

# Cleaning of Wehnelts.

To answer your question, I sure do know how to clean a Wehnelts! After almost 40 years in the business it seems to me that people still work with techniques that make this task far too complicated. Set out below is a technique that was developed, like many good ideas, from an initial mistake. Try this out and keep away from any technique that is going to take you hours to follow, there is no real point!

The procedure, like many other maintenance tips, is found on our "Monitoring and Maintaining the Electron Microscope" interactive CD.

There are two parts to an ideal cleaning procedure for an EM

1. Wet cleaning is by far the best route, no cotton, no particles, no fiddling, just liquids doing the job.
2. Having a solvent for the media that you wish to remove (in this case ammonia is a solvent for tungsten)

## The Procedure For W

The cathode assembly is placed, aperture face upwards, in a beaker of stock ammonia solution diluted 3 parts ammonia to one part water. The stock solution is normally about 40% ammonia. After a maximum of 15 minutes in the ultrasonic cleaner the beaker is placed under running water and thoroughly flushed through. Care should be taken to ensure that none of the clamping or alignment screws have fallen out of the cathode assembly and could be flushed away! The cathode is then washed with alcohol before being dried with a hair drier. A new filament is fitted and centred. The assembly is checked for cleanliness by observing with a 20X lens or binocular microscope prior to re installation in the microscope. Total time for this procedure less than 25 minutes.

## Safety

Great care was taken not to allow the ammonia solution to make contact with the skin or eyes of the operator. When flushing the solution through with water its flow should be set so as not to splash the solution over the operator prior to placing the beaker under the flow.

I know this works, try it?

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