



CHM1251 Elements of crystallography and molecular spectroscopy

[60h+30h exercises] 8 credits

Teacher(s): Jean-Paul Declercq, Jean-Louis Habib Jiwan
Language: French
Level: First cycle

Aims

1st part - Crystallography :

Understanding symmetry and in particular molecular symmetry.

Comprehension of modern crystallographic analysis methods and the results they allow to achieve.

2nd part - Molecular spectroscopy :

Acquisition of general principles of molecular spectroscopy.

Mastering the bases of the most current of spectroscopies.

Main themes

First part - Crystallography :

The systematic study of the symmetry of finite and infinite objects. Molecular symmetry and representation. Point groups and space groups. Application to crystal state ; notions of systems and lattices. Introduction to X-ray diffraction by crystals and determination of crystal and molecular structures.

2nd part - Molecular spectroscopy :

Initiation to molecular spectroscopy and presentation of most current spectroscopies such as infrared, RMN, electronic absorption, Raman, etc. The course includes an introduction to mass spectroscopy.