TECHNISCHE UNIVERSITÄT WIEN
Vienna University of Technology

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IAP-SEMINAR

EINLADUNG

Termin: **Dienstag, 24.4.2012 um 16:00 Uhr**
Ort: **Technische Universität Wien,**
Institut für Angewandte Physik,
Seminarraum 134A, Turm B (gelbe Leitfarbe), 5. OG
1040 Wien, Wiedner Hauptstraße 8-10

Vortragender: **Dipl.-Phys. Enrico Klotzsch**
TU Wien, IAP

Thema: **Binding-Activated Localization Microscopy of DNA Structures**

Kurzfassung

Many nucleic acid stains show a strong fluorescence enhancement when bound to double-stranded DNA. Here we use two different DNA-binding dyes, YOYO-1 and PicoGreen, for superresolution imaging of DNA-structures with binding-acitvated localization microscopy (BALM). Optimization of fluorophore brightness and dynamic labeling conditions yielded a resolution of ~14 nm (FWHM) and a spatial sampling of 1/nm when imaging spin-coated DNA molecules with YOYO-1. BALM with PicoGreen was used to visualize the organization of the bacterial chromosome in fixed Escherichia coli cells with unprecedent resolution.
Localization microscopy relies on the separation of the fluorescence emission from individual molecules inside a diffraction-limited spot by sequential excitation. The activation of sparse subsets in PALM, STORM or blinking microscopy achieves this, but suffers from an insufficient ratio between dark and bright fluorophores that limits the labeling density and, finally, the image resolution. Here we alternatively utilize dyes that are ‘switched on’ upon binding to a target structure and localize them under dynamic binding conditions. This method is termed Binding-Activated Localization Microscopy (BALM).

Alle interessierten Kolleginnen und Kollegen sind zu diesem Seminar
(45 min mit anschließender gemeinsamer Diskussion) herzlich eingeladen.

G. Schütz e.h.
(Seminar-Chairperson)

H. Störi e.h.
(LVA-Leiter)