

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

NPTEL Video Course - Chemistry and Biochemistry - NOC:Metals in Biology

Subject Co-ordinator - Prof.Debabrata Maiti

Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Importance of metals in biology
- Lecture 2 - Choice, uptake and assembly of metal ions in cells
- Lecture 3 - Control and use of metal ions concentration in biological systems
- Lecture 4 - Metal mediated folding of biopolymers
- Lecture 5 - Study of binding mode of calcium and zinc in proteins
- Lecture 6 - Electron transfer (ET) in living systems
- Lecture 7 - Oxygen transport and activation
- Lecture 8 - Hydrolytic Enzymes - Part I - Carbonic anhydrase and Liver alcohol dehydrogenase
- Lecture 9 - Hydrolytic Enzymes - Part II - Carbopeptidase
- Lecture 10 - Hydrolytic Enzymes - Part III - Arginase and Urease
- Lecture 11 - Hemerythrin and azidomethemerythrin
- Lecture 12 - Dioxygen reactivity in copper
- Lecture 13 - Cu-O₂ intermediates
- Lecture 14 - Copper-Oxygen chemistry - Part I - Mononuclear copper-oxygen
- Lecture 15 - Copper-Oxygen chemistry - Part II - Cu-O₂ complexes
- Lecture 16 - Copper-Oxygen chemistry - Part III - Reactivity summary
- Lecture 17 - Iron Catalyzed oxidation of unactivated sp³ C-H bonds - Part I
- Lecture 18 - Iron catalyzed oxidation of unactivated sp³ C-H bonds - Part II
- Lecture 19 - Iron catalyzed oxidation of unactivated sp³ C-H bonds - Part III
- Lecture 20 - Nitrous oxide reductase and its model complex
- Lecture 21 - Cytochrome C-oxidase
- Lecture 22 - Systematic variations in O-O stretch in Iron-oxo-copper ligand complex
- Lecture 23 - Mononuclear nonheme iron (NHI) enzymes
- Lecture 24 - Alpha-Keto Glutarate dependent Halogenases
- Lecture 25 - Cytochrome P450 - Part I - Introduction
- Lecture 26 - Cytochrome P450 - Part II - Reactions
- Lecture 27 - Cytochrome P450 - Part III - Mechanism
- Lecture 28 - Cytochrome P450 - Part IV - Role of Cystine ligand and distal charge relay
- Lecture 29 - Methane monooxygenase

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- Lecture 30 - Dinuclear Iron active sites for CH₄ to CH₄OH conversion and its Mechanism
- Lecture 31 - Concerted Vs radical pathway for CH₄ to CH₄OH conversion
- Lecture 32 - Photosynthesis - Part I
- Lecture 33 - Photosynthesis - Part II
- Lecture 34 - Pumps and channels
- Lecture 35 - Quick summary on O₂ transport
- Lecture 36 - Summary of Dioxygen reactivity in copper
- Lecture 37 - Summary of Dioxygen reactivity in iron
- Lecture 38 - Summary of Fe-O₂ chemistry