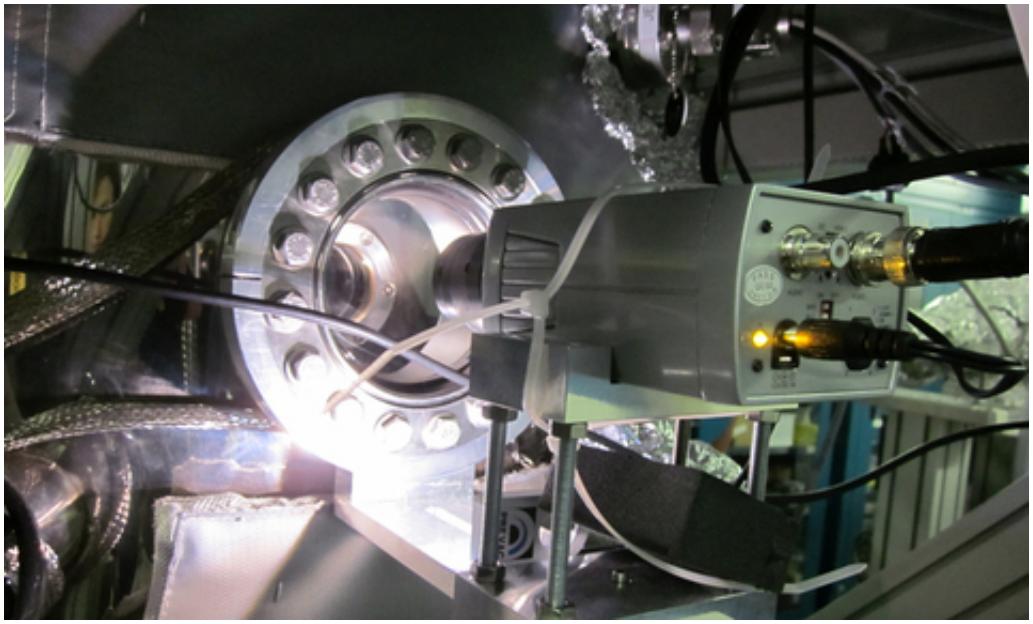
Physical and chemical characterization of surfaces at different scales

Reference: 944



OBJECTIVES

• To give the theoretical notions of surface characterization and also to provide the experimental basis in order to understand the potential of different techniques used.
• To have the opportunity to participate in an analysis, from the setting up of samples to the acquisition and interpretation of analytical data, thanks to the means made available.
• To present the complementarity between laboratory and X-ray based techniques for the study of different physical and chemical surface phenomena.

PUBLIC

PhD students, post-docs, scientists working at European research institutions and young professionals working in material industry.

A poster session will be organized during the training session. The attendees are invited to submit a short abstract, using the abstract template.

CONTENT

- Introduction to surface analysis:
• Notions of surface**,**
• Introduction to synchrotron X-ray,
• Photon-matter interaction,

• Electron-matter interaction.

- Laboratory conventional techniques:
• Vibrational spectroscopy,
• Scanning probe microscopy.

- Synchrotron based techniques:
• X-ray microscopy,
• Photoemission X,
• Absorption X,
• X-ray diffraction and scattering.

- Practical experience: conventional and Synchrotron based techniques.

METHOD

In the framework of a multi-disciplinary approach joining together specialists of materials science, solid-state physics, physico-chemical interface from CEA, Synchrotron SOLEIL and Paris-Sud University, it will be possible to describe the global behaviour of the surface from the microstructure and physical mechanisms at the micro- and nanoscopic scales.

Maximum number of trainees: 30.

COLLABORATION

Rachid Belkhou (Synchrotron SOLEIL)