

# IE3C (Irradiation and Evaporation in Extreme Environments Chamber)

## Objectives

Testing instruments and devices in vacuum. Space qualification of instrumentation. DHMR and outgassing control in planetary protection procedures. Molecular deposition in surfaces. Liquid deposition in vacuum.

## Environmental conditions

- Temperature range: from 300K to 1100K in sample holder computer controlled (different sampler's holders).
- Atmosphere: vacuum base pressure  $10^{-9}$  mbar by turbo pump and NEG pump.
- Irradiation: Deuterium lamp, He I-II discharge lamp, electrons (5KV) and ions (5 KV).

## Technical parameters

- TPD (Thermal Programmed Desorption), in real time with QMS 200 uma.
- ALI (Atomic Layer Injection), liquid organic samples injection in UHV.
- Membrane pump and two serial TMP (Turbo Molecular Pump) with NEG pump.
- Sample size: should fit on a 10x10mm, and 50x50mm with ceramic oven. Possibility of ad-hoc sample holders.
- Molecular evaporators in 25°.
- QMB (Quartz Micro Balance), for testing outgassing and coating.
- Turbo pump with double orientation, for liquid and solid coating.

