Basic and advanced NMR - Level 1 A (EPFL)

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Cursus

Chimie et génie chimique

Sem.  

Type  

Obl.

Language  

English

Credits  

2

Session  

Oral

Exam  

60h

Workload  

60h

Hours  

43

Lecture  

20

Practical work  

23

Number of positions  

12

Frequency

Every year

Remarque

Next time: January 2020 (Block)

Summary

Basic theoretical and experimental aspects of NMR will be taught. Students will be familiarized with modern NMR spectrometers.

Content

Basic theoretical and experimental aspects of NMR will be taught. Students will be familiarized with modern NMR spectrometers (shimming, locking, tuning, pulse length determination etc). Furthermore they will learn basic NMR experiments: 1H and 13C NMR, different decoupling schemes, relaxation measurements, spin echo techniques, coherence transfer experiments (INEPT), etc. NMR of quadrupolar nuclei and of nuclei with low sensitivity will be treated. The primary intention is to teach PhD students and post-docs so that they can benefit from the NMR spectrometers available at EPFL, and to give them a sound foundation in NMR for various applications in organic and inorganic chemistry. PhD students and post-docs who have followed the course successfully should be able to perform standard NMR experiments independently. They should also be able to help colleagues in various research groups who wish to use NMR.

Passing the theoretical and practical exams will give 2 credits to PhD students.

Learning Prerequisites

Recommended courses

Résonance magnétique nucléaire(3rd year course by G. Bodenhausen) or equivalent