

Materials:**Two Copper sheets, each roughly 2 cm x 2 cm****Silver nitrate solution******Heptadecafluoro-1-decanethiol (HDFT)******11-mercapto-1-undecanol (MUO)******Ethanol******De-ionized water****Sandpaper****Tweezers****Goggles****Nitrile gloves**

****Solutions have already been prepared in labeled beakers. You must read the provided MSDS as part of your pre-lab assignment.**

1. Place the two copper pieces on a fresh paper towel. Using a piece of sandpaper, sand both sides of the copper pieces until each surface is shiny.
2. Pick up the sanded copper pieces with tweezers and rinse both sides with water for 5 seconds, followed by ethanol for 5 seconds.
3. Place the cleaned copper pieces in the silver nitrate solution and swirl the solution containing the copper for 25 seconds.
4. Remove the copper pieces with tweezers and rinse both sides with water for 5 seconds.
5. Dry both sides of each copper sheet with compressed air. Blow across the surface, not directly at the surface, being careful not to blow too hard with the compressed air. The surface should look silvery-black.
6. Place one silver-coated copper piece in the HDFT solution and one copper piece in MUO solution. Let both soak in solution for at least 10 minutes.
7. After 10 minutes, take out the copper pieces from the HDFT and MUO solution. Wash both pieces with ethanol for 5 seconds and then dry both with compressed air. Keep track of which surface is which.

Compare how water drops behave on your two prepared specimens to how they behave on the cleaned reference set of copper plates at the front of the room. We will perform further characterization, so protect the surfaces.