

Corporate Member Appreciation

Presented by:

Midwest Microscopy and Microanalysis Society

Affiliate of the Microscopy Society of America and the Microbeam Analysis Society of America

November 20, 2009

8:00AM – 3:30PM

Baxter Corporate Headquarters

Deerfield, IL

(Directions and map below)

Registration Fees:

MMMS members: - FREE

Non-members: - \$20.00 (MMMS membership is included in fee)

MMMS student members: FREE

Non-member students: \$ 15.00 (MMMS membership is included in fee)

RSVP to: [Jim Diorio@baxter.com](mailto:Jim.Diorio@baxter.com) or (847) 270-4676

Vendors: We welcome vendors, tables for literature and exhibits are available. Contact us for details.

8:00– 8:50AM Registration – Continental Breakfast Visit Vendors

8:50 – 9:00AM Welcome – Andy Dunham, Senior Director of Research, Technology Resources, Baxter Healthcare Corporation

9:00 – 9:30AM Sample Preparation With Ion Beam Tools - Kevin McIlwrath, Hitachi High Technologies America

An overview of FIB-SEM instrumentation, as well as bench top ion mills, for use in preparing a variety of TEM, S/TEM and SEM samples.

9:30 – 10:00AM Beyond Imaging and Chemistry: Characterizing the Microstructure of Materials using Electron BackScatter Diffraction (EBSD) in the SEM Scott Sitzman, Oxford Instruments

EBSD can enhance materials analysis beyond traditional methods, this presentation will be showing new applications and offer examples of the benefits of this technique

10:00 – 10:30AM Analytical Systems for the Future - Jan Ringalda, FEI

Innovations for Transmission Electron Microscopes to deliver ground-breaking results.

10:30–11:00AM Coffee Break, Visit Vendor Area

11:00AM – 11:45PM Advances in Analytical FEG SEM, X-Ray Spectroscopy, Low kV Backscatter Imaging and the Implication for Low kV and High Spatial Resolution Microanalysis - Vern Robertson, JEOL USA

Advances that have occurred in electron optics and spectrometers offer dramatic improvements in overcoming the fundamental limitations of achieving good low kV imaging and microanalysis. Advances in hardware and software will be discussed along with applications-related examples.

11:45PM – 12:15PM Analysis of Biological and Non-traditional EDS Samples: Case Studies - Breno Leite, Thermo Fisher Scientific

X-ray microanalysis has been traditionally and successfully used on hard, polished and conductive samples. Metals, ceramics and minerals are the most common subjects for analysis. Life scientists and other professionals working with non-traditional Energy Dispersive Spectroscopy (EDS) materials have been gradually discovering some interesting applications for the technology. Plant and animal tissues, cellulose-based materials, etc. are now being analyzed. This is now possible due to advances in microscopy, sample preparation and the advent of high throughput silicon drift detectors (SDDs).

12:15 – 1:15PM - Lunch (Included) Visit Vendor Displays

1:15– 1:30PM Microwave-Assisted Processing – Benefits Beyond Time Savings

Jerry Jasso, Cryo, Ted Pella, Inc.

This presentation will discuss the benefits of microwave-assisted processing for biological specimens, and will include an explanation about the temperature / energy dichotomy, use of energy uniformity in the microwave cavity, morphological effects on tissues, and a brief overview on its use in EM processing, immunolabeling, fixation, and decalcification.

1:30 – 2:15PM The SEM as a Metallographic Tool - George F. Vander Voort, Buehler Ltd.

This lecture covers the various image formation modes and mechanisms with examples of a wide variety of microstructures viewed with the light microscopy and with the SEM using different types of detectors and electron sources, for example, E-T SEI, E-T BSE, solid-state BSE and scintillator BSE images, and even specimen current images. Specimens examined cover a wide range of microstructures and compositions including those with virtually no atomic number difference to those with high atomic number differences. Examples are also given of x-ray mapping and the use of color etchants for SEM imaging (which has been claimed to be of no value, but certainly is). Deep etching examples are given of a variety of specimens as well as x-ray maps of deep etched specimens. Examples of the use of EBSD to determine crystal structure, identify phases and determine grain size are also presented.

2:15 – 2:45PM Why Silicon Drift Detectors Are Not Magical - Mark Kelsey, Sales Manager, Bruker AXS

Although the recent evolution of silicon drift detectors have been exciting it must be emphasized that they are still subject to the laws of nature in regards to time, geometry, chemistry, etc. This talk will explore the advantages and disadvantages of silicon drift detectors.

2:45– 3:15 PM Confocal Raman Microscopy and Imaging – Dr. Jinping Dong, University of Minnesota

Confocal Raman Microscopy combines high resolution microscopy with the chemical sensitivity of Raman spectroscopy, thus allowing nondestructive imaging of chemical properties without special sample preparation. A thorough knowledge of structural and chemical properties is essential for the development of new devices and materials. Due to confocality, depth information of films and coatings can be easily obtained in addition to sample surfaces. Not only can thickness and uniformity measurements be performed, but the degree of mixing or segregation of ingredients within coatings can also be determined. A wide variety of industry and research labs can benefit from the non-destructive analysis provided by Confocal Raman Microscopy, including Pharmaceuticals, Cell Biology, Materials, Semiconductors, Polymers, and more.

Closing Remarks

Drawing for an Apple IPOD

Directions to Baxter Corporate Headquarters: 1 Baxter Parkway, Deerfield Illinois, 60015

From South (O'Hare Airport): I-294 (Tri State Tollway) north to the merge with I-94 (west) towards Milwaukee. North on I-94 to Lake Cook Road exit. Turn left (west) to first light, Saunders Road. Turn right on Saunders to Baxter Parkway. Turn right on Baxter Parkway. Keep to the right. Follow the special event parking signs in the garage. See Deerfield Campus Map and proceed to "Cafeteria, Auditorium, Reception" building on ground level.

From South (Edens): North to the merge with I-94 (west) towards Milwaukee on Edens Spur. Exit on Deerfield Road. Turn left (west), then take left on Saunders Road. Turn left on Baxter Parkway. Keep to the right. Follow the special event parking signs in the garage. See Deerfield Campus Map and proceed to “Cafeteria, Auditorium, Reception” building on ground level.

From North (Milwaukee): From I-94 east, going south towards Chicago exit at Lake Cook Road exit. Turn right (west) to first light, Saunders Road. Turn right on Saunders to Baxter Parkway. Turn right on Baxter Parkway. Keep to the right. Follow the special event parking signs in the garage. See Deerfield Campus Map and proceed to “Cafeteria, Auditorium, Reception” building on ground level



Deerfield Campus

