

SFB  
1078



Protonation Dynamics  
in Protein Function

Mon, June 30,  
2014

16:15 – 18:30

Freie Universität Berlin  
Physics Department  
Lecture Hall B

(Arnimallee 14, 14195 Berlin-Dahlem)

## ➤ Colloquium

### *Invited speakers*

➤ **Prof. Josef Wachtveitl** – Goethe-Universität, Frankfurt a.M. – Germany

#### ***Photoinitiated functional dynamics of retinal proteins***

Prof. Wachtveitl will present the most recent results on the structure–function relationships of proteorhodopsin with a special focus on the different modes of color tuning and the variable proton pumping vectoriality. For channelrhodopsin-2, he will show how the individual steps of the photocycle can be selectively tuned by electrostatic interactions, pH and site-specific mutations.

➤ **Prof. Cláudio M. Soares** – Universidade Nova de Lisboa – Portugal

#### ***Redox enzymes for biotechnology: modelling (and other) studies of laccases and hydrogenases***

In his talk, Prof. Soares will focus on recent studies of two classes of redox enzymes, laccases and hydrogenases. Laccases are multicopper oxidases capable of nonspecifically oxidizing a wide variety of organic compounds while reducing dioxygen to water. These enzymes contain two copper centres, namely the T1 centre responsible for the oxidation of the organic compounds, and the T2-T3 centre, responsible for dioxygen reduction. [NiFe]- and [NiFeSe]-hydrogenases are metallo-enzymes that catalyze the production or oxidation of molecular hydrogen, which is regarded as an alternative fuel. Prof. Soares will present studies directed at understanding proton transfer as well as substrate permeation and interactions with the active sites of these enzymes. Some of these studies combine modelling methods with experimental structural approaches. (Full abstract is available online.)

Coffee and tea are ready at 16:00 and during the break from 17:10 – 17:30.

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