



17th International Workshop on “Single Molecule Spectroscopy and Ultrasensitive Analysis in the Life Sciences”

September 7 - 9, 2011
Berlin-Adlershof, Germany

Program

Organised by



Program

Wednesday, September 7, 2011

11:45 – 12:45 **Registration and collection of workshop material**
Workshop site: „Max-Born-Saal“

Chair: Rainer Erdmann

12:45 – 12:55 *Rainer Erdmann, Berlin, Germany*
Opening Remarks

12:55 – 13:25 *Rainer Heintzmann, Jena, Germany (Invited Paper)*
High Resolution Microscopy: Linear and Non-Linear Approaches

13:25 – 13:45 *Antonia Göhler, Würzburg, Germany (Student Award)*
Super-Resolution dSTORM Imaging of Human Galectin-1 Interacting
with Neuroblastoma Cells

13:45 – 14:05 *André Lampe, Berlin, Germany (Student Award)*
Multi-color direct STORM with red emitting carbocyanines

14:05 – 14:25 *Haisen Ta, Göttingen, Germany*
Gaining More Information with CW-STED Microscopy by Time-gated
Detection

14:25 – 14:45 *Michael Schwering, Heidelberg, Germany (Student Award)*
Super-Resolution by Localization Microscopy Simplified

14:45 – 15:05 *Mike Friedrich, Würzburg, Germany (Student Award)*
STED-SPIM: Stimulated Emission Depletion Improves Sheet
Illumination Microscopy Resolution

15:05 – 15:40 COFFEE BREAK

Chair: Rainer Heintzmann

15:40 – 16:10 *Thomas Dertinger, Los Angeles, USA (Invited Paper)*
Superresolution Optical Fluctuation Imaging: Towards Rapid,
Multicolor and Three-dimensional Superresolution Fluorescence
Microscopy

16:10 – 16:30 *Katrin Heinze, Vienna, Austria / Würzburg, Germany*
Color Coded Optical Nano-Sectioning (COCOS) Reveals Focal
Adhesion Dynamics

16:30 – 16:50 *Felix Koberling, Berlin, Germany*
Next Generation TCSPC Detection

16:50 – 17:10 *Ivan Rech, Milano, Italy*
Parallel fluorescence photon timing module with monolithic SPAD
array detector

Program

- 17:10 – 17:30 *Alexey I. Chizhik, Göttingen, Germany*
Modifying the fluorescence properties and determining the quantum yield of a single molecule with a tunable optical subwavelength microcavity
- 17:30 – 17:50 *Aurélie Dupont, Munich, Germany*
Novel 3D single particle methods reveal new details in the foamy virus entry and fusion processes
- 17:50 – 18:10 *Richard Hildner, Castelldefels (Barcelona), Spain*
Femtosecond Dynamics of Single Chromophores and Single Light-Harvesting Complexes at Room Temperature
- 18:30 RECEPTION

Thursday, September 8, 2011

Chair: Ben Schuler

- 08:30 – 09:00 *Achillefs N. Kapanidis, Oxford, UK (Invited Paper)*
Single-molecule fluorescence in bacterial cells
- 09:00 – 09:20 *Ingo H. Stein, Munich, Germany (Student Award)*
Single-Molecule Four-Color FRET Visualizes Energy-Transfer Paths on DNA Origami
- 09:20 – 09:40 *Justin Pinkney, Oxford, UK (Student Award)*
Single-molecule fluorescence studies of site-specific DNA recombination
- 09:40 – 10:00 *Geraint Evans, Oxford, UK (Student Award)*
Real-time DNA polymerase fingers closing/opening during DNA synthesis
- 10:00 – 10:20 *A.L. Shchukina, Moscow, Russian Federation (Student Award)*
Photon statistics of single donor-acceptor pair fluorescence as a new method for studying Förster Resonance Energy Transfer (FRET)
- 10:20 – 10:55 COFFEE BREAK

Chair: Achillefs N. Kapanidis

- 10:55 – 11:25 *Ben Schuler, Zurich, Switzerland (Invited Paper)*
Protein Folding Dynamics from Single Molecule Spectroscopy

Program

- 11:25 – 11:45 *Irina V. Gopich, Bethesda, USA*
Single-molecule FRET: Theory and analysis of photon sequences
- 11:45 – 12:05 *Niko Naredi-Rainer, Munich, Germany (Student Award)*
Ion-specific effects on α -helices
- 12:05 – 12:25 *William A. Eaton, Bethesda, USA*
Single-Molecule FRET and Transition Paths in Protein Folding
- 12:25 – 12:45 *Thomas-Otavio Peulen, Düsseldorf, Germany (Student Award)*
Quantitative extraction of structural and dynamic properties in the protein hGBP-1 by single molecule FRET, fluorescence correlation spectroscopy and ensemble fluorescence measurements
- 12:45 – 13:00 GROUP PICTURE
- 13:00 – 14:00 LUNCH

Chair: Thomas Dertinger

- 14:00 – 14:20 *Victoria Birkedal, Århus, Denmark*
Controlled opening of the lid of a DNA box: a FRET study
- 14:20 – 14:40 *Matthias Geissbuehler, Lausanne, Switzerland (Student Award)*
Nonlinear Correlation Spectroscopy (NLCS)
- 14:40 – 15:00 *Kerstin Weiß, Göttingen, Germany (Student Award)*
Quantifying the Diffusion of Membrane Proteins and Peptides in Lipid Bilayers
- 15:00 – 15:20 *Christoph Pieper, Göttingen, Germany (Student Award)*
Size and shape determination of macromolecules by fluorescence correlation spectroscopy
- 15:20 – 15:40 *Alvaro H. Crevenna, Munich, Germany*
Monitoring actin polymerization with fluorescence fluctuation spectroscopy
- 15:40 – 18:40 POSTER SESSION and PRODUCT PRESENTATION
- 20:00 DINNER

Program

Friday, September 9, 2011

Chair: Theo Lasser

- 08:30 – 09:00 *Ulrich Kubitscheck, Bonn, Germany (Invited Paper)*
Single Molecule Imaging Reveals Intranuclear Structure and Dynamics
- 09:00 – 09:20 *Steven W. Magennis, Manchester, UK*
Global structure of self-assembled branched DNA molecules in solution
- 09:20 – 09:40 *Seok-Cheol Hong, Seoul, Korea*
Single-molecule investigation of the B-Z transition under mechanical control
- 09:40 – 10:00 *Konstantinos Lympieropoulos, Heidelberg, Germany*
Experimental and modeling studies on EpoR-EPO signaling on the single-molecule and single-cell level
- 10:00 – 10:20 *Stefan Bollmann, Würzburg, Germany (Student Award)*
Dimerization of organic fluorophores reports on conformational dynamics of biopolymers
- 10:20 – 10:40 *Susanne Franziska Fenz, Leiden, The Netherlands*
CXCR4-SDF1 α mediated chemotaxis - from tissue to the single-molecule level
- 10:40 – 11:15 COFFEE BREAK

Chair: Ulrich Kubitscheck

- 11:15 – 11:45 *Xiaoliang Sunney Xie, Cambridge, USA (Invited Paper)*
Life at the Single Molecule Level
- 11:45 – 12:05 *Ahmed A. Heikal, Duluth, USA*
Single molecule studies of Bodipy-FTY720 (an immune suppressor analog) in biomembranes
- 12:05 – 12:25 *Sven zur Oven-Krockhaus, Tübingen, Germany (Student Award)*
Single molecule spectroscopy to characterise novel bimolecular fluorescence complementation (BiFC) proteins as innovative tools for in vivo interaction studies
- 12:25 – 12:45 *Tatyana Terentyeva, Leuven, Belgium (Student Award)*
Dynamic disorder in enzyme catalyzed reactions: a general phenomenon?

Program

- 12:45 – 13:05 *Alexandre Fürstenberg, Stanford, USA / Geneva, Switzerland*
Conformational Dynamics and Diversity of Single G Protein-Coupled Receptors Trapped in Solution or Imaged in Living Cells

- 13:05 – 14:15 LUNCH

Chair: Xiaoliang Sunney Xie

- 14:15 – 14:35 *Enrico Klotzsch, Zurich, Switzerland*
Binding-activated localization microscopy of DNA structures
- 14:35 – 14:55 *Edward A. Lemke, Heidelberg, Germany*
Labeling freedom for the single molecule spectroscopist
- 14:55 – 15:15 *Paul Dalgarno, St Andrews, UK*
Probing the unfolding and ligand-binding dynamics of single RNA aptamers using controlled chemical denaturation
- 15:15 – 15:35 *Jan Vogelsang, Regensburg, Germany*
Self-Assembly of Highly Ordered Conjugated Polymer Aggregates with Long-Range Energy Transfer
- 15:35 – 15:55 *Eyal Nir, Be'er-Sheva, Israel*
Disentangling Subpopulations in Single-Molecule FRET and ALEX Experiments with Photon Distribution Analysis
- 15:55 – 16:05 *Rainer Erdmann, Berlin, Germany*
Presentation of "Student Award"
- 16:05 – 16:15 *Xiaoliang Sunney Xie, Cambridge, USA*
Concluding Remarks
- 16:15 End of Workshop