

NEW AND/OR INTERESTING IN MICROSCOPY

✓ The Biological Photographic Association has been formed by media specialists primarily employed in the health care sector. Interests cover a wide range of specialties from photography to video to computer imaging to microphotography. Many members work with microscopes every day while others rarely have the opportunity. In addition to a peer-reviewed journal and a newsletter, each published quarterly, the Association sponsors an e-mail network called "E-BIOCOMM". To sign on (no charges), contact David Gray at "GRAY.DAVID.E@FORUM.VA.BOV".

✓ The 4th quarterly workshop on TEM Specimen Preparation will be held at Arizona State University on July 11-13, 1994 and will cover a general working knowledge as well as hands-on experience with preparation of specimens from semiconductors, ceramics, composites, etc. Following on August 15-19, 1994 will be the 2nd Semiannual Advanced Workshops; the first workshop will focus on "wedge techniques" for IC device analysis and the second will cover the principles of "materials ultramicrotomy". For information, contact Dr. Farhad Shaapur at (602)965-0399.

✓ Electroscan recently announced real-time thermal gas analysis capability in their environmental SEM. The ESEM 2020 uses secondary electrons to image the sample during heating. Chemical compounds evolved during heating are detected by a small capillary connected to a Balzers ThermoCube gas analyzer. Gas concentrations from <1 ppm to 100% can be sampled with this method. Electroscan Corporation: Tel.: (508)988-0055

✓ Through a some £1,000,000 grant, the University of Cambridge is establishing a comprehensive, multi-imaging laboratory - the first of its kind in the U.K.

Over 20 different research groups in different departments supported the grant application with projects covering the tracking of viral proteins, investigating scrape marks on bones and teeth, nerve growth, measuring the calcium concentration in living plant cells, and many other investigations of biologically significant molecules. The centre will include a high resolution TEM and STEM, one scanning electron microscope and a confocal microscope as well as modern sample preparation equipment.

Professor Ray Lund, of the Department of Anatomy, and Dr. Patrick Echlin, of the Department of Plant Sciences, will establish the new centre.

✓ Eaton Publishing invites submission of papers for peer review in consideration for publication in the new journal *Cell Vision - Journal of Analytical Morphology*. The first issue of *Cell Vision* is scheduled for publication in May/June 1994.

Cell Vision is edited for those scientists and physicians that analyze morphology as a means of diagnosis or research. It is also intended for those who are interested in advances in immunocytochemistry, confocal microscopy, image analysis and more recent developments such as *in situ* polymerase chain reaction and probe scanning microscopy.

Cell Vision focuses on these novel analytical methods in morphology and their applications in biomedical research and diagnostics. Developments reported in this journal will benefit any scientist who visualizes and analyzes chemical components against the background of tissue structure.

Cell Vision will have an international circulation and will publish articles contributed by multinational authors. All articles will be rigorously peer reviewed and promise to be of very high quality. The international Editorial Board of *Cell Vision*. Led by Dr. Jiang Gu of the Deborah Research Institute, includes many top scientists in modern morphology.

General information about *Cell Vision* (including instructions for authors and subscription information) is available by contacting Eaton Publishing, 154 East Central Street, Suite 201, Natick, MA 01760. You may also contact us by internet: fweaton@biotechnet.com.

In response to requests from several of our readers, we are in the process of developing a summary of microscopy related software that will run on either PC or Macintosh systems. Readers are requested to supply us with the names (plus addresses/telephone numbers) of known companies supplying such software. In return for their assistance, we will provide these readers with copies of the summary as it is developed.

--- Ed.

✓ Philips Electron Optics announces that it has entered a technology and know-how exchange agreement with the FEI Company. An aim of the agreement is the application of specific Philips microscopy technology in FEI workstations - expanding FEI's ion beam technology into more universal systems which can then handle IC inspection and analysis.

✓ The San Diego 3D Imaging Group is a newly-formed professional forum for keeping up-to-date on all aspects in all disciplines and on all platforms of 3D imaging. This is accomplished by both an on-line internet-compatible email reflector and local monthly meetings at the San Diego Supercomputer Center (UCSD Campus). Participation is free (no dues) and open to all worldwide. Suggested topics include but are not limited to: 3D microscopy (confocal, MRI, AFM, etc.), biomedical imaging, holography, reconstruction software, 3D scanning, stereoscopic displays and virtual environments. Vendor participation encouraged. 3D imaging vendor hardware/software exhibition being planned for later this year. To be placed on eMail reflector, contact Marc Brande at MBRANDE@AOL.COM and simply list your 1) eMail address, 2) name and 3) mailing address. The eMail list is kept confidential. You may remove yourself from the list at any time.

✓ **Need an entry level, qualified electron microscopist?** Both the San Joaquin Delta College and the Madison (WI) Area Technical College announce the availability of new graduates - trained in both the material and biological sciences. From San Joaquin, contact Dr. Judy Murphy at tel.: (209)474-5284 and from MATC, contact Mr. Glen Boda at tel.: (608)246-6254.

A Note to our New Readers:

The object of this monthly newsletter, perhaps unlike any other, is to publish material and information of interest and value to working microscopists - at no cost and now on a worldwide basis.

While the content of this issue is agreeably not all that great, we submit that each month's issue is a bit better than the previous. The publication can be worth the effort, worth it for you to read and worth it for us to publish, only with your assistance.

For articles or material, the only criteria is that they be of interest and/or value to a reasonable number of working microscopists. We are particularly interested in contributions relating to advances in, or approaches to, the technology - in a very broad sense. We would also appreciate humorous or human interest material.

Contributions can be of any length - from several hundred to several thousands of words. And we do accept illustrations, micrographs, etc. in either full color or black and white.

We would GREATLY appreciate your assistance in making this an interesting and effective publication. Thank you!

--- Don Grimes, Editor

TIPS 'N HINTS

TIPS 'N HINTS is a new column! Our goal is to make it a special place for lively exchange of those odd little bits of information which make microscopy easier, more fun and more effective. The key to success and value is input from YOU! Microscopy/Microscopy Education will function as the "editor" of the column and you are requested to send your contributions to us by FAX (413)746-9311. Be sure to include your name, company, address and phone/fax numbers. If your Tip or Hint is used, we'll send you a special "Thank You" gift from MME. All areas of microscopy and sample preparation will be covered.

--- Barbara Foster, Editor Tips 'N Hints

★ **Need better definition on SEM Samples?** Bill Miller (past president of BalTec, now with Electrolmage, 203/927-1090) recommends sputter coating with platinum. He indicates that the slight increase in cost is more than off-set by the improvement in definition.

★ **Too much or too little EDGE contrast in Optical Microscopy?** A small change in refractive index can make a major difference. If you usually mount your sample in air, try water, glycerin, Nujol (mineral oil, available at any drug store) or a few drops of immersion oil. If you want to get fancy, write/call Cargille Labs (201/239-6096) for a catalog of a wide range of highly specialized oils with very specific refractive indices.

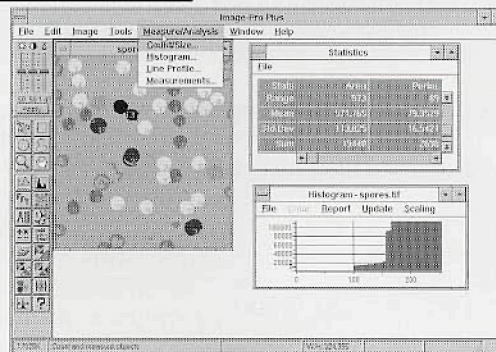
If the contrast is too high, try a mounting medium of closer refractive index. If too low, try a bigger difference. The results can be amazing: chunky crystals with lots of out-of-focus detail will have cleaner edges and better definition; rounded samples such as glass fibers can be made to look flat (especially important for image analysis); outer coatings often disappear, revealing inner structure; biological samples will show greatly improved edge definition; and phase images will have much less edge-obscuring halo. -- Ed.

★ **Doing FT-IR?** Pam Martoglio and John Reffner at Spectra-Tech (Stamford, CT 800/243-9186) regularly apply the refractive index matching trick in their FT-IR work, citing that the closer match removes the phase contrast at the sample edge/air interface, leaving only an absorption image. To obtain an undistorted infrared spectrum, run the spectra on both the mounted sample and mounting medium. The spectrum of the medium can be easily subtracted from that of the mounted sample. Their recommendation: deuterated heptane. It is easily subtracted out because its infrared absorptions appear in a normally un-absorbing spectral region.

★ **A new version of an old tool for Ultramicrotomy.** Single-hair brushes, particularly made from an eyelash, are standard tools round the ultramicrotomy lab. Julia Hung of Amoco Performance Products, Alpharetta, GA has a new twist: deer hair. The entire length of the hair is useful. After using the tip for a single hair brush, cut the remaining hair into 1.5 to 2 cm lengths. Glue one end onto an applicator stick. After drying, hold the stick on a finger and slice the other end of the hair diagonally with a razor blade to form a micro-spatula. It's excellent for cleaning the debris or frost on a cryo knife or for cleaning the knife edge on a boat during room temperature sectioning and has made transferring dry sections to the grid in a cryo chamber so much easier. Julia reports that cryo work has become less frustrating after using deer-hair micro-spatulas.

★ **Trying to measure film thickness?** One of Mary McCann's (Polaroid Corp., Cambridge, MA) favorite accessories is a "black slide" made by painting the back of a standard microscope slide with black Krylon. To use, oil the back of the film to the clean surface of the slide with standard immersion oil and observe in reflected light. Since interference colors can be correlated to thickness, observing the color produced by the thin film interference between the front and back surfaces of the film gives a quick and easy way to measure film thickness as well as a way to monitor thickness variations. The black paint removes any secondary reflections from the back of the slide, greatly improving the visibility of the film's interference effects.

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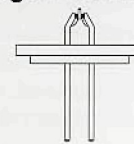
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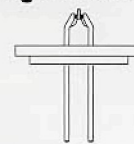
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COMING EVENTS

- ✓ May 7/12 '94: **Food Structure Annual Meeting.** Toronto, Canada. Dr. Om Johari (708)529-6677
- ✓ May 11/12 '94: **Scanning Probe Microscopy and Analysis** (Northwestern U. Seminar) Evanston, IL. Allison Ando: (708)491-3365
- ✓ May 16/17 '94: **High Performance Plas-tics.** (Northwestern Univ. seminar). Evanston, IL. Allison Ando (708)491-3365
- ✓ May 17/19 '94: **Computer-Assisted Image Analysis and Measurement** (North Carolina State Univ. short course). Raleigh, NC. Lorri Toole (919)515-2261
- ✓ May 17/20 '94: **SCANNING '94.** (FAMS & SEEMS) Charleston SC. Mary K. Sullivan (201)818-1010.
- ✓ May 19/20 '94: **IR-Plan Microscope Train-ing.** Spectra-Tech. Stamford, CT. Debbie Esposito (800)243-9186.
- ✓ June 6/10 '94: **Polymer Microscopy.** (Univ. of Michigan). Ann Arbor, MI. (313)764-8490.
- ✓ June 7/9 '94: **1994 International AFM/STM Conference.** Natick, MA. Samuel Cohen: Tel.: (508)651-4578, Fax: (508)651-5104.
- ✓ **LEHIGH MICROSCOPY SHORT COURSES**
June 13/17 '94: **Basic Course:** SEM and X-ray Microanalysis
June 20/24 '94: **Advanced Courses.**
Advanced Scanning Imaging
Quantitative X-ray Microanalysis
Microcharacterization
AFM, STM and other Scanned Probe Mi-croscopes
June 20/23 '94: **Analytical Electron Mi-croscopy**
For registration & other information, contact Dr. David B. Williams: Tel.: (215)758-5133, Fax: (215)758-4244
- ✓ June 15/17 '94: **Surface Analysis '94.** (AVS/ASTM). Burlington, MA. Joseph Geller: (508)535-5595.
- ✓ June 15/17 '94: **First European Mi-crobeam Analysis Workshop.** Helsinki, Fin-land. Erkki Heikinheimo. Tel: +358-0-4512759.
- ✓ June 16/18 '94: **Current Trends In Im-munocytochemical Protocols.** Geo. Washing-ton Univ. Medical Ctr. Washington, DC. Fred Lightfoot: (202)994-2881.
- ✓ June 26/30 '94: **10th Annual Molecular Microspectroscopy Short Course.** (Miami Univ.) Oxford, OH. (513)529-2873
- ✓ June 21-24 '94: **5th Conference on Fron-tiers of Electron Microscopy in Materials Science.** Oakland, OH. (513)529-2873.
- ✓ June 24/25 '94: **IEEE Workshop on Biomedical Image Analysis.** IEEE Computer Society and MAMI Technical Committee. Seat-tle, WA. Dmitry Goldgof: Fax: (813)974-5456
- ✓ June 26/July 1 '94: **4th European Congress of Cell Biology.** Praha, CR. Dr. Z. Drahota, Tel.: 2-4721151, Fax: 2-4712253.
- ✓ July 11/15 '94: **Freeze Fracture Course.** Colorado State Univ., Fort Collins, CO. Eileen Dieperbrock, (303)491-5847.
- ✓ July 11/15 '94: **41st International Field Emission Symposium (IFE '94).** Rouen, France. Prof. D. Blavette and A. Menand. Tel. (33) 35 14 66 51, Fax: (33) 35 14 66 52.
- ✓ July 17/22 '94: **13th International Congress on Electron Microscopy.** Paris, France. Secretariat ICEM 13, Case 243 - Uni-versite Paris VI, 4 place Jussieu, 75252 Paris Cedex 05, France. Tel.: (33)144272621, Fax: (33)144272622.
- ✓ July 18/21 '94: **INTER/MICRO-94.** Mc-Crone Research Institute. Chicago, IL. Nancy Daerr: (312)842-7100, Fax: (312)842-1078.
- ✓ July 31/Aug 5 '94: **MSA/MAS Confer-ence.** New Orleans LA. (800)538-3672, Fax (508)548-9053.
- ✓ August 18/20 '94: **Stereology Course.** Yale Univ. School of Medicine, New Haven CT Paul Webster: (203)785-5072, Fax (203)785-7226.
- ✓ August 22/26 '94: **Immunocytochemistry and Cryosections Practical Course.** Yale Univ. School of Medicine, New Haven CT. Paul Webster: (203)785-5072, Fax (203)785-7226.
- ✓ Sept 12/15 '94: **MICRO 94 - International Microscopy and Image Analysis.** London, UK. RMS (U.K.): (0865)248768 Fax: (0865)791237
- ✓ Sept 21/23 '94: **Microscopy/Photomicro-graphy Workshop.** American Type Culture Collection. Rockville, MD. (301)231-5566.

- REGIONAL MSA/MAS EVENTS -

- ✓ May 13/14 '94: **Pacific NW EM Society Spring Meeting.** Seattle, WA. Mike Rock: (206)685-7073.
- ✓ May 26 '94: **Minnesota Society Spring Symposium.** St. Paul, MN. Gib Ahlstrand: (612)625-8249.

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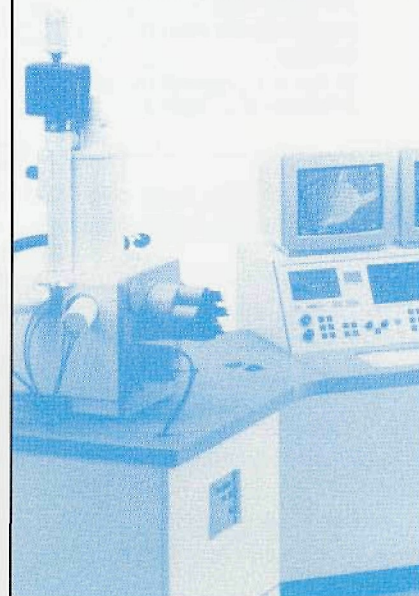
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Scanning Electron Microscope
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Scanned Probe Microscopies
Cathode Technology, Today &
Tomorrow
Applications: Materials/Geology/
Biology
X-ray & Image Analysis in the
Petroleum Industry

Microanalytical Methods in Biology
Microanalysis of Coatings & Interfaces
Field-Emission & Low-Voltage SEM
Analytical EM: Challenges & Opportunities
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Scanning Electron Microscopy – How To Do It Better
Advances in Rapid Microwave Fixation, Staining &
Embedding for LM & EM
Digital Image Processing for Microscopy
Ultramicrotomy in Preparing "Hard Materials" for
Analytical TEM
Confocal Microscopy & Visualization
Quantitative Electron Microprobe Analysis
Cryo-TEM for Imaging Biological Specimens in Suspension

TUTORIALS

The MSA Software Library & Basic Image Processing
Cryoelectron Microscopy of Whole Cells
Basic Literacy in X-ray Microanalysis, Part II
Recent Advances in Light Microscopy
Hands-on Computer Demonstration
Interpretation of HREM Images by Image Simulation
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