

Coater Leica EM ACE600 – Sputter, carbon and glow discharge coating system

The ACE600 is an easy operating desktop coater, designed to produce homogeneous coatings of conductive metal or carbon as required for electron microscopy. The fully automated instrument can be configured either as a sputter coater, a carbon thread evaporation coater or a glow discharger (to make TEM grids hydrophilic). Includes Quartz crystal measurement for reproducible layers, plain or planetary rotary stage for evenly distribution of the coating on the sample. Glow discharge unit,

Sputter coating: When a target is bombarded with fast heavy particles, erosion of the target material occurs. The process, when occurring in the conditions of a gaseous glow discharge between an anode and cathode is termed sputtering. Enhancement of this process for scanning electron microscopy (SEM) sample coating is obtained by the choice of a suitable ionization gas and target material. Sputtered metal coatings offer the following benefits for SEM samples:

- ✓ Reduced microscope beam damage.
- ✓ Increased thermal conduction.
- ✓ Reduced sample charging (increased conduction).
- ✓ Improved secondary electron emission
- ✓ Reduced beam penetration with improved edge resolution
- ✓ Protects beam sensitive specimens

Carbon coating: Formvar film is useful for the support of ultrathin sections on the finer mesh grids. Using of support film are ideal for those applications requiring large viewing areas without grid bar interference. These films must be strong, clean and remain attached to the specimen grids during specimen preparation. A Formvar film covered with a "light" layer of carbon will help to stabilize the film when the film is exposed to the electron beam.

Glow discharge: To ensure a smooth, even spread of sample and stain, the support film must be hydrophilic. A freshly carbon-coated grid will provide good spreading, but older grids may not. Methods for returning hydrophobic grids to a state where they will provide an acceptable stain is to glow discharge them the grids with support films prior to adsorbing the virus suspension.

