Nano Particle Grid Preparation

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1. First step is to select the grid for the job. We have a handout in the lab in the grey inboxes on the South side of conference room. Please ask us if you have questions, we are here to help. An ounce of preparation saves a pound of grief later! Ultrathin carbon or holey carbon is the best suited for fine nanoparticles. If beam stability becomes an issue, you will need to up the thickness of carbon. If I were to by one grid it would be a Ted Pella 08142 or 08142G(gold), this is a 300 mesh grid with a ultrathin carbon support film for high resolution imaging. It is more fragile than a traditional carbon coated Formvar but offers high resolution TEM imaging in the holes!

A new alternative is Quantafoil from EMS, EMS numbers such as Q225-CR2. Quantafoil makes low dose techniques work as the hole pattern is regular and the beam can be shifted a preset amount every time.

1. Plasma treat your grids to make them hydrophilic (attract water). We do this with the home built glow discharge in the EM Facility sample preparation room. But, we just ordered an EasiGlow system from Ted Pella to make it easy for students.
2. Now get 3 tweezers with O ring to lock the jaws of the tweezer. Pick up a grid in each tweezer and lock it in with an O Ring. There is a handout in the lab of supplies that will make grid handling easier.
3. Now dispense 2-3 uL of your nanoparticle suspension on the grid.
4. Wick off excess after 1 -2 minutes.
5. Let it dry overnight in a clean dry nitrogen cabinet or a desiccated cabinet.
6. Release your grid into a grid box by moving the O Ring off the tweezer.
7. Lab staff will be happy to show the fine points for grid preparation.