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Florida AVS-FSM 2002 Symposium

The 2002 Annual Joint Meeting of the Florida Chapter of the American Vacuum Society (AVS) and the Florida Society for Microscopy (FSM) was held in Orlando from March 10 - March 14th. Dr. Eugene Goldberg from UF's Materials Science and Engineering opened the symposium as the keynote speaker followed by invited presentations. Drs. Steven Pearton, David Norton, Laurie Gower and Susan Sinnott, from Materials Science and Engineering, Tim Anderson from Chemical Engineering, Arthur Hebbard, from Physics and Mark Davidson, from Microfabritech - UF, also presented invited talks. The student poster competition started Sunday with the first round for the judges, and the awardees were announced on Tuesday afternoon. There were 21 posters from UF students, some which received awards. Several AVS and vendor sponsored short courses were offered from Monday, March 11th through Thursday, March 14th.

High Temperature XRD APD 3720

The High-Temperature XRD system Philips APD 3720 has been refurbished and is currently operative. This system is equipped with a heating stage which allows precision temperature stability in a controlled atmosphere for the temperature range 25°-1000°C. A computerized search and match program is available for compound identification. Software is also available for quantitative analysis, line profile analysis, and crystallographic information. Applications include compound identification, temperature dependence of lattice parameters, phase transitions, and kinetics of transformations

Director's Corner *by L.A. Dempere*

Dr. Karin Pruessner has recently accepted our offer to join the faculty of the Department of Materials Science and Engineering as an Assistant Scientist at the MAIC. The MAIC Search Committee, after an extensive interview process, selected her from a pool of highly qualified applicants. Dr. Pruessner will join MAIC in June 2002. Dr. Valentin Craciun joined the MAIC team in the spring in the area of X-Ray Diffraction using the Philips MRD- X'Pert system. For information regarding training on the X'Pert please contact us at: maic@mse.ufl.edu. In addition, a LECO Carbon Determinator WR-112 and a Perkin-Elmer 3300 Atomic Absorption Spectrophotometer have been donated to the MAIC and will be available to the MAIC users in the fall.

MAIC web page: http://mse.ufl.edu/~maic/ E-mail: maic@mse.ufl.edu

Ultracryomicrotome Training

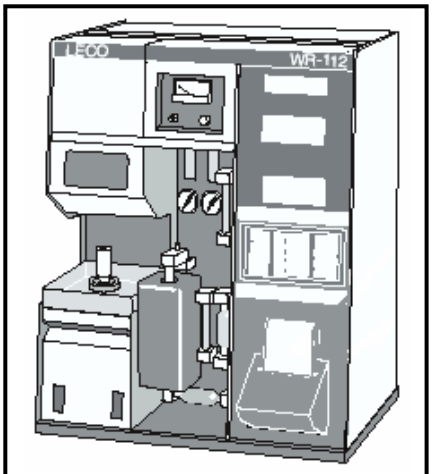
The Electron Microscopy Core Facility at the J. Hillis Miller Health Science Center offers individual training in sectioning using the same microtome that we have in MAIC, the Leica Ultracut UCT.
The training is provided by a very experienced microtomist, in the use of glass knives, making glass knives, trim and face blocks, cutting 1 micron-thick sections, and thin/ultra-thin sectioning at ambient temperature. The training includes up to 10 hours of instruction and supervised practice time. The cost for the training is the same as it will be when starts to be provided by MAIC.
Training on thin/ultra-thin sectioning is provided only once the student is proficient at 1 micron sectioning. For training on a diamond knife the students need to provide the knife. Training on cryo-sectioning is a separate training and can be provided to students that have become authorized users of the microtome and have spent additional time practicing ultra thin sectioning on the instrument at the MAIC. Those interested in training should contact Dr. Jill Verlander, Director of the Electron Microscope Core Facility, preferably by e-mail at verlaj@medicine.ufl.edu, to set up the training sessions.
After the student has completed their training, they will become an authorized user of the instrument and will have access to the microtome in MAIC to practice or work on the sectioning of their research samples.

Fall 2002 Courses

Several MSE courses will be offered on MAIC instrumentation and techniques: Transmission Electron Microscopy (TEM) (Dr. Michael Kaufman), Scanning Electron Microscopy (SEM) (Dr. Luisa A. Dempere), and Special Research Techniques (Eric Lambers).
The SEM class includes hands-on experience on operation of the SEM JEOL JSM-35CF. This class, or previous experience/training using an SEM, is a pre-requisite for training on the SEM JEOL JSM-6400. The laboratory for TEM includes training on the operation of the TEM JEOL 200CX.
The topic to be covered by the Special Research Techniques course will be announced in the summer.

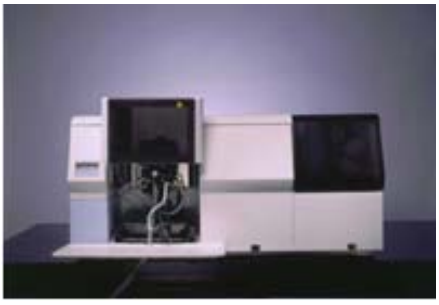
New Facilities

A LECO Carbon Determinator and a Perkin-Elmer 3300 Atomic Absorption Spectrophotometer have been donated to the MAIC by BREED Technologies, Inc., Lakeland, Florida. These systems will be setup in the coming fall semester to provide service and training.
The LECO Carbon Determinator allows the determination of the total carbon content of a sample by measuring the thermal conductivity of the gaseous products of pyrolysis of the sample. This LECO carbon analyzer separates the liberated CO_2 from the other combustion products then measures it using a gas chromatograph equipped with a thermal conductivity detector.



LECO WR-112 system

The Perkin-Elmer Atomic Absorption Spectrophotometer (AAS) model 3300 is a double-beam system controlled by a PC.
AAS uses the absorption of light to measure the concentration of gas-phase atoms. The sample (liquid or solid) is vaporized in a flame or a graphite furnace. The atoms absorb ultraviolet or visible light and make transitions to higher electronic energy levels. Concentrations are determined from the amount of absorption. Among the AAS applications are identification of metals in organic samples, geochemical and mineralogical samples.


Perkin-Elmer AAS Series 300

MAIC POLICIES CORNER:
X-Ray Badges must be used at all times while operating the XRD facilities at the MAIC and are required also during training sessions. X-Ray Badges must be returned to the MAIC front desk as soon as they expire. Please notify MAIC of any lapse in using the XRD facilities so we can save you money by canceling and/or activating your X-ray badges in a timely manner. There is an additional fee charged by the Environmental Health and Safety division for Radiation Control and Radiological Services to badges lost or not returned on time. More information regarding UF's radiation policies can be found at http://www.ehs.ufl.edu/