MICROSCOPY 101

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Reducing Cellular Autofluorescence

The following protocol is a basic procedure that should help for most general cellular autofluorescence. There are many variations possible but the procedure below is a good starting point to work from.

1) Immediately before use, make up a 1 mg/mL solution of sodium borohydride in a physiological buffer such as phosphate buffered saline (PBS). The solution will be "fizzy" (bubbling) like carbonated water. Preparing the borohydride solution on ice and performing all subsequent incubations on ice has also been recommended.

2) Apply this solution immediately (while fizzing) to cells or tissue sections. Incubate using the following guidelines.

- For tissue culture cell monolayers fixed in *e.g.*, glutaraldehyde, incubate in the sodium borohydride solution for 4 minutes. Replace with fresh sodium borohydride solution and incubate for another 4 minutes.
- For paraformaldehyde fixed, paraffin embedded tissues at 7 µm thick or less, incubate 3 times, 10 minutes each in sodium borohydride solution.
- For thicker tissue sections or whole mount flies/worms/baby fish/etc., more changes of sodium borohydride solution and/or longer periods of incubation might be necessary.

3) Rinse many times with physiological saline or PBS to remove traces of sodium borohydride. Continue with blocking steps at this point. Discard any leftover sodium borohydride solution as it loses its reactivity with time.

The protocol was prepared by Jennifer Kramer and revised by Ian Clements. A similar procedure is described in "An Improved Immunocytochemical Procedure for High-Sensitivity Detection of Incorporated Bromodeoxyuridine." W. Beisker, F. Dolbeare, J.W. Gray. Cytometry 8, 235 (1987).

Ian Clements, Molecular Probes, Inc.

EMPLOYMENT OPPORTUNITIES

➲ National asbestos testing firm seeks TEM analyst experienced in asbestos analysis throught the country. Salary range $30K–$50K depending on level of experience. TEM analyst positions also available in various locations nationwide. Medical/Dental benefits, vacation, 401K Plan. Call Dr. Peter Frasca, EMSL Analytical, Inc.: (609)858-4800, ext. 1241 or Fax resume at (609)858-4960..

➲ **Post Doc Positions:** High resolution *in situ* microscopy. Corrosion, advanced battery, electrochemistry, polymer, materials science, biology-SPM. Several locations: U.S., Japan, Europe.

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☎ **Hitachi SEM Model S-520.** In good condition and recently used. Specs include 6nm resolution, 20-200,000X mag., specimen goniometer stage with 0-40mm continuous movement in X & Y, -20 to +90 degree tilting angle, 5-35mm z-movement, 102mm dia. X 6mm H/15mm dia. X 10mm H specimen max size, 2 Afterglow type, 150X135 CRTs, 1 non-afterglow type 120x90mm photographing CRT, and Polaroid camera attachment. This system also includes a TracorNorthern TN-5500 MicroTrace Series X-ray Analyzer System with 1Mb RAM, Microscan Digital Beam Controller and all related system software. $20K or best offer. Contact Brett at (414)456-8504, email to schroedb@mcw.edu

☎ **Sorvall MT-2B, MT-2, MT-1 ultramicrotomes, GKM Glass Knife Maker, JB-4 microtome,** each complete with accessories and warranty. Reconditioned by factory trained rep. For prices, call Bill McGee (315) 451-1404, Microtome Service Company, Livermore NY

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EMPLOYMENT WANTED

➲ Microscopist with 12+ years experience seeking employment. Adept at light microscopy techniques, chemical microscopy, SEM/EDS, image analysis, XRD, IR, XRF, Published. Prefer southeast, but open to relocation for right position, contact Lou Solebello at microls1297@mindspring.com or (912)474-3962 for CV and references.

Position Opening:
TEM Instrument Specialist
Materials Characterization Facility
University of Minnesota

The Center for Interfacial Engineering at the University of Minnesota is seeking an instrument specialist as a staff member in its materials characterization facility. The facility houses 5 EM's, 6 XRD/SAXS instruments, several SPM's, micro-indentors, and other surface and thin-film analytical instruments. See our website for details (resolution.umn.edu). The person will work mainly in the EM laboratories. The principle responsibilities of the position include training researchers to operate transmission and scanning electron microscopes, maintaining and operating the TEM's (Phillips CM30 arid JE0L1210), and assisting users in TEM specimen preparation arid data interpretation. The position requires a Ph.D. in biosciences, materials science, physics or related discipline. Very strong hands-on experience in various TEM techniques and their application to materials characterization is required. Applicants should also have the experience and flexibility to work with other techniques. Experience in specimen preparation and working in a multi-user facility is particularly desirable. This is an annually renewable professional appointment; 12 month, 100% time regular appointment with excellent university benefits. Position and salary will be commensurate with education and experience.

Please send resume, three letters of recommendation and salary requirements to Elizabeth Guldan, Search Committee, Center for Interfacial Engineering, University of Minnesota, 187 Shepherd Labs, 100 Union St. SE, Minneapolis, MN *55455*. Screening will begin on January 31, 1999 and end when a suitable applicant is identified.

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