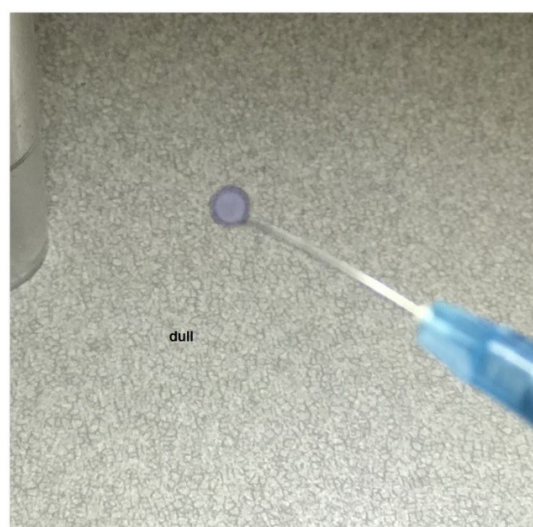# Sample Preparation

Grids

> **Grids to Get:** Grids 25 um thick, 3 mm in diameter, film on "dull" side, "shiny" side has the metal only, the dull side has the film

- Ultrathin Carbon Film on a Lacey Carbon Support Film
- https://www.tedpella.com/Support_Films_html/Support_Films_and_Substrates_Overview.aspx
- 01824 Ultrathin Carbon Film on Lacey Carbon Support Film, 400 mesh, Copper
- 160 PELCO® TEM Grid Storage Box

Basic Shake and Bake

Put a small amount of powder in Eppendorf tub (enough to coat the bottom). Put one grid into the tube. Close the tube and shake for 1 minute. Open the tube and remove the grid. The grid should have enough material on it and is ready to be imaged in the TEM.

Instructions for Nanoparticle Dropcast TEM sample preparation

Things you will need:

- Ethanol (or water, IPA, or dimethyl carbonate)
- A small metal scooper
- A sonicator
- Several small vials that are centrifuge compatible
- A centrifuge

- Nanoparticles
- UltraThin 3 nm Carbon Grids
- Glass slide

1. Check the MSDS for mixture with ethanol (make sure the nanoparticles are NOT pyrophoric)

2. Use the small metal scooper to extract about ½-1 cms worth of nanoparticles

3. Place the nanoparticles in a small vial

4. Fill the small vial with ethanol up to the 1 cm below the rim

5. Sonicate the filled small vial for 10 minutes on high power (make sure to find an anti-node)

6. Centrifuge for 20 minute (make sure to balance the centrifuge)

7. Use a pipette to collect several uL of fluid just above the concentrated part at the bottom of the vial. See the arrow below . The pipette should just touch above dark part.

8. Deposit 1 uL of fluid onto the dull (not shiny) side of the grid.

9. Let the grid dry on a glass slide.

10. Vacuum bake at 50-400 degree C for several hours if contamination is found of the surface.

11. Plasma clean as needed.