
Physics Colloquium

University of Missouri-Kansas City

Department of Physics

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Frontiers of Infrared Imaging: Development of Synchrotron Infrared Microspectroscopy Imaging using a Multi-element Detector (IRENI) for Diffraction-Limited Chemical Imaging

University of Wisconsin–Milwaukee has designed and constructed a mid-infrared (IR) beamline, IRENI, extracting 320 hor. x 25 vert. mrad² from a synchrotron bending magnet, to homogeneously illuminate a commercial IR microscope equipped with a multi-element detector (MED). This will provide the opportunity to obtain chemical images with diffraction-limited resolution of 40 x 60 micron² areas in minutes.

First results from the beamline will be presented. Initial research projects include examining kinetics of living cells (phytoplankton), fungi and bacteria-mineral interactions. This project has a potential to impact a wide variety of research areas ranging from soft matter condensed physics, nanoscience, biology, chemistry, veterinary science, engineering, environmental science and geology.

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****Coffee at 3:10: Colloquium at 3:30 in Room 310****