

**Specification for Dual Coater for preparing samples for SEM**

1. The system should be a compact coating system that can be used both as a sputter coater as well as a carbon fibre coater
2. Should allow sputtering of a wide range of non-oxidising (noble) metals, such as Au, Pt, Ag and Pd. Sputtering should be possible for 0-80 mA to a pre-determined thickness or by the built-in timer
3. The system should have quick release sputter insert and carbon fibre evaporation insert.
4. Should be equipped with carbon evaporation gun that is simple in operation yet robust featuring pulse evaporation that ensures reproducible carbon evaporation from fibre, cord or rod sources
5. The system should be equipped with proper control of evaporation current profile that ensures consistent reproducibility of carbon films.
6. System should be equipped with rotation stage, at least 50 mm Ø with adjustable height for target to sample distances of 38mm-79 mm.
7. Should have additional specimen stage, at least 50 mm Ø, that would allow rotate-tilt specimen stage with adjustable tilt (up to 90 degrees) and height ranging between 37 mm-60 mm. Stage rotation speed should be variable between 8 and 20rpm
8. It should be possible to perform at least upto 60 minutes of sputtering without breaking vacuum.
9. System should be able to store multiple user defined coating protocols.
10. The system should be fully automatic (touch screen control preferred) and should have Intuitive full graphical interface with touch screen buttons. System should be able to display features such as reminders for when maintenance is due and a log of the last ten coatings carried out
11. System should have automatic recognition system to detect the type of coating insert fitted and display the appropriate operating settings.
12. The system should have specimen stages that are drop in style and easy to change
13. The system should be supplied with an additional sputter insert (entire sputtering assembly) for quick metal change
14. The system should be supplied with 2 Stage Oil Sealed Rotary Vane Pump or any other kind of pump appropriate for the system, with vacuum hose, coupling kit, oil mist filter and appropriate gauge for vacuum measurement.
15. The system should have a minimum of three years warranty
16. The quote should also include Two-year spares kit for the system that would include 0.1 mm gold target of appropriate diameter, carbon fibre /cord, standard glass chamber assembly, quartz crystals, O-rings, springs etc.

### **Specification for Critical Point Dryer**

1. The system should have built-in adiabatic cooling and thermoelectric heating and of +5°C cooling and +35°C during heating so that the critical point is accurately achieved.
2. The system should have a vertical pressure chamber with top filling and bottom draining facility. The size of the chamber should be at least 32mm Ø x 47mm.
3. The vertical pressure chamber should have side-viewing port that allows a clear view of the liquid meniscus during filling.
4. The system should be fitted with valves for fluid inlet, flushing and a gas venting system which uses a fine needle valve to give controlled pressure let down. This precise control of decompression is mandatory to avoid potential damage to specimens by uncontrolled pressure release
5. System should have temperature monitoring and control with thermal cut-out protection
6. System should have pressure monitoring system with safety cut-out for over pressure
7. Should have a built-in magnetic stirrer to ensure thorough mixing of specimens with circulating fluids and enhanced solvent exchange.
8. System should have easy to operate valves for opening and closing
9. Along with the system the following items should be quoted:
  - a) Standard specimen holder with 10-12 individual specimen wells
  - b) Glass microscope slide/cover-slip holder
  - c) TEM grid holder
  - d) Holder for bulk samples
  - e) Holder for porous pots and pots
10. The system should have a minimum of three years warranty