

ET-010 Etching-Unit for CCU-010

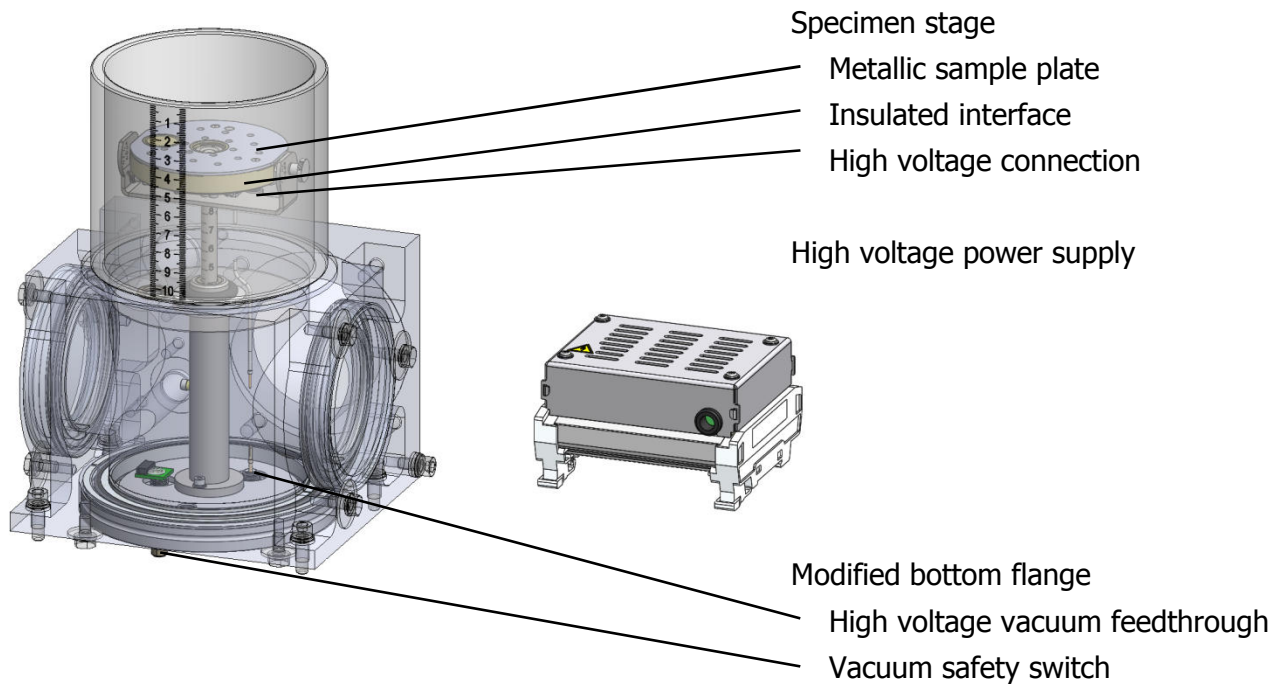
For specimen pre-treatment or after-treatment combined with a coating process the Etching-Unit allows to apply plasma to the substrates. With this accessory one can select Argon, extra etching gas or environmental air either as process gas. This allows cleaning of the samples prior to a coating and increasing the adhesion of thin films to the substrate by plasma-pre-treatment. Additionally it would be possible to modify the surface properties of a thin film by a plasma treatment after the coating. With air plasma it is possible to turn a thin carbon layer from hydrophobic to hydrophilic par example.



Highlights:

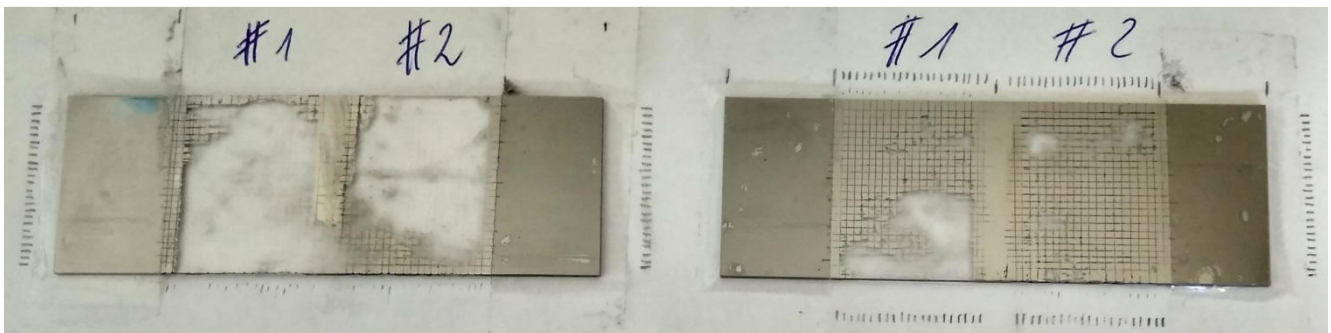
- Insulated specimen stage for plasma treatment
 - Metallic sample plate Ø 80mm to apply negative high voltage to the samples
 - Recess for SEM pin stubs
 - Two quartz positions (center / edge)
 - Compatible to CCU-010 height adjustable tilting stage
 - "Plug and play" exchange with standard stage and rotary stages
- Compatibility to SP-010 / SP-011 sputter unit and to CT-010 Carbon evaporation unit
- Process pressure selectable from 2e-1 ... 1mbar
- High voltage power supply for 10 ... 50mA plasma current
- High voltage connection to sample plate
- Full integration into CCU-010 human machine interface

Basic containing:



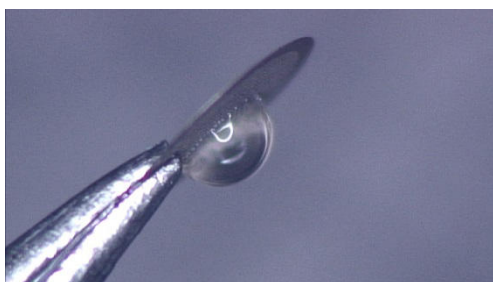
Application examples

Adhesion test according DIN EN ISO 2409:2013 "Cross Cut Test" on IPA cleaned cover glass with a 200nm Tungsten coating in CCU-010 high vacuum system @ 50mA / 9E-3mbar.

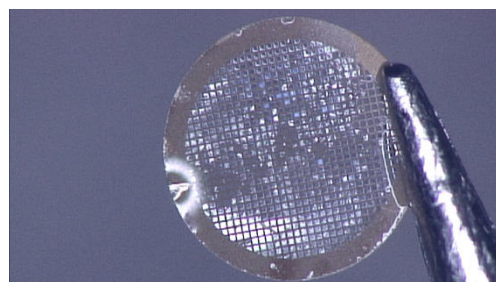


Coated without Argon plasma pre-treatment

Coated after 300s Argon plasma pre-treatment @ 15mA / 4E-1mbar



Water droplet on 10nm carbon coated Formvar without plasma-after-treatment
→ hydrophobic surface



Water film on 10nm carbon coated Formvar with 60s air-plasma-after-treatment