

Cressington 108 SEM Sputterer

Standard Operating Procedure, 03/11/2020

Kevin Roberts (rober074@umn.edu)

The Cressington sputter coater is used to deposit very thin (3-5 nm) gold films on samples to reduce charging during SEM imaging or electron-beam lithography. The rate of deposition is approximately 5 nm for every 15 seconds.

1. Enable in Badger. **Red power switch** will not work if not enabled.
2. Lift the lid of the coater off the bell jar and swing it out of the way. The seal between the bell jar and lid/base may stick slightly; rock it gently to loosen.
3. Remove the bell jar and place it on a clean wipe.
4. Place your sample face-up on the stage. For samples already mounted on SEM pin-mount stages, place the pin in one of the mounting holes on the stage.
5. Put the bell jar back and place the lid on top, making sure the top and bottom seals are lined up.
6. Turn the system on with the **red power switch**. The system will pump down and should reach vacuum in about 15 to 30 seconds. Pump to <0.1 mbarr base pressure.
7. Press **MANUAL**.
8. To adjust the time of deposition, hold the **PAUSE/TEST** button down while also pressing either of the **SET** arrow buttons (up or down arrows). Timer will display the length of time selected in seconds. 15 seconds equals approximately 5 nm of film.
9. Press **LEAK**, which causes the Argon to flow. Allow pressure to rise to 0.1 to 0.2 mbar.
10. Press **START**. The plasma will light and the countdown will begin.
11. Once completed, turn **red power switch** off, which will vent the system. Remove sample from system once vented.
12. Leave system vented.
13. Disable in Badger.