

UE Advanced characterization for Nanostructures

+5

Level Baccalaureate

ECTS 3 credits

Component **UFR PhITEM** (physique, ingénierie, terre, environnement, mécanique)

Semester Automne

- > Teaching language(s): English
- > Open to exchange students: Yes
- > Code d'export Apogée: PAX9NPAM

Presentation

Description

This course will be dedicated to advanced characterization techniques of nanostructures. It will cover electron microscopy techniques (electron diffraction, loss spectroscopy, imaging), X ray spectroscopy and scattering techniques and Synchrotron radiation measurements.

Content

X-ray scattering (from single electron to periodic material, anomalous scattering) Reciprocal space (reminder + Surface sensitive X-ray scattering X-ray absorption fine structure Examples of application : strain and composition determination, in situ studies of growth Introduction to the X-ray synchrotron radiation production (including the forth generation source like the ESRF Extremely Brilliant Source) Coherent X-ray scattering and X-ray photon correlation spectroscopy The basis of electron microscopy Electron diffraction and Electron loss Spectroscopy Imaging and chemical sensitivity (Transmission Electron Microscopy and Scanning Transmission Electron Microscopy)







Case studies

Course parts

UE Advanced characterization for Nanostructures - CMTD

Period : Semester 9

Lectures (CM) & Teaching Unit (UE)

24h

Useful info

Campus

> Grenoble - University campus

