



MSE SEMINAR

**Materials Science and Engineering
Michigan Technological University**

**Date: January 30, 2018
Place: M&M Bulding, Room 610
Time: 11:00 am - 12:00 pm**



Fundamentals of Analytical Electron Microscopy Techniques

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The role of electron microscopy in solving materials problems has increased multifold in last few decades due to advances in electron optics, electronics, and computing technologies. From an analytical electron microscope we get wealth of information about the sample— such as morphology, crystal structure, composition, and oxidation state. Going a step further the microscopy community is trying to get information at real time using *in-situ* and *in-operando* measurements. In this talk the presenter will describe some of the imaging and spectroscopy techniques, such as— high resolution TEM (HRTEM), high angle annular dark field imaging in scanning TEM mode (HAADF-STEM), energy dispersive spectroscopy (EDS), and electron energy loss spectroscopy (EELS). The focus of the talk will be on capabilities of the new FEI Titan Themis at Michigan Tech.

The presentation will be delivered by Dr. Pinaki Mukherjee, who has joined Michigan Tech in January 2018. He obtained his PhD in Materials Engineering from University of Nebraska-Lincoln in 2013. He worked as a post-doctorate researcher at Rutgers University, The State University of New Jersey. He was an affiliate of National Center for Electron Microscopy, at Lawrence Berkeley National Laboratory.



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