

SMS (Spectroscopy and Microscopy on Surfaces)

Objectives

Studying the surfaces of different materials, such as: Pyrite, Gold, SiC, etc..., and their interaction with deposited organic molecules to model the prebiotic reactions that occurred during the origin and first stages of evolution of the life.

Environmental conditions

- Sample temperature range: from 300K to 1200K in sample holder computer controlled (different sampler's holders; thermal contact and field emission).
- Atmosphere: vacuum base pressure 10^{-10} mbar by turbo pumps, ionic pumps, TSP and NEG.
- Irradiation: He I-II discharge lamp, electrons (5KV), ions (5KV), X-Ray (K_{α} and Al_{α}).
- Evaporation with different types of evaporators, (solid, dust)

Analytical Techniques

- XPS (X-Ray Photoelectron Spectroscopy).
- UPS (UV Spectroscopy).
- LEED (Low Electron Energy Diffraction).
- AES (Auger Electron Spectroscopy).
- TPD (Thermal Programmed Desorption).
- STM (Scanning Tunneling Spectroscopy).

