

NEW AND/OR INTERESTING IN MICROSCOPY

A reminder to mark your calendars:

- **Microbeam Analysis Society (MAS) National Meeting**
 (Breckenridge, CO) - August 6/11 '95.
- **Microscopy Society of America (MSA) & Histochemical Society Annual Meeting** (Kansas City, MO) - August 13/17 '95.

The XIVth International Pfefferkorn Conference of the Science of Biological Specimen Preparation for Microscopy and Microanalysis will be held on August 6-11, 1995 in Belleville, IL. This conference aims at creating a platform for discussion of the preparation of cells and biomolecules for imaging in vivo and in vitro. Specimen preparation techniques (for the following microscopy methods: fluorescence; differential-interference; real-time confocal laser scanning; infrared; atomic force and scanning tunneling; conventional, high resolution and field emission scanning electron; etc.) to be discussed include: whole mounts, immunolabelling, in situ hybridization, cryo-immobilization, freeze-fracture, freeze-drying, freeze substitution, low temperature embedding, extractable embedments, thin film deposition, positive and negative staining, conductive staining, cryo-untramicrotomy, etc. For further information, contact Dr. Ohm Johari at tel.: 708)529-6677, fax: 708)980-6698.

The National Center for Electron Microscopy is offering a fellowship that will allow participants the opportunity to conduct research in their own area of interest using the advanced transmission electroscopes at the Center.

The program is intended primarily for young faculty/investigator electron microscopists, resident in the U.S. who are in the process of setting up their own facilities or are awaiting delivery of new equipment, and who could benefit from the head-start that use of instrumentation and interaction with personnel at NCEM would bring. However, other post-doctoral applicants with suitable experience and graduate students would also be considered.

Fellowships will be of up to three-months duration and will carry a stipend of up to \$6,000 to assist in defraying travel and living expenses. Applications must be received by April 7, 1995. For further information, contact Gretchen Hermes: tel.: (510)486-5006, fax: (510)486-5888, eMail: ghermes@lbl.gov

Published bi-monthly, *ultrastructural pathology*, is the only journal to be devoted entirely to diagnostic ultrastructural pathology. It contains original research papers and concise reviews by leading authorities in the field. For a free sample copy, contact Taylor & Francis, Inc., 1900 Frost Road, Ste. 101, Bristol PA. 19007. Tel.: (800)821-8321, Fax: (215)785-5515.

NEW PRODUCT NEWS

Leica is proud to introduce **LEO (Leica Electron Optics) software** for the LEICA S400 Series of SEMs. Through customer feedback and a policy of continuous improvement, the development of the Leica LEO software reflects the changing needs of Leica SEM users.

The familiar and intuitive Microsoft® Windows™ graphical user environment has been introduced to make working with the new range of SEMs as easy as using your own PC.

The functionality of the standard SEM can be further enhanced by simply installing software expansion modules. Applications including word processors, spreadsheets and graphics programs can be run simultaneously, enabling you to customize reports and presentations to a level previously impossible.

The Leica S420, S430 and S440 provide a range of performance to meet individual needs:

- Point and click mouse operation
- Tried and tested **LEO (Leica Electron Optics) software**
- Opportunities for greater versatility than ever before
- Faster and more consistent image generation
- Regularly issued options and upgrades
- On-line help at all levels

Place yourself at the forefront of technology - unlock the future with the LEICA S400 Series - friendly, cost effective and designed with the user in mind. Leica, Inc., Tel.: (708)405-0123, Fax: (708)405-0147. **Circle Reader Inquiry # 27.**

ELECTRON MICROSCOPY SCIENCES is proud to announce the upcoming release of their 1995 product catalog covering a complete line of chemicals, supplies, and equipment for all fields of MICROSCOPY AND HISTOLOGY. For a free copy, please call or write today to:

ELECTRON MICROSCOPY SCIENCES
 P.O. Box 251
 Fort Washington, PA 19034
 Tel.: (215)646-1566

Circle Reader Inquiry # 28

Diatome, the leading manufacturer of diamond knives and accessories has the answer to all of your microscopy and microtomy needs. Whether you deal in biological or material sciences, in E.M. or L.E., at ambient or low temperatures, Diatome makes a knife for you. With three standard knife angles (35°, 45°, 55° - others available upon request) and six different types of knives (ultra thin, seim thin, cryo wet, cryo dry, histo and histo cryo), Diatome covers the entire microscopy spectrum. For more information on any of our diamond knives and accessories, please call or write us today:

DIATOME, U.S.
 PO Box 125
 Fort Washington, PA 19034
 Tel.: (215)646-1478, Fax: (215)646-8931

Circle Reader Inquiry # 29



Many thanks to Lucille Giannuzzi (Univ. of Central Florida) for the use of her set of microscopy-related cartoons in this newsletter.

And a special thanks to Thierry Epicier (Institute National des Sciences Appliquees de Lyon) for the cartoons used in this issue.

We invite others to provide "light" material (cartoons, quotes, etc.). In addition to using them in the newsletter, we intend to publish them all in a set and send to all interested parties.

Don Grimes, Editor

COMING EVENTS

- ✓ March 5/10 '95: **PITTCON '95**. New Orleans, LA. (412)825-3220, Fax: (412)825-3224.
- ✓ March 20/24 & 27/31 '95: **Practical Aspects of Scanning Electron Microscopy**. Univ. of MD Short Course. College Park, MD. Tim Maugel, Tel.: (301)405-6898, Fax: (301)314-9358.
- ✓ March 21/24 '95: **Digital Microscopy**
March 28/31 '95: **EELS Imaging & Analysis** (Gatan). Pleasanton, CA. Chris Byrne: (510)463-0200
- ✓ March 28/31 '95: **SCANNING '95**. Monterey, CA. Mary K. Sullivan: (201)818-1010, Fax: (201)818-0086.
- ✓ April 4/7 '95: **Ultramicrotomy in Materials Science**. RMC. Tucson, AZ. Bob Chiovetti: Tel.: (602)889-7900, Fax: (602)741-2200.
- ✓ April 4/7 '95: **Expoanalitica + Biociencia** Madrid, Spain. Tel.: +343 423 31 01, Fax: +343 423 63 48.
- ✓ April 6/7 '95: **FT-IR Microscopy Training Course**. (Spectra-Tech, Inc.). Shelton, CT. Debbie Esposito: Tel.: (800)243-9186, (203)926-8998 (CT)
- ✓ April 17/21 '95: **Spring MRS Meeting**. San Francisco, CA. Mary Kaufold: (412)367-3036.
- ✓ April 18 '95: **Light Element EDS Workshop** Univ. of Minnesota, Nolte Ctr., Minneapolis, MN. Gib Ahlstrand: Tel.: (612)625-8249, eMail: giba@puccini.crl.umn.edu
- ✓ April 18/20 '95: **Focus On Microscopy 95**. Taipei, Taiwan. P.C. Cheng: (716)645-3868.
- ✓ April 24/29 '95: **22nd International Conference on Metallurgical Coatings and Thin Films (AVS)**. San Diego, CA. Mary Gray: Tel.: (301)870-8756, Fax: (301)645-1426.
- ✓ May 6/11 '95: **Food Structure Annual Meeting** (Scanning Microscopy International). Houston, TX. Dr. Om Jahari. Tel.: (708)529-6677. Fax: (708)980-6698.
- ✓ May 15/17 '95: **TEM Specimen Preparation** (Gatan). Pleasanton, CA. Chris Byrne: (510)463-0200.
- ✓ May 16/18 '95: **Computer-Assisted Image Analysis and Measurement** (North Carolina State Univ.). Raleigh, NC. Belinda Niedwick: Tel.: (919)515-2261, Fax: (919)515-7614.
- ✓ May 20/24 '95: **EUCHEM Conference on Electron Microscopy in Solid State Science**. Lund, Sweden. Swedish Nat'l Committee for Chemistry. Tel: +46-(0)8-4115280
- ✓ May 29/June 23 '95: **Introduction to the Meiofauna** (Univ of S. Carolina short course). Gerogetown, SC. Kitty Harper. (803)777-2692
- ✓ June 4/7 '95: **22nd Annual Meeting of the Microscopical Society of Canada**. Univ of Ottawa. Shea Miller, Tel.: (613)957-4347 X-7709, Fax: (613)943-2353.
- ✓ June 6/9 '95: **3rd Annual Symposium on AFM & STM** (US Army Natick RD&E Ctr. Natick, MA. Samuel Cohen: (508)651-4578
- ✓ June 7/9 '95: **Confocal Microscopy and Quantitative Image Analysis** (Geo. Washington Univ. 21st Annual Program). Washington, DC. Fred G. Lightfoot (202)994-2881, Fax: (202)994-8885.
- ✓ June 12/22 '95: **Lehigh Microscopy Courses - SEM, X-ray Analysis, AEM, AFM**. Bethelam, PA. Prof. David B. Williams, Tel.: (610)758-5133, Fax: (610)758-4244.
- ✓ June 15/17 '95: **Microwave Workshop**. (Ted Pella, Inc.) California State Univ, Chico, CA. Rick Giberson: Tel.: (800)237-3526 (US) or (800)637-3526 CA, Fax: (916)243-3761.

VitalScan™ Modernize your SEM with Digital Imaging Technology

VitalScan is a PC-Based Imaging System that will extend and expand the usefulness of any scanning electron microscope thru control of image acquisition, image output and archiving of images for future reference. Acquired images can be archived on the hard drive or to any mass storage device, as well as printed on a low-cost per print video printer. Use all software and hardware resources available today for networking, cataloging and report generation.

- ACTIVE BEAM CONTROL
- UP TO 4096x4096 CAPTURE (12-BIT Digitization)
- DUAL ADC'S (Collect Secondary and Backscatter)
- FRAME and PIXEL AVERAGING
- AUTOMATIC CONTROL - CONTRAST/BRIGHTNESS
- OPTIONAL FAST X-RAY MAPPING
- OPTIONAL IMAGE ANALYSIS SOFTWARE



Vital Image Technology • 800-860-IMAGE • West Coast Office 805-297-5531

Vital Image Technology offers photographic-quality printers and other imaging related products such as CCD cameras, frame grabbers and scanners. VIT has the imaging solution for both network and stand alone applications.



New RMS Microscopy Handbook

PhotoMACROgraphy

Brian Bracegirdle

Cold Aston Lodge, Cold Aston, Cheltenham, Glos. UK

A detailed practical guide to the choice of equipment and methods for both transmitted-light and reflected-light photography. Recommended for all who wish to record photographic images at moderate magnifications, whether relative novices or more experienced workers.

- CONTENTS -

1. The Scope of the Process

- The macro range
- General difficulties
 - Depth of field
 - Circle of confusion
 - Susceptibility to vibration
 - Accuracy in focusing at low power

References

2. Obtaining the Magnification

- Lens formulae
- The field of view required
- Setting and checking magnification
- Suitable lenses
- Unsuitable lenses
- Supporting the lens
 - Rigid tubes
 - Bellows
- Camera movements
- Compound systems for macro-range work
- Low-power objectives
 - Drawing tubes
 - Stereo microscopes
 - Macroscopes
- Comparative merits of single-lens and compound Systems
- Lenses/systems for macro-range work at long range
 - Image relay
 - Questar
 - Katoptaron

References

3. Working with Transmitted Light

- The choice of illumination systems
- Macro-dia illuminators
 - Leitz Aristophot
 - Other macro-dia apparatus
- Rigorous alignment and its importance

Recommended apparatus

- Fields of view up to 20 mm diameter
- Fields of view between 20 and 55 mm
- Fields of view greater than 55 mm

Contact printing of large preparations

- Using an enlarger to make macrographs
- Illuminating bases and their uses
 - Darkground illumination for large specimens

Temporary and portable apparatus

4. Working with Reflected Light

- Supporting tiny specimens
- Supporting small specimens
- Supporting larger specimens
- The use of illuminating bases
- Supporting the camera at special angles
- Supporting living specimens
- Working in field conditions
- Direct illumination methods
- Diffuse illumination methods
- Illumination using a thin sheet of light
- References

5. General Remarks on Illumination and Exposure

- Tungsten versus flash
- Split and multiple exposures
- Colour temperature
- Color filters
- Physical temperature
- Misting
- Additional material in the image plane
- References

6. Estimating Exposure in Macro-range Photography

- TTL metering for transmitted light
- Controlling TTL metering
- TTL metering for reflected light

Other kinds of metering for transmitted light

- Other kinds of metering for reflected light
- Calibrating equipment

7. Recording the Image

- A survey of image-recording processes
 - Criteria for assessing the behaviour of imaging systems
- Graphics processes
 - Inking over a photographic print
 - Using an enlarger
 - Using a projection mirror or drawing tube
 - Reflected-light drawing
- Black and white photography
 - UV and infrared monochrome films
 - Instant films for monochrome work
 - Darkroom work in monochrome
- Working in colour
 - Colour transparency work
 - Colour prints from colour transparencies
 - Colour negative films
 - Infrared colour films
 - Instant films for colour work
 - Recording motion. 1: analogue movie films
 - Recording motion. 2: analogue video recording
- Digital recording for image modification
- References

Appendix

105 pages, 52 photographs, tables and illustrations.

Price: \$30.00 U.S. Plus \$4.00 S&H

Available from *Microscopy Today* by check, Visa/MasterCard or company purchase order. Address, etc. on page 3.