

Another Way To Prepare Permanent Mounts for Light Microscopy

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Having read John Kiernan's contribution in the January 1999 issue of *Microscopy Today*, I decided to add my two-cents worth (ignoring inflation). I have water-mounted preparations older than 5 years with no indications of threats to their permanence. The procedure is so simple it hardly bears writing about much less printing it for others to read.

I simply make sure any aqueous coverslip preparation on a microscope slide be dry at the edges of an otherwise full (of water) coverslip preparation. I simply add tiny amounts of water to completely fill the space between slide and coverslip, then wait a minute or two for the excess water on the slide outside the coverslip to evaporate. I can speed this step by wicking any excessive excess into a forceps-held small square of filter paper.

Then I seal the edges of the coverslip with one of several sealants: finger-nail polish (usually colorless through not necessarily so), Aroclor 5442, Canada balsam, or Epoxy® cement. All of these should be as fluid as possible, e.g., free-flowing fingernail polish (add a little amyl acetate?), Aroclor 5442 at 60° C to the slide also at 60° C, Canada balsam at room temperature but diluted if necessary to fluidity with almost any organic solvent, e.g., ether, amyl or ethyl acetate, carbon tet., etc. and long-working-time Epoxy. Every preparation, once sealed, should be inspected 20-30 minutes later to be sure it was completely sealed. This is most necessary with finger-nail polish.

I have sealed aqueous preparations in each of these sealants that are now several years old. Incidentally, the water can be an aqueous solution (acidic, basic, etc. or one saturated with a compound crystallized from water). Possible preps of interest are crystallized inorganic salts illustrating different

crystal systems or different crystal habits; microcrystal tests results, aqueous liquid crystalline preps like INTAL (di-sodium chromoglycate). The latter can be reheated to show the transition of nematic to smectic mesoforms at 42° C without damage and repeated freely any time later.

To appeal to biologists and to justify taking up this space I can add a "variation on a theme": the "permanent" protozoa aquarium on a microscope slide. I use a 22 x 40 mm coverslip or sometimes a 22 x 22 square coverslip sealed around the edges with vaseline®. I use a small spatula to construct a rectangular (or square) support on the slide for the coverslip. This support, built up as a narrow line, supports the coverslip around the edges to create a clean inner space about 16 X 34 mm (or 16 x 16 mm for the square coverslip). A few drops of "pond water" plus 1-2 small bits of plant material are placed in the chamber to be formed by lightly pressing the coverslip onto the vaseline "walls" of the chamber. The seal should be tight but some air should be trapped with 2-3 mm deep pond water. This microaquarium will last as long as any protozoan life remains. This can be several weeks or months. Usually it's a matter of survival of the fittest and only one or two species will be left after 2-3 weeks. The action should be observed with a stereo at 20-40X. ■



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- ✓ May 26/28 '99: **MSC/SMC Conference – Eye on Imaging.** (Microscopical Society of Canada) Guelph, ON, Canada. www.uoguelph.ca/botany/rootlab/msc99/htm
- ✓ May 30/June 1 '99: **Scanning Probe Microscopy, Cantilever Sensors and Nanostructures** (Seattle '99 SPM Conference). Seattle, WA. <http://polymer.physics.bristol.ac.uk/spm>
- ✓ June 7/11 '99: **Polymer Microscopy Short Course** (University of Michigan) Ann Arbor, MI, <http://cpd.engin.umich.edu>
- ✓ **LEHIGH MICROSCOPY SCHOOL**, Bethlehem, PA
June 14/18 '99: SEM and X-ray Microanalysis
June 13 '99: Introduction to SEM and EDS
June 21/25 '99: Advanced Scanning Electron Microscopy
June 21/25 '99: Quantitative X-ray Microanalysis
June 21/24 '99: Analytical Electron Microscopy
June 22/25 '99: Atomic Force Microscopy
June 21/24 '99: Microdiffraction
Info: Ms Sharon Coe: (610)758-5133, email: slc6@lehigh.edu
<http://www.lehigh.edu/~inmatsci/shortcourse/Microcourses.html>
- ✓ June 16/27 '99: **3D Microscopy of Living Cells** & June 29/July 1 '99: **3D Image Processing Workshop** (Univ of British Columbia) Vancouver, BC, Canada. Prof. James Pawley: (608)263-3147, jbpawley@facstaff.wisc.edu
- ✓ June 20/25 '99: **Fundamentals and Applications of Light Microscopy** (McCamn Imaging) Wellesley, MA (617)484-7865, mccanns@tiac.net
- ✓ June 21/25 '99: **Electronic Image Acquisition, Processing & Analysis** (McCrone Research Institute) Chicago, IL. Nancy Daerr: (312)842-7100, Fax: (312)842-1078, eMail: ndaerr@mcri.org
- ✓ June 21/25 '99: **15th Annual Short Course on Molecular Microspectroscopy** (Miami University) Oxford, OH (513)529-2874, fax: (513)529-7284, email: <http://www.muohio.edu/~sommeraj>
- ✓ June 21/25 '99: **Fourth Annual Fundamentals and Applications of Light Microscopy.** (McCann Imaging/Wellsey College) Wellsey MA. Mary McCann: (617)484-7865, Fax: (617)484-2490, www.microscopyed.com
- ✓ June 25/July 1 '99: **INTER/MICRO '99** (McCrone Research Institute), Chicago, IL. Nancy Daerr: (312)842-7105
- ✓ July 9/13 '99: **IUMAS 2000: The 2000 Meeting of the International Union of Microbeam Analysis Societies.** Kailua-Kona, Hawaii
- ✓ July 19/22 '99: **Electron Microprobe Analysis by Wavelength Dispersive Spectroscopy on JEOL JXA-733 Superprobe** (MIT) Boston, MA (617)253-1995, e-probe-www@mit.edu
- ✓ Aug 1/5 '99: **MICROSCOPY & MICROANALYSIS '99** (MSA) Portland, OR
- ✓ Aug 9/13 '99: **Summer School on Computing in Electron Microscopy** (NCEM, Lawrence Berkeley Natl Lab) Berkeley, CA, (510)486-6036, Fax: (510)486-5888, <http://ncem.lbl.gov>
- ✓ Aug. 17/19 '99: **Imaging Tech.** (ASM) Chicago, IL. Derek KJ. Weston, (440)338-5151 X5601, dweston@po.asm-intl.org
- ✓ Aug 24/26 '99: **Workshop on Variable Pressure SEM** Montreal, QC, Canada, Dr. Pierre Hovington (450)652-8125, Fax: (450)652-8424
- ✓ Aug 27/29 '99: **First International Conference On Scanning Probe Microscopy of Polymers.** (UCSB & Digital Instruments). Santa Barbara, CA E. J. Kramer at edkramer@mrl.ucsb.ca
- ✓ September 21/24 '99: **Using Ultramicrotomy in Materials Science** (Ventana/RMC) Tucson, AZ, Steve Miller: (520)903-9366
- ✓ March 12/16 '00: **High Resolution Electron Microscopy in Materials Science Symposium** (TMS Physical Metallurgy Committee) Nashville, TN, Diane Albert, Los Alamos Natl Lab: (505)665-2266, Fax: (505)667-5268
- ✓ October 6/14 '99: **Optical Microscopy & Imaging in the Biomedical Sciences** (Marine Biological Lab) Wood Hole, MA. Carol Hamel: (508)289-7401, eMail: admissions@mbl.edu

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