

Friday, 06.12.2024, 1:15 p.m.  
in Lecture Hall I of the Physics Institute



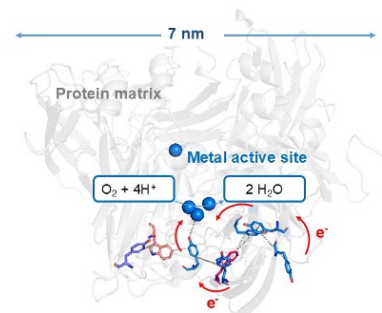
## Patrycja Kielb

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„How is electron transferred in biological systems?  
Insights from electrochemistry combined with  
spectroscopy“

Nature has evolved to utilize the transfer of electrons to power key chemical transformations in variety of processes ranging from photosynthesis to cellular respiration. The ‘machinery’ responsible for such complex reactions are often metalloproteins that are composed of relatively large protein matrix through which electrons are tunneled across 0.1 – 10 nm distances in a single or multiple steps to reach the metal active sites where reaction takes place.

In this talk, I will describe the current understanding of how electrons are transferred via proteins and how this process has evolved to utilize electrons to enable the activation of small molecules like oxygen. I will lay a particular focus on the importance of physical chemistry methods to study such biophysical processes. Electrochemistry allows monitoring the electron flow between the electrode interface and immobilized on the interface metalloprotein, while spectroscopy (optical, vibrational and electron paramagnetic resonance EPR) allows insight into the structure of redox active component under investigation.



Everybody is welcome, especially students of all semester

