



CD301 Jan 3:0

Advanced NMR Spectroscopy

Instructor

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Teaching Assistant

Not Applicable
Email: Not Applicable

Department: NMR Research Centre

Course Time: Tue, Thu 11:30 - 13:00

Lecture venue: NMR Research Centre Lecture Hall

Detailed Course Page: <http://nrc.iisc.ernet.in/nsp/1.html>

Announcements

Brief description of the course

Course provides the advanced NMR techniques, where a wide range of methodologies are covered, including their theoretical description and their applications. By the end of the course, the students would be familiar with the latest state of the art developments in NMR spectroscopic techniques.

Prerequisites

Basic knowledge of fundamentals of NMR

Syllabus

Basic principles of two-dimensional (2D) NMR spectroscopy, 2D line shapes phases and filtering. Resolved 2D spectroscopy Correlated 2D experiments (COSY, TOCSY, etc.) involving homo-nuclear and heteronuclear correlations. 2D multiple-quantum spectroscopy 2D relaxation experiments (NOESY, ROESY). Multinuclear 2D and 3D experiments such as HSQC, HMQC, HNCA and HNCA (CO) etc. Introduction to coherence level diagram, product operator formalism, phase cycling and gradient-enhanced spectroscopy. Two-dimensional NMR of solids. NMR imaging. Applications of two and three-dimensional NMR experiments for structure determination of large molecules.

Course outcomes

Prepares the students to be self reliant in dealing many structure and conformational problems encountered in chemistry and biology.

Grading policy

Relative grading.

Assignments

Regular assignments will be given and students are also assessed by asking them to give the seminars on the specified topics.

Resources

Many advanced books on NMR and the latest published literature.