



MICROSCOPY 101

We appreciate the response to this publication feature - and welcome all contributions. Contributions may be sent to Phil Oshel, our Technical Editor at:

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How to Obtain Wrinkle-Free Semi-thin Sections From Plastic Embedded Samples

Thick sections become wrinkled when water is trapped beneath them as they dry on the hot plate. This technique is very effective for ridding sections of unsightly wrinkles:

- 1) Transfer sections from boat to water droplet on glass slide.
- 2) Place slide on hot plate set on warm heat.
- 3) As the sections expand, touch the edge of the water droplet with a wire loop or any other metal prod and "pull" the water droplet from beneath the floating sections. The water is attracted to the metal, so that as the water trails the metal, the sections are left behind. The sections are flattened

against the slide, with no water trapped beneath them. After sufficient drying, the sections may be stained as usual.

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A Tip on Solving BEEM Capsule Embedding Problems

BEEM capsules often do not allow for complete fluid exchange at their tips, especially the "conical tip" style capsules. This traps water or ethanol in the samples, which results in poor infiltration and soft blocks.

Increasing your infiltration time may give better results, although given the size of the area over which the exchange has to occur, the infiltration times have to be significantly increased, and the capsules rotated as well. One of the things that I do is to reduce the depth of the cylindrical section by filling it with 100% resin and polymerizing it before I place the sample in the tip. The depth of the cylinder can be tailored by the amount of resin used to fill the tip. When the specimens are ready to section, just cut the blank resin off the end of the block.

One of the side effects of doing this is to reduce the chatter that results from sectioning a long unsupported block tip. I use these style capsules in this manner when I have small amounts of sample that I cannot afford to loose. The method allows me to make a small well to catch the sample, but not have it out on the end of a long cylinder when I go to cut it.

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Also, I have had problems on occasion with infiltration when I have hard pelleted my material. Softer pellets seem to infiltrate better -- more spaces in the material to fill with resin?

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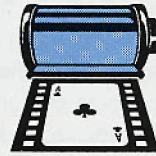
Storage of Mounted Paraffin Wax Sections

Paraffin wax sections, mounted on slides, dehydrate even if stored at refrigerator temperature, resulting in decreased stainability and often decreased reactivity in histochemical and immunohistochemical reactions. The tissue may also be attacked by fungi and insects during storage. A simple method for preventing this deterioration is to coat sections with a layer of paraffin wax.

Slides are heated to approximately 60°C, a few drops of molten paraffin wax applied and a second, heated slide, gently drawn across the surface to form a thin layer of wax over the section. Once cooled, slides may be stored in slide boxes either at room or refrigerator temperature. It is important when preparing the sections for staining that as much excess paraffin as possible be removed by gently melting the wax before the usual "dewaxing" in xylene or xylene substitutes.

Sections protected in this manner may be stored for several years without detectable changes in staining patterns.

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