NPTEL : NOC:Organo Metallic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof.Debabrata Maiti

NPTEL : NOC:Chemical and Biological Thermodynamics - Principles to Applications (Chemistry and Biochemistry)

Co-ordinators : Prof. Nand Kishore

NPTEL : NOC:Chemistry of Main Group Elements (Chemistry and Biochemistry)

Co-ordinators : Prof. M. S. Balakrishna

NPTEL : NOC:Transition Metal Organometallic Chemistry - Principles to Applications (Chemistry and Biochemistry)

Co-ordinators : Prof. P. Ghosh

NPTEL : NOC:Metal Mediated Synthesis-I (Chemistry and Biochemistry)

Co-ordinators : Prof.Debabrata Maiti

NPTEL : NOC:Inorganic Chemistry of Life: Principles and Perspectives (Chemistry and Biochemistry)

Co-ordinators : Prof. C.P. Rao

NPTEL : NOC:Symmetry and Group Theory (Chemistry and Biochemistry)

Co-ordinators : Prof. Anindya Datta

NPTEL : NOC:Computational Chemistry and Classical Molecular Dynamics (Chemistry and Biochemistry)

Co-ordinators : Prof. B.L. Tembe

NPTEL : NOC:Molecular Spectroscopy: A Physical Chemists Perspective (Chemistry and Biochemistry)

Co-ordinators : Prof. Anindya Datta

NPTEL : NOC:Advanced Transition Metal Organometallic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. P. Ghosh

NPTEL : NOC:Mechanisms in Organic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Nandita Madhavan

NPTEL : NOC:Metals in Biology (Chemistry and Biochemistry)

Co-ordinators : Prof.Debabrata Maiti

NPTEL : NOC:NMR Spectroscopy for Chemists and Biologists (Chemistry and Biochemistry)

Co-ordinators : Prof. Ashutosh Kumar

NPTEL : NOC:Basics in Inorganic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof.Debabrata Maiti

NPTEL : NOC:Ultrafast Laser Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Anindya Datta

NPTEL : NOC:Transition Metal Organometallics in Catalysis and Biology (Chemistry and Biochemistry)

Co-ordinators : Prof. Prasenjit Ghosh

NPTEL : NOC:Quantum Chemistry of Atoms and Molecules (Chemistry and Biochemistry)

Co-ordinators : Prof. Anindya Datta

NPTEL : NOC:Basic Statistical Mechanics (Chemistry and Biochemistry)

Co-ordinators : Prof. Biman Bagchi

Lecture 30 - Cluster Expansion and Mayerâ€™s Theory of Condensation - Part 3

Lecture 31 - Cluster Expansion and Mayerâ€™s Theory of Condensation - Part 4

Lecture 32 - Cluster Expansion and Mayerâ€™s Theory of Condensation - Part 5

Lecture 33 - Cluster Expansion and Mayerâ€™s Theory of Condensation - Part 6

Lecture 34 - Phase Transition and Landau Theory - Part 1

Lecture 35 - Phase Transition and Landau Theory - Part 2

Lecture 36 - Phase Transition and Landau Theory - Part 3

Lecture 37 - Comments on some important Concepts of Statistical Mechanics

Lecture 38 - Nucleation Part 1: Introduction, Thermodynamics of Nucleation

Lecture 39 - Nucleation Part 2: Kinetics of Nucleation

Lecture 40 - Nucleation Part 3: Kinetics of Nucleation, Classical Nucleation Theory, Heterogeneous Nucleation

Lecture 41 - Nucleation Part 4: Ostwald Step Rule

Lecture 42 - Spinodal Decomposition and Pattern Formation: Evolution of Structure through Dynamics - Part 1

Lecture 43 - Spinodal Decomposition and Pattern Formation: Evolution of Structure through Dynamics - Part 2

Lecture 44 - Ising Model and Other Lattice Models - Part 1

Lecture 45 - Ising Model and Other Lattice Models - Part 2

Lecture 46 - Ising Model and Other Lattice Models - Part 3

Lecture 47 - Ising Model and Other Lattice Models - Part 4

Lecture 48 - Ising Model and Other Lattice Models - Part 5

Lecture 49 - Binary Mixtures: Towards Understanding Non-Ideality and Osmotic Pressure - Part 1

Lecture 50 - Binary Mixtures: Towards Understanding Non-Ideality and Osmotic Pressure - Part 2

Lecture 51 - Theory of Liquids - Part 1

Lecture 52 - Theory of Liquids - Part 2

Lecture 53 - Theory of Liquids - Part 3

Lecture 54 - Theory of Liquids - Part 4

Lecture 55 - Polymers in Solution and Polymer Collapse - Part 1

Lecture 56 - Polymers in Solution and Polymer Collapse - Part 2

Lecture 57 - Polymers in Solution and Polymer Collapse - Part 3

Lecture 58 - Polymers in Solution and Polymer Collapse - Part 4

Lecture 59 - Computer Simulation Methods in Statistical Mechanics - Part 1

Lecture 60 - Computer Simulation Methods in Statistical Mechanics - Part 2

Lecture 61 - Conclusion

NPTEL : NOC:Quantum Mechanics and Molecular Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Naresh Patwari

NPTEL : NOC:Essentials of Oxidation, Reduction and C_C Bond Formation. Application in Organic Synthesis (Chemistry and Biochemistry)

Co-ordinators : Prof. Yashwant D Vankar

ketones

Lecture 31 - Silanes [R3SiH, including polymethylhydrosiloxanes (PMHS)] as reducing agents

Lecture 32 - Further aspects of silanes as reducing agents and Barton-McCombie deoxygenation

Lecture 33 - Tributyltinhydride (n-Bu3SnH) based radical based reductions and C-C bond formations

Lecture 34 - Asymmetric synthesis: An introduction

Lecture 35 - Sharpless asymmetric epoxidation: Mechanism, stereochemistry and kinetic resolution

Lecture 36 - Synthetic utility of chiral 2,3-epoxy alcohols obtained from Sharpless epoxidation

Lecture 37 - Katsuki-Jacobsen epoxidation: Mechanism and stereochemistry

Lecture 38 - Further aspects of Katsuki-Jacobsen epoxidation, and Introduction to Sharpless Asymmetric Dihydroxylation

Lecture 39 - Mechanism, stereochemical aspects and synthetic applications of Sharpless Asymmetric Dihydroxylation

Lecture 40 - Asymmetric hydrogenations and reductions using rhodium and ruthenium derived chiral catalysts

Lecture 41 - Asymmetric reduction with oxazaborilidines

Lecture 42 - C-C bond formations: Introduction to enolate, enamine and enol silyl ether based chemistry

Lecture 43 - C-C bond formations using enol silyl ether and imine based chemistry including SAMP and RAMP based asymmetric alkylations

Lecture 44 - Asymmetric C-C bond formations using Oppolzerâ€™s camphorsultams and introduction to directed Aldol reactions

Lecture 45 - Further aspects of Aldol chemistry including the use of boron and silicon enolates

Lecture 46 - C-C bond formations using Evansâ€™ oxazolidinone based chemistry

Lecture 47 - Ireland-Claisen rearrangement: Emphasis of enolate geometry on the stereochemical outcome, and Claisen rearrangements

Lecture 48 - Aromatic Claisen rearrangement, Johnson-Claisen rearrangement and Eschenmoser-Claisen rearrangement and synthetic

Lecture 49 - Bellus-Claisen rearrangement, Aza-Claisen rearrangement, Thia-Claisen rearrangement, Chen-Mapp rearrangement and their synthetic applications

Lecture 50 - Zwitterionic-Claisen rearrangement, Overmann rearrangement, Bamford- Stevens and Shapiro reactions and synthetic applications

Lecture 51 - Introduction to allyl metal additions for C-C bond formation

Lecture 52 - Allylindium chemistry: Mechanism, stereochemistry and synthetic applications

Lecture 53 - Allyltin chemistry: Mechanism, stereochemistry and synthetic applications

Lecture 54 - Chemistry of allylsilanes: Mechanism, stereochemistry and synthetic applications - Part 1

Lecture 55 - Further synthetic aspects of the chemistry of allylsilanes - Part 2

Lecture 56 - Further synthetic aspects of the chemistry of allylsilanes - Part 3

Lecture 57 - Chemistry of Vinylsilanes: Mechanism, Stereochemistry and Synthetic Applications

Lecture 58 - Peterson olefination and further synthetic aspects of vinylsilane chemistry

Lecture 59 - Simmons Smith cyclopropanation: Mechanism, stereochemistry and synthetic applications

Lecture 60 - Course Summary and Conclusion

NPTEL : NOC:Chemical Kinetics and Transition State Theory (Chemistry and Biochemistry)

Co-ordinators : Prof. Amber Jain

NPTEL : NOC:Concepts of Chemistry for Engineering (Chemistry and Biochemistry)

Co-ordinators : Prof. Anindya Datta

NPTEL : NOC:Classics in Total Synthesis-I (Chemistry and Biochemistry)

Co-ordinators : Prof. Krishna P Kaliappan

NPTEL : NOC:Circular Dichroism (CD) and Mossbauer Spectroscopy for Chemists (Chemistry and Biochemistry)

Co-ordinators : Prof. Arnab Dutta

NPTEL : NOC:NMR Spectroscopy for Structural Biology (Chemistry and Biochemistry)

Co-ordinators : Prof. Ashutosh Kumar, Prof. R. V Hosur

NPTEL : NOC:Transition Metal Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. M S Balakrishna

NPTEL : NOC:Nuclear and Radiochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. B.S.Tomar, Prof. P.K.Mohapatra

NPTEL : NOC:Fundamentals of Statistical Thermodynamics (Chemistry and Biochemistry)

Co-ordinators : Prof. Nand Kishore

NPTEL : NOC:Interpretative Molecular Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. M. S. Balakrishna

NPTEL : NOC:Many Body Methods in Quantum Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Sourav Pal, Prof. Achintya Kumar Dutta

NPTEL : Bio-Physical Chemistry (Chemistry and Biochemistry)

Co-ordinators : Dr. P.K. Chowdhury

NPTEL : NOC:Spectroscopic Techniques for Pharmaceutical and Biopharmaceutical Industries (Chemistry and Biochemistry)

Co-ordinators : Dr. Shashank Deep

NPTEL : NOC:Introductory Non-Linear Dynamics (Chemistry and Biochemistry)

Co-ordinators : Prof. Ramakrishna Ramaswamy

NPTEL : NOC:Principles of Organic Synthesis (Chemistry and Biochemistry)

Co-ordinators : Prof. T. Punniyamurthy

NPTEL : NOC:Reagents in Organic Synthesis (Chemistry and Biochemistry)

Co-ordinators : Prof.Subhas Chandra

Lecture 32 - Sm and Yb Based Reagents in Organic Synthesis

NPTEL : NOC:Thermodynamics: Classical to Statistical (Chemistry and Biochemistry)

Co-ordinators : Prof. Sandip Paul

NPTEL : NOC:Essentials of Biomolecules: Nucleic Acids and Peptides (Chemistry and Biochemistry)

Co-ordinators : Prof. Lal Mohan Kundu

NPTEL : Chemistry of Materials (Chemistry and Biochemistry)

Co-ordinators : Prof. S. Sundar Manoharan

NPTEL : Mathematics for Chemistry (Chemistry and Biochemistry)

Co-ordinators : Dr. Madhav Ranganathan, Dr. P.P. Thankachan

NPTEL : Advance Analytical Course (Chemistry and Biochemistry)

Co-ordinators : Dr. Padma S Vankar

NPTEL : NOC:Chemical Applications of Symmetry and Group Theory (Chemistry and Biochemistry)

Co-ordinators : Prof. Manabendra Chandra

NPTEL : NOC:Mathematics for Chemistry (Chemistry and Biochemistry)

Co-ordinators : Dr. Madhav Ranganathan

NPTEL : NOC:Quantum Computing (Chemistry and Biochemistry)

Co-ordinators : Prof. Debabrata Goswami

NPTEL : NOC:Basics of Fluroscence Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Pratik Sen

NPTEL : NOC:Laser - Fundamentals and Applications (Chemistry and Biochemistry)

Co-ordinators : Prof. Manabendra Chandra

NPTEL : NOC:Advanced Mathematical Methods for Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Madhav Ranganathan

NPTEL : NOC:Solid State Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Madhav Ranganathan

NPTEL : NOC:Bioinorganic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. S. P. Rath

NPTEL : NOC:Chemistry and Physics of Surfaces and Interfaces (Chemistry and Biochemistry)

Co-ordinators : Prof. Thiruvancheril G. Gopakumar

NPTEL : NOC:Supramolecular Chemistry-I (Chemistry and Biochemistry)

Co-ordinators : Prof. Parimal Kanti Bharadwaj

NPTEL : Bio-inorganic chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. D. Ray

NPTEL : Co-ordination Chemistry (Chemistry of Transition Elements) (Chemistry and Biochemistry)

Co-ordinators : Prof. D. Ray

NPTEL : Heterocyclic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. D.R. Mal

NPTEL : Organic Photochemistry and Pericyclic Reactions (Chemistry and Biochemistry)

Co-ordinators : Dr. N.D. Pradeep Singh

NPTEL : Polymer Chemistry (Chemistry and Biochemistry)

Co-ordinators : Dr. D. Dhara

NPTEL : Rate processes (Chemistry and Biochemistry)

Co-ordinators : Dr. M. Halder

NPTEL : NOC:Biochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. S. Dasgupta

NPTEL : NOC:Analytical Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Debashis Ray

NPTEL : NOC:Co-ordination Chemistry (Chemistry of Transition Elements) (Chemistry and Biochemistry)

Co-ordinators : Prof. Debashis Ray

NPTEL : NOC:Stereochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. A. Basak

NPTEL : NOC:A Study Guide in Organic Retrosynthesis - Problem Solving Approach (Chemistry and Biochemistry)

Co-ordinators : Prof. Samik Nanda

NPTEL : NOC:Introduction to Molecular Thermodynamics (Chemistry and Biochemistry)

Co-ordinators : Prof. Srabani Taraphder

NPTEL : NOC:Molecules in Motion (Chemistry and Biochemistry)

Co-ordinators : Prof. Amita Pathak Mahanty

NPTEL : NOC:Experimental Biochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Soumya De, Prof. Swagata Dasgupta

NPTEL : NOC:Industrial Inorganic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Debashis Ray

NPTEL : NOC:Reactive Intermediates Carbene and Nitrene (Chemistry and Biochemistry)

Co-ordinators : Prof. Rajarshi Samanta

NPTEL : NOC:Organic Chemistry in Biology and Drug Development (Chemistry and Biochemistry)

Co-ordinators : Prof. A. Basak

NPTEL : NOC:Introduction to Polymer Science (Chemistry and Biochemistry)

Co-ordinators : Dr. D. Dhara

NPTEL : NOC:Structure, Stereochemistry and Reactivity of Organic Compounds and Intermediates: A Problem Solving Approach (Chemistry and Biochemistry)

Co-ordinators : Prof. A. Basak

NPTEL : NOC:Approximate Methods in Quantum Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Sabyashachi Mishra

NPTEL : NOC:Biological Inorganic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Debashis Ray

NPTEL : NOC:Principles and Applications of Enolate Alkylation (Chemistry and Biochemistry)

Co-ordinators : Prof. Samik Nanda

NPTEL : NOC:Overview and Integration of Cellular Metabolism (Chemistry and Biochemistry)

Co-ordinators : Dr. Arindam Ghosh, Dr. Aritri Bir

NPTEL : NOC:Elementary Thermodynamics for All (Chemistry and Biochemistry)

Co-ordinators : Prof. Srabani Taraphder

NPTEL : NOC:Molecular Rearrangements and Reactive Intermediates in Organic Synthesis (Chemistry and Biochemistry)

Co-ordinators : Prof. Santanu Panda

NPTEL : Principles and Application of Electron Paramagnetic Resonance (Chemistry and Biochemistry)

Co-ordinators : Prof. Ranjan Das

NPTEL : NOC:Chemistry-I (Chemistry and Biochemistry)

Co-ordinators : Prof. K. Mangala Sunder

NPTEL : NOC:Chemistry-II (Chemistry and Biochemistry)

Co-ordinators : Prof. K. Mangala Sunder

NPTEL : NOC:Application of Spectroscopic Methods in Molecular Structure Determination (Chemistry and Biochemistry)

Co-ordinators : Prof. S. Sankararaman

NPTEL : NOC:Pericyclic Reactions and Organic Photochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. S. Sankararaman

NPTEL : NOC:Chemistry I:Introduction To Quantum Chemistry And Molecular Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. K. Mangala Sunder

NPTEL : NOC:Introduction to Chemical Thermodynamics and Kinetics (Chemistry and Biochemistry)

Co-ordinators : Prof.Arijit Kumar De

NPTEL : NOC:Chemical Crystallography (Chemistry and Biochemistry)

Co-ordinators : Prof.Angshuman Roy Choudhury

NPTEL : NOC:Advanced Chemical Thermodynamics and Kinetics (Chemistry and Biochemistry)

Co-ordinators : Prof.Arijit Kumar De

NPTEL : NOC:Chemistry: Atomic Structure and Chemical Bonding (Chemistry and Biochemistry)

Co-ordinators : Prof. K. Mangala Sunder

NPTEL : NOC:Electrochemical Impedance Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Dr. S. Ramanathan

NPTEL : NOC:Medicinal Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Harinath Chakrapani

NPTEL : NOC:Chemical Principles-II (Chemistry and Biochemistry)

Co-ordinators : Prof. Arnab Mukherjee

NPTEL : Organic Chemistry Lab Certification (Chemistry and Biochemistry)

Co-ordinators : Prof. Harinath Chakrapani

NPTEL : NOC:Introductory Organic Chemistry-I (Chemistry and Biochemistry)

Co-ordinators : Prof. Harinath Chakrapani

NPTEL : NOC:Quantitative Methods in Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Aasheesh Srivastava, Prof. Bharathwaj Sathyamoorthy

NPTEL : NOC:Fundamentals of Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Sayan Bagchi, Prof. Anirban Hazra

NPTEL : NOC:Symmetry, Stereochemistry and Applications (Chemistry and Biochemistry)

Co-ordinators : Prof. Angshuman Roy Choudhury

NPTEL : NOC:Symmetry and Group Theory (2021) (Chemistry and Biochemistry)

Co-ordinators : Prof. Jeetender Chugh

NPTEL : NOC:Introductory Organic Chemistry - II (Chemistry and Biochemistry)

Co-ordinators : Prof. Harinath Chakrapani

NPTEL : NOC:Elementary Electrochemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Angshuman Roy Choudhury

NPTEL : NOC:Organic Chemistry-I (Tamil) (Chemistry and Biochemistry)

Co-ordinators : Prof. Srinivasan Venkataraman

NPTEL : Essentials in Immunolgy (Chemistry and Biochemistry)

Co-ordinators : Prof. Anjali Karande, Dr. Dipankar Nandi, Dr. R. Manjunath

NPTEL : Eukaryotic Gene Expression - basics and benefits (Chemistry and Biochemistry)

Co-ordinators : Prof. P.N. Rangarajan

NPTEL : Introductory Quantum Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. K.L. Sebastian

NPTEL : Introduction to Organometallic Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. A.G. Samuelson

NPTEL : NOC:Principles and Applications of NMR Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Hanudatta S. Atreya

NPTEL : NOC:Multidimensional NMR Spectroscopy for Structural Studies of Biomolecules (Chemistry and Biochemistry)

Co-ordinators : Prof. Hanudatta S. Atreya

NPTEL : NOC:Symmetry and Structure in the Solid State (Chemistry and Biochemistry)

Co-ordinators : Prof. T. N. Guru Row

NPTEL : NOC:Ultrafast Optics and Spectroscopy (Chemistry and Biochemistry)

Co-ordinators : Prof. Atanu Bhattacharya

NPTEL : NOC:One and two dimensional NMR Spectroscopy for Chemists (Chemistry and Biochemistry)

Co-ordinators : Prof. N. Suryaprakash

Lecture 65 - Relaxation processes - 2

NPTEL : NOC:Time Dependent Quantum Chemistry (Chemistry and Biochemistry)

Co-ordinators : Prof. Atanu Bhattacharya

NPTEL : NOC:One and Two Dimensional NMR Spectroscopy: Concepts and Spectral Analysis (Chemistry and Biochemistry)

Co-ordinators : Prof. N. Suryaprakash