

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Chemistry and Biochemistry - NOC:One and Two Dimensional NMR Spectroscopy: Concepts and

Subject Co-ordinator - Prof. N. Suryaprakash

Co-ordinating Institute - IISc - Bangalore

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Nuclear Spin
- Lecture 2 - NMR spin physics - I
- Lecture 3 - NMR spin physics - II
- Lecture 4 - Energy levels and allowed transitions
- Lecture 5 - Transitions in coupled spin systems
- Lecture 6 - Interaction parameters
- Lecture 7 - Chemical Shifts
- Lecture 8 - Shielding and deshielding, ppm and frequency scales
- Lecture 9 - Factors affecting the chemical shifts
- Lecture 10 - Scalar couplings
- Lecture 11 - Scalar couplings
- Lecture 12 - Coupling mechanism
- Lecture 13 - Splitting patterns
- Lecture 14 - Multiplicity patterns
- Lecture 15 - Analysis of multiplicity patterns
- Lecture 16 - Coupled spin system
- Lecture 17 - Nomenclature for coupled spins
- Lecture 18 - Energy levels of two and three coupled spins
- Lecture 19 - Analysis of  $^1\text{H}$  NMR spectra - I
- Lecture 20 - Analysis of  $^1\text{H}$  NMR spectra - II
- Lecture 21 - Analysis of  $^1\text{H}$  NMR spectra - III
- Lecture 22 - Coupling of  $^1\text{H}$  with other nuclei - I
- Lecture 23 - Coupling of  $^1\text{H}$  with other nuclei - II
- Lecture 24 -  $^{13}\text{C}$ -NMR - I
- Lecture 25 -  $^{13}\text{C}$ -NMR - II
- Lecture 26 -  $^{13}\text{C}$ -NMR - III
- Lecture 27 -  $^{13}\text{C}$ -NMR - IV
- Lecture 28 - Analysis of  $^{19}\text{F}$  spectra
- Lecture 29 -  $^{31}\text{P}$  NMR

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- Lecture 30 - Analysis of spectra of Heteronuclei
- Lecture 31 - Heteronuclear spectral analysis
- Lecture 32 - Spin Echoes - I
- Lecture 33 - Spin Echoes - II
- Lecture 34 - Sensitivity enhancement
- Lecture 35 - Polarization transfer
- Lecture 36 - INEPT
- Lecture 37 - 2D NMR - I
- Lecture 38 - 2D NMR - II
- Lecture 39 - 2D-COSY - I
- Lecture 40 - 2D COSY - II
- Lecture 41 - Types of COSY spectra
- Lecture 42 - TOCSY
- Lecture 43 - HSQC - I
- Lecture 44 - HSQC - II
- Lecture 45 - me-HSQC
- Lecture 46 - HSQC and HMBC
- Lecture 47 - HMBC - II
- Lecture 48 - 2D INADEQUATE
- Lecture 49 - 2D-INADEQUATE and 2D J-Resolved
- Lecture 50 - Homo and Heteronuclear J-resolved
- Lecture 51 - Conceptual understanding of NOE
- Lecture 52 - Positive and negative NOE
- Lecture 53 - NOE and correlation times
- Lecture 54 - Complications in NOE, Steady state NOE
- Lecture 55 - ROESY and Tr NOE
- Lecture 56 - Combined utility of COSY, TOCSY, HSQC, NOESY
- Lecture 57 - Steady State NOE
- Lecture 58 - 1D NOE, 1D TOCSY
- Lecture 59 - 1D-TOCSY, PURESIFT
- Lecture 60 - PURSHIFT NMR