Course unit : CRYSTAL CHEMISTRY AND LOCAL STRUCTURE OF CLAY MINERALS (56h – 6 ECTS – compulsory)

Content

Interactions between radiations and solid matter

Vibrational spectroscopies ; IR - Raman

EPR spectroscopy ; Transition elements - defaults

NMR spectroscopy

X absorption spectroscopy

Mössbauer spectroscopy

Some examples of integrated studies

Learning outcomes

The objective of this course is to provide the students with :
i) a theoretical background to understand the physics of interactions between radiation and solid matter involved in the investigation of crystal chemistry and local structure
ii) a thorough understanding of the crystal chemistry and local structure of clay minerals
iii) an updated view of the recent advances on spectroscopies and their capabilities and limitations
iv) hands-on experience of these modern techniques

Horary

Lecture : **27h**
Supervised works : **23h**
Practical works : **6h**

Evaluation

Final examination : 50% of the mark
Evaluation during the teaching period : 50% of the mark

Teaching staff

Alexandre Simionovici (UJF, University of Grenoble)
Sabine Petit, (CNRS, Poitiers)
Thierry Allard, (CNRS, Paris VI)
Guillaume Morin, (CNRS, Paris VI)
Claire Marichal Westrich, (University of Mulhouse)
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