Applied material physics

Introducing

Description

The experiments seen in practical work are: quantitative metallography, calorimetry, tensile tests, hardness, crystalline defects, crystallization and recrystallization, and anisotropic properties.

The concepts covered are optical microscopy, phase diagrams, image processing, calorimetry, phase transitions, mechanical properties, structural hardening, defects and crystal growth, wave propagation in anisotropic medium.

Objectives

This UF constitutes an experimental approach to the physics of materials. The educational objectives are:
- acquire scientific knowledge relating to the techniques used in material science
- acquire practical skills on these techniques,
- acquire an experimental work method in physics (how to choose the experimental parameters, carry out the experiment, analyze the results)

The student should be able to:
- reproduce and apply techniques for the development and characterization of materials among the techniques mentioned in the program.

Necessary prerequisites

- Thermodynamic prerequisite : The following notions must be seen before the practicals: enthalpy, heat capacity and phase diagram.

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

Toulouse