



1850 – 1914

ADOLF-MARTENS-FONDS e.V.

zur Förderung der Werkstoffwissenschaften, der Materialforschung und -prüfung,
der Sicherheitstechnik und der Analytischen Chemie

Einladung

zum Kolloquium des Adolf-Martens-Fonds e. V.

Professor Dr. Dr. h. c. Stefan W. Hell
Max Planck Institute for Biophysical Chemistry, Göttingen

NANOSCOPY WITH FOCUSED LIGHT

In STED microscopy, fluorescent features are switched off by the STED beam, which confines the fluorophores to the ground state everywhere in the focal region except at a subdiffraction area of extent $d \approx \lambda / (2NA\sqrt{1+I/I_s})$. In RESOLFT microscopy, the principles of STED have been expanded to fluorescence on-off-switching at low intensities I , by resorting to molecular switching mechanisms that entail low switching thresholds I_s . An I_s lower by many orders of magnitude is provided by reversibly switching the fluorophore to a long-lived dark (triplet) state or between a long-lived 'fluorescence activated' and 'deactivated' state. These alternative switching mechanisms entail an I_s that is several orders of magnitude lower than in STED. In imaging applications, STED/RESOLFT enables fast recordings and the application to living cells, tissues, and even living animals.

Starting from the basic principles of nanoscopy we will discuss recent developments with particular attention to RESOLFT and the recent nanoscale imaging of the brain of living mice by STED.

Mittwoch, 23. Oktober 2013, 15:00 Uhr
BAM Bundesanstalt für Materialforschung und -prüfung
Unter den Eichen 87, 12205 Berlin, Haus 5, Ludwig-Erhard-Saal

Auskünfte: Frau Silvia Schulz, Telefon: 030 8104-1009
Vorsitzender: Prof. Dr. rer. nat. Ulrich Panne

Gäste sind willkommen, der Eintritt ist frei!