

CARBON COATING GRIDS

Written October 2001

Always use freshly prepared carbon films.

STAGE ONE - Making the carbon films

1. Take a sheet of mica and bend one corner so that you see several constituent layers.
2. Peel apart two layers (you may be able to do this more than once). Do not touch the freshly cleaved side.
3. Lay the two sheets, freshly cleaved side up, on the carbon coater stage.
4. Place a 1cm wide piece of paper across the middle of the two sheets and secure this with two screws.
5. Coat the sheets with a thin coating of carbon – it should appear grayish/brown, not silver. If it is too thin it will not float off the mica in one piece, and if it is too thick you will not get any high resolution images in the TEMs.
6. USE THESE FILMS STRAIGHT AWAY AS THEY DO NOT KEEP.

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STAGE TWO – Depositing carbon onto grids

7. Secure the Buchner funnel in the vacuum flask and make airtight by checking the funnel seal and clip.
8. Place a piece of filter paper in the funnel.
9. Fill the funnel with water. If the funnel leaks, check the seal and the clip again until there is no water dripping into the flask.
10. Lay copper grids shiny side up onto the filter paper in a grid pattern. Any bench movement will disrupt this stage so make sure people around you are warned!
11. Carefully float the carbon film on the water surface by putting the mica (carbon side up) into the water at an angle of about 45°. Remove the mica from the water.
12. Let the water out of the funnel slowly, guiding the carbon film so that it will fall onto your grids. NB. the film is very delicate so be gentle!
13. Remove the wet filter paper and place it in a petri dish and let it dry in the glass oven overnight. Remember to label the petri dish.