM) techniques, providing several examples using instruments at the NASA Johnson Space Center. The presentation will cover brief insights of various NASA missions, including sample return missions and meteorites. These samples can provide fundamental information about the conditions in the early solar system, processes prevalent in small bodies, and key pathways to forming planets. Water on Earth and terrestrial planets is often attributed to impacts of water-rich asteroids with proto-Earth. In addition, this presentation will briefly discuss current robotic missions on Mars, science on ISS, NASA's future missions to Mars and going back to the Moon, the ARTEMIS mission.



Short Bio:

Zia Rahman is a Scientist and an Engineer, double major in Metallurgical and Electronics Engineering and a fellowship with Japan Electron Optics Laboratories, from Tokyo-Japan to specialize in Electron Microscopy. He was a Research Faculty in Materials Science at Mechanical Materials & Aerospace Engineering for 10 years at University of Central Florida (UCF), Orlando. Currently he is a Senior Research Scientist, works at NASA Johnson Space Center under the JETS contract, in Science and Exploration department. Mr. Zia is an Electron Microscopy specialist in Scanning and

Transmission Electron Microscopes, Electron Microprobe and Focused Ion Beam.