TEM Grid Loading Procedure

This guide details how to properly load a TEM grid on the grid holder for use with the XL830 DualBeam Microscope and the TEM sample preparation (liftout) guide.

Locate Materials

Locate the following items in the desk near the XL830 workstation:

- Gloves
- TEM Grid Holder
- TEM Grids
- SEM Stub Holder
- Forceps

Gather the materials and move to the room adjacent to the SEM/DualBeam room (G44M). You may wish to use the Stereoscopic Microscope to precisely place the grid.

Load Grid onto Holder

1. Carefully loosen the screw on the TEM grid holder.
2. Use the forceps to remove any grids that have been left by previous users.
3. Place the grid holder and SEM stub holder on the microscope stage. Turn on the microscope lights.
4. Remove the lid on the TEM grid bottle. Carefully tilt the bottle and collect a grid with the forceps.
5. Attempt to place the grid in one of the empty slots on the holder (see images). Note that the grid is asymmetric, with one side having a longer end. Place the high end toward the outside of the grid holder.
6. When the grid is loosely in place, begin to tighten the screw on the holder, but do not tighten firmly. You will likely need to horizontally align the grid before use.
7. Using the forceps, horizontally position the grid by pushing down on one side of the grid while it is in place (if necessary).

Once the grid appears horizontally aligned, tighten the screw all the way. The grid is now loaded.
Transfer Grid + Holder to DualBeam Loadlock

Place the grid holder on the multi-stub holder along with any other samples you will be working with; place the multi-stub holder in the Loadlock. Click “Load” in the software or press the physical Load button near the LoadLock.

Check Placement with e-Beam

Once the grid holder has been loaded, it is a good idea to check the placement of the grid in the holder using the e-beam. Navigate to the position where the grid holder is located. Locate the grid itself (it will appear as a thin line while the stage is set to 0 tilt). Keeping a large working distance, tilt the stage and observe the placement of the grid. Both a “good” and “bad” placement are shown below.

If the placement is to your liking, you may begin the liftout procedure.

Ex: Good Placement

Ex: Poor Placement