SFB 1078

Protonation Dynamics in Protein Function

Mon, **June 6,** 2016

16:15 – 18:30

Freie Universität Berlin
Physics Department
Lecture Hall A

(Arnimallee 14, 14195 Berlin-Dahlem)

Colloquium

Dr. Christian Bamann – Max Planck Institute of Biophysics, Frankfurt a.M.

Light-induced ion transport in microbial rhodopsins

Microbial rhodopsins are prime examples to study ion transport in ion pumps or in ion channels. They share common questions like ion selectivity, ion binding and gating reactions. Here, I present recent studies on channelrhodopsins with retinal analogues that allows probing specifically the interaction between the retinal and its binding pocket. For the sodium pump KR2, I show how we can assign the different ion transport modes for protons and sodium ions and how manipulation of the ion access channels leads to an altered ion selectivity.

Dr. Carmen Domene – King's College London, United Kingdom

Computational approaches to the molecular thermometers of the human body

Transient receptor potential (TRP) ion channels constitute a notable family of cation channels involved in the ability of organisms to detect noxious mechanical, thermal and chemical stimuli that gives rise to the perception of pain. One of the most experimentally studied agonist of TRP channels is capsaicin, which is responsible for the burning sensation produced when chili pepper is in contact with organic tissues. Understanding how TRP channels are regulated by capsaicin and other natural products is essential to high impact pharmacological applications, particularly those related to pain treatment. By selected examples from the work carried out in Dr. Domene's group, she will provide an overview of the current knowledge about activation, permeation and selectivity of one of the 'human molecular thermometers'.

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

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