Bio-Imaging Workshop: X-Ray Fluorescence Microscopy

March 2, 2021 12:00 PM Central Time (US and Canada)

This virtual workshop will cover the basics of X-Ray Fluorescence Microscopy (XFM) and application examples from the biological, biomedical as well as environmental scientific areas. We will give an overview of capabilities that are available to general users at Department of Energy Synchrotrons, and how to access them. The workshop is aimed at new users potentially interested in making use of these resources. The goal is to provide potential new users with an idea of what the technique could deliver for their research, the effort and knowledge required to make use of these instruments, and the expert support available to assist them. We will highlight current capabilities at several facilities, experiences of users adopting the technique, as well as application examples from several different areas ranging from cancer biology to trace metals in cell biology to nanomaterials in plants.

Topic: XFM Workshop

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https://northwestern.zoom.us/j/98183616758

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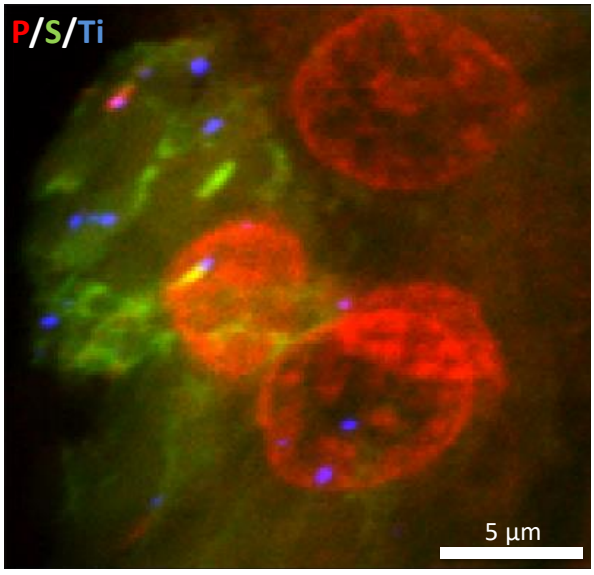

A high resolution image “Nanoparticles in liver cancer” (https://go.usa.gov/xXxnv), showing uptake of titanium dioxide nanoparticles (blue) into liver cells (cytoplasm outlined by sulfur signal in green) and cell nuclei (nuclear DNA outlined by phosphorus signal in red).

XFM Workshop Agenda, March 2, 2021

Time (CST)	Title Speaker, Organization
12:00 pm	"Welcome" Stephen Streiffer, Argonne National Laboratory
12:05 pm	"X-ray fluorescence microscopy (XFM): a technique to image metals and (trace) elements in biological systems" Stefan Vogt, Argonne National Laboratory
12:25 pm	"Applications of X-ray fluorescence microscopy to the life sciences" Gayle Woloschak, Northwestern University
12:45 pm	"Applications of X-ray fluorescence microscopy to biology at the Bionanoprobe" Si Chen, Argonne National Laboratory
1:05 pm	"Current and future X-ray fluorescence microscopy capabilities at the NSLS-II" Ryan Tappero, Brookhaven National Laboratory
1:25 pm	Break
1:35 pm	"Visualization of copper in mammalian systems using X-ray fluorescence microscopy" Martina Ralle, Oregon Health & Science University
1:55 pm	"Biologic and Environmental Spectroscopic Imaging Applications at SSRL" Sam Webb, SLAC National Accelerator Laboratory
2:15 pm	"X-ray fluorescence microscopy of essential and toxic metals in neurons", Richard Ortega, University of Bordeaux, France
2:35 pm	"X-ray fluorescence microscopy at the ALS: current and future capabilities" Sirine Fakra, Lawrence Berkeley National Laboratory
2:55 pm	"Unravelling the interplay of toxic elements in vertebrates using X-ray fluorescence microscopy" Ingrid Pickering, University of Saskatchewan, Canada
3:15 pm	Q&A and discussion All
3:45 pm	Closeout