

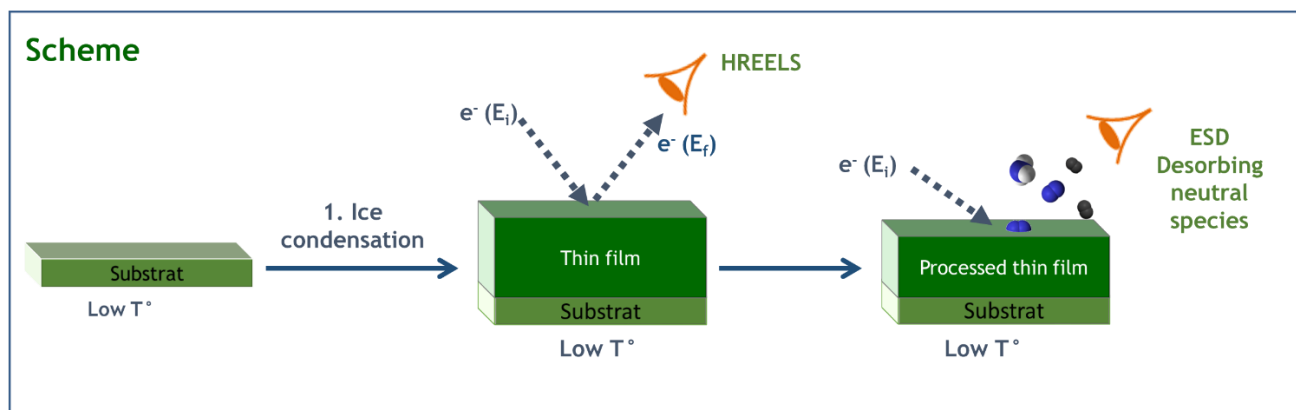
Chemistry induced by low energy electrons on thin film.

Location: ISMO Univ.Paris-Sud Orsay

Researcher in charge of the Trainees: Dr. Lionel Amiaud, Pr. Anne Lafosse

Maximum number of Trainees: 3

Experiment:



The “E_Solid” experiment is designed for identifying chemical processes induced by low energy electron on surfaces by the mean of HREEL (High Resolution Electron Energy Loss) spectroscopy and by mass spectrometry. Thin film can be deposited at cryogenic temperature and irradiated by low energy electrons (0-50 eV). HREELS is a surface sensitive tool that can be used to probe molecular composition of the first nanometers at sample surface, and counterparts of dissociation mechanism induced be electron impact are detected as neutral fragments released in gas phase (ESD, for electron stimulated desorption).

Schedule expected:

The Trainees will participate to the search of chemical processes induced by low energy electrons impact in thin film. Both vibrational signature recorded by HREELS and film irradiation can be considered. Depending on measurement results, interpretation could be done on acquired data or on previous experiments.

References:

- [1] J. Houplin, C. Dablemont, L. Sala, A. Lafosse, and L. Amiaud, “Electron Processing at 50 eV of Terphenylthiol Self-Assembled Monolayers: Contributions of Primary and Secondary Electrons,” *Langmuir*, vol. 31, no. 50, pp. 13528–13534, décembre 2015.
- [2] J. Houplin *et al.*, “Selective terminal function modification of SAMs driven by low-energy electrons (0–15 eV),” *Phys. Chem. Chem. Phys.*, vol. 15, no. 19, p. 7220, 2013.