

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

NPTEL Video Course - Chemistry and Biochemistry - NOC:Pericyclic Reactions and Organic Photochemistry

Subject Co-ordinator - Prof. S. Sankararaman

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Activation of chemical reactions. Thermal and photochemical methods
- Lecture 2 - MOs of polyene and their symmetry properties and methods of analyzing pericyclic reactions
- Lecture 3 - Introduction to electrocyclic reactions and Woodward Hoffmann rules
- Lecture 4 - Electrocyclic reactions \hat{A} examples of 3, 4 and 5 membered ring systems (2e and 4e systems)
- Lecture 5 - Electrocyclic reactions \hat{A} examples of 6 and larger ring systems (6e and more)
- Lecture 6 - Tutorial session 1
- Lecture 7 - Cycloaddition reactions - Introduction and Woodward Hoffmann rules - [2+2] cycloadditions
- Lecture 8 - Cycloaddition reactions \hat{A} ketene cycloadditions
- Lecture 9 - Cycloaddition reactions \hat{A} Diels-Alder reaction - Woodward Hoffmann rule - Regiochemistry and Stereochemistry
- Lecture 10 - Diels Alder reaction - synthetic applications
- Lecture 11 - Diels Alder reaction continued - Hetero diene and dienophile - Lewis acid mediated - asymmetric
- Lecture 12 - 1,3-Dipolar cycloaddition reactions
- Lecture 13 - 1,3-Dipolar cycloaddition reactions (Continued...)
- Lecture 14 - [4pi+4pi], [4pi+6pi] and higher order cycloaddition reactions
- Lecture 15 - Tutorial session 2 on cycloaddition reactions
- Lecture 16 - Pericyclic reactions \hat{A} Sigmatropic rearrangements \hat{A} Introduction and [1,3] migrations
- Lecture 17 - Pericyclic reactions \hat{A} Sigmatropic rearrangements (Continued...) [1,5] H and C migrations and C
- Lecture 18 - Pericyclic reactions \hat{A} Sigmatropic rearrangements (Continued...) oxy Cope and Claisen Rearrangements
- Lecture 19 - Pericyclic reactions \hat{A} Sigmatropic rearrangements (Continued...)
- Lecture 20 - Pericyclic reactions \hat{A} Sigmatropic rearrangements (Continued...) [2,3] sigmatropic shifts and h
- Lecture 21 - Pericyclic reactions \hat{A} Sigmatropic rearrangements (Continued...) Wittig rearrangement and higher
- Lecture 22 - Pericyclic reactions \hat{A} Chelotropic reactions - introduction, SO₂ extrusion reactions
- Lecture 23 - Pericyclic reactions \hat{A} Tutorial session 3 - Problems on sigmatropic reactions
- Lecture 24 - Chelotropic reactions 2
- Lecture 25 - The Ene Reaction
- Lecture 26 - Tutorial session - 4
- Lecture 27 - Introduction to organic photochemistry
- Lecture 28 - Photochemistry of alkenes cis-trans isomerization
- Lecture 29 - Photochemistry of alkenes (Continued...)

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- Lecture 30 - Photochemistry of carbonyl compounds, Norrish type 1 and 2 reactions
- Lecture 31 - Photochemistry of carbonyl compounds, enone and dienone photochemistry
- Lecture 32 - Photochemistry of Nitrogen compounds
- Lecture 33 - Photochemistry of aromatic compounds
- Lecture 34 - Photoinduced electron transfer reactions