

GTR & RCMS Seminar

Multi-Heme Proteins: Nature's Design and Effect of Heme-Heme Interactions on the Functional Control

Prof. S. P. Rath

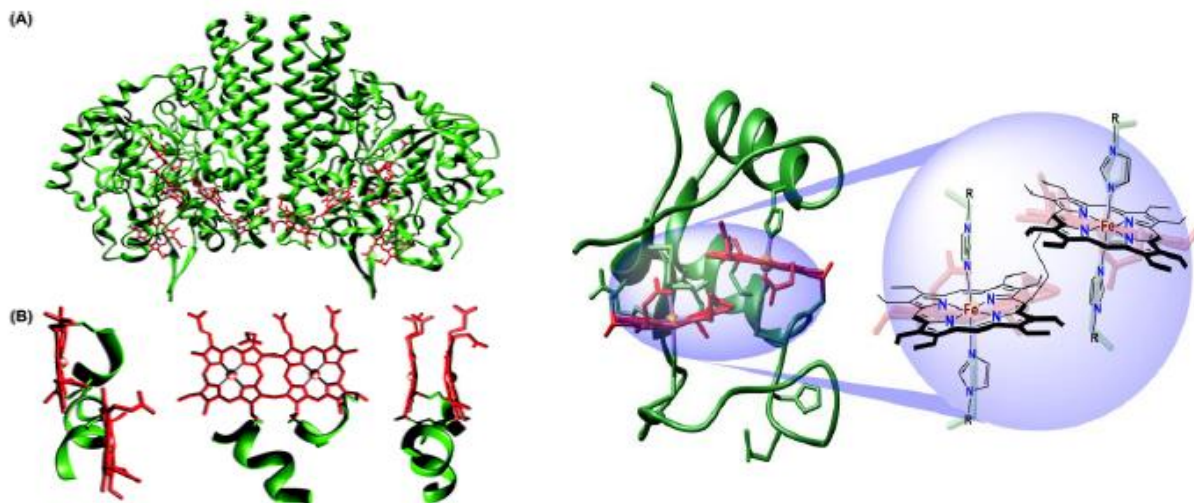
Department of Chemistry

Indian Institute of Technology Kanpur

June. 22, 2022 16:00 ~ 17:30

Noyori Materials Science Laboratory

Noyori Lecture Room



Multiheme cytochrome constitutes a widespread class of proteins with essential functions in electron transfer and enzymatic catalysis. Their functional properties are in part determined by the relative arrangement of multiple heme cofactors. Understanding the significance of these motifs is crucial for the elucidation of the highly optimized properties of multiheme cytochromes *c*, but their spectroscopic investigation is often restricted by the presence of a large number and efficient coupling of the individual centers. The diheme cytochrome *c* (DHC2) from *G. sulfurreducens* is, however, the simplest member of such family, with two heme groups attached through a single polypeptide chain that are found to be different. A large number of diheme enzymes such as *MauG* and bacterial diheme cytochrome *c* peroxidases (*bCcP*) are also known which catalyze various important chemical transformations in biology. These attractive features have prompted us to investigate on the biomimetic model of multi-heme cytochromes as a part of our ongoing research.^[1-4] This talk will highlights some of our recent results.