**COLLOQUIA IN MEMBRANE TRANSPORT**

Venue: Medical University Vienna, Center for Physiology and Pharmacology, Institute of Pharmacology, Waehringerstrasse 13a, 1090 Vienna, "Leseraum"

(Harald Sitte, Tel.: (01) 40160 31323, harald.sitte@meduniwien.ac.at, Michael Freissmuth, Tel.: (01) 40160 31371, michael.freissmuth@meduniwien.ac.at)

Monday 16.12.2013 14.30 s.t.  **Dimitrios Stamou** (host: M. Freissmuth)

Head of the Bio-Nanotechnology Laboratory and Co-director of the Lundbeck Center Biomembranes in Nanomedicine
Department of Chemistry and Nano-Science Center
University of Copenhagen
Denmark

**“Structure function of transmembrane proteins at the single molecule level”**

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**Dimitrios Stamou** ([stamou@nano.ku.dk](mailto:stamou@nano.ku.dk))

Abstract.

The main research theme at the Bio-Nanotechnology Laboratory is the nanoscale spatio-temporal organization of biological systems and its impact on normal and aberrant biological functions. We use quantitative fluorescence microscopy and characterize with single molecule resolution a number of processes taking place within or at the interface of biological membranes including membrane deformation, rafts, interfacially activated enzymes, SNAREs, transporters, GPCRs. We aim at identifying unifying biophysical mechanisms that control on the nanometer scale the structure and function of proteins and membranes. Here I introduce briefly few examples of past work and then focus on our recent unpublished work characterizing conformational dynamics and oligomerization of the b2AR at the single molecule level.

**Selected References**

   Single enzyme studies reveal the existence of discrete functional states for monomeric enzymes and how they are "selected" by allosteric interactions.
   Hatzakis, Nikos; Wei, Li; Jorgensen, Sune; Kunding, Andreas; Bolinger, Pierre-Yves; Ehrlich, Nicky; Makarov, Ivan; Skjøt, Michael; Svendsen, Allan; Hedegård, Per; Stamou, Dimitrios

   Mixing sub-attolitre volumes in a quantitative and highly parallel manner with soft matter nanofluidics.
   S. M. Christensen; P.Y. Bolinger; N.S. Hatzakis; M.W. Mortensen and D. Stamou


