

About the Seminar

Determination or confirmation of molecular structure for a chemical entity is essential to understand its properties and applications. This can be performed with a combination of analytical techniques like Nuclear magnetic resonance (NMR) spectroscopy, mass spectrometry, infrared spectroscopy, elemental analysis and single crystal X-ray diffraction.

NMR spectroscopy is used to study the structure of molecules, the interaction of various molecules, the kinetics or dynamics of molecules and the composition of mixtures of biological or synthetic solutions or composites. The size of the molecules analyzed can range from a small organic molecule or metabolite, to a mid-sized peptide or a natural product, all the way up to proteins of several tens of kDa in molecular weight. High resolution 1D and 2D NMR spectroscopy can be used to determine the atomic connectivity and structural conformation of molecules in solution. Both ^1H and ^{13}C NMR spectroscopy provide detailed information about molecules. Various 2D proton NMR correlation experiments such as COSY, TOCSY, and NOESY enable one to determine the relative locations of protons or the conformation of a molecule in solution. Additional 2D proton-carbon NMR correlation experiments such as HMQC, HSQC, and HMBC can be used to connect the carbon backbone of complex molecules. These NMR techniques are used to determine the assignments of all resonances for a molecule and knowledge of the relative position of each nucleus permits the determination of the molecular conformation in solution.

NMR nuclear spectroscopy complements other structural and analytical techniques such as X-ray, crystallography and mass spectrometry. NMR's advantage is the unique ability of a nuclear spectrometer to allow both the non-destructive and

the quantitative study of molecules in solution and in solid state, as well as to enable the study of biological fluids. The expansion of NMR Spectroscopy to Magnetic Resonance Imaging (MRI) by the application of magnetic field gradient pulses provides multidimensional images and spatially resolved spectroscopic information.

With this in view, the two days seminar aims to provide in-depth knowledge about the fundamentals and applications of various NMR techniques and for obtaining complex structural information.

The entire seminar for two days will be conducted by Prof. D. I. Brahmhatt (Retd.), from Sardar Patel University, Vallabh Vidyanagar. Prof. Brahmhatt is a well-known expert in NMR spectroscopy and chemical characterization.

About the Department

Department of Chemistry, Gujarat University is one of the oldest departments in the state of Gujarat. It was established in 1958 and since its inception the department has earned reputation both on the area of post-graduate teaching and research. The department has been recognized as a Centre of Excellence in Supramolecules and Nanomaterials by Gujarat Council of Science and Technology, Gujarat. It is covered under UGC Special Assistance Programme (DRS III) in the thrust area of Supramolecules and Nanomaterials and also covered under DST-FIST, Phase I, New Delhi. The department offers post-graduation in analytical, inorganic, organic and physical chemistry along with M.Phil. and Ph.D. programs. The department is well-known for its research activities and has very well equipped research laboratories and library facilities. The main areas of research include: Supramolecular Chemistry, Nanochemistry, Corrosion, Bioanalysis, Medicinal Chemistry, Computational Chemistry, Liquid Crystal and Co-ordination Chemistry.

Registration Form

**Nuclear Magnetic Resonance (NMR) Spectroscopy:
Concepts and Applications
24th and 25th August 2018**

**Gujarat University Senate Hall
Ahmedabad**

Full Name: _____

Designation: _____

Organization: _____

Address for correspondence: _____

Telephone: _____

Mobile: _____

Email: _____

Online Registration :

<https://goo.gl/forms/zjOXXUkngF96X9Hm1>

Delegate Type: Student Academic Research Institute

Registration Fee Amount (Cash/DD): _____

Signature of the Participant: _____

Date: _____

Registration Fees

Students/Research Scholars (SOS) : **Rs 50/-**
Students/Research Scholars (PG Centres) : **Rs 200/-**
Faculty/Industry members : **Rs 250/-**

Last Date for Registration: 21st August 2018

Two Days Seminar
On
**Nuclear Magnetic Resonance
(NMR) Spectroscopy: Concepts
and Applications**

24th and 25th August 2018
Jointly Organized
By



Department of Chemistry
School of Sciences
Gujarat University
Ahmedabad-380009
Gujarat, India
&



Oxygen Healthcare Research Pvt. Ltd.,
Sharmista Research Centre
Plot -35, Panchratna Ind. Estate,
Changodar, Ahmedabad - 382213
Gujarat, India

Venue: Gujarat University Senate Hall

About the o2h

o2h co-innovates, co-creates and co-executes across boundaries to collaboratively innovate in science, technology and social enterprise.

o2h has a track record of nurturing and investing in emerging life science and tech companies, covering biotech, small molecule, biologics, digital health, software and social enterprise.

o2h Discovery has an integrated drug discovery platform operating from the state-of-the-art research centre in India.

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The detailed schedule of the session is as under

Time	24/08/2018	25/08/2018
8.45-9.15	Registration	---
9:15-9:30	Inaugural	---
9.30-11.00	Session 1 (¹H-NMR)	Session 5 (2D-NMR)
11.00-11.15	Tea	Tea
11.15-1.15	Session 2 (¹H-NMR)	Session 6 (2D-NMR)
1.15-2.15	Lunch	Lunch
2.15-3.45	Session 3 (¹H-NMR)	Session 7 (2D-NMR)
3.45-4.00	Tea	Tea
4.00-5.30	Session 4 (¹H-NMR)	Session 8 (2D-NMR)

Patron : Prof. (Dr.) Himanshu Pandya
Honorable Vice-Chancellor
Gujarat University, Ahmedabad

Convener: Prof. Hitesh D. Patel
Department of Chemistry
Gujarat University

Advisory Committee:

Prof. R. G. Bhatt (Gujarat University)
Prof. N. K. Shah (Gujarat University)
Prof. R. J. Verma (Gujarat University)
Prof. N. K. Jain (Gujarat University)
Prof. R. M. Rawal (Gujarat University)
Prof. P. N. Gajjar (Gujarat University)
Prof. A. U. Mankad (Gujarat University)
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Hemal Soni (Head -Chemistry, o2h)
Sudipta Mukherjee (Head -Analytical, o2h)

Organizing Committee:

Prof. V. K. Jain (Gujarat University)
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Dr. J. J. Maru (Gujarat University)
Bhargavi Jansari (Manager - HR, o2h)
Shabu Thomas (Operations Manager, o2h)