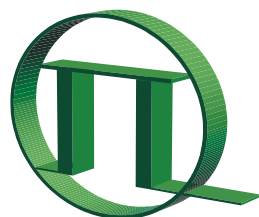


# 10<sup>th</sup> International Workshop on “Single Molecule Detection and Ultrasensitive Analysis in Life Sciences”

Organized by  
PicoQuant GmbH



**PICOQUANT** GmbH  
Unternehmen für optoelektronische  
Forschung und Entwicklung

## Program

September 22 - 24, 2004  
at WISTA Campus  
Berlin-Adlershof (Germany)

## Program (subject to alterations)

### Tuesday, 21<sup>st</sup> September 2004

18.00 - 19.00 REGISTRATION (Ibis Berlin Adlershof Hotel)

### Wednesday, 22<sup>nd</sup> September 2004

08.00 - 09.00 REGISTRATION (Conference room)

Chair: Rainer Erdmann

09.00 - 09.30 Rainer Erdmann, Berlin  
Opening Remarks & History

09.30 - 10.20 Rudolf Rigler, Stockholm (**Plenary Lecture**)  
Confocal Single Molecule Detection and FCS: Past and Future

10.20 - 10.45 Don C. Lamb, Munich  
It's as easy as PIE: Applications of Pulsed Interleaved Excitation to  
FCCS and FRET

10.45 - 11.15 COFFEE BREAK

Chair: Thomas Schmidt

11.15 - 11.50 Markus Sauer, Bielefeld (**Invited Paper**)  
Conformational Dynamics and Diagnostic Applications of Single-  
Molecule Electron Transfer Probes

11.50 - 12.15 Ralf Kühnemuth, Düsseldorf  
Combining FCS and TCSPC: New Developments and Applications

12.15 - 12.40 Felix Koberling, Berlin  
Time-resolved Confocal Fluorescence Microscopy down to the Single  
Molecule Level with Multichannel Detection Capability

12.40 - 13.05 Oliver Piestert, Heidelberg (*Students Award*)  
Fluorescence Resonance Energy Transfer (FRET) and Photoinduced  
Electron Transfer (PET): Two Complementary Techniques to Study  
Conformational Dynamics in Single Biomolecules

13.05 - 14.05 LUNCH

Chair: Rudolf Rigler

14.05 - 14.40 Steve Soper, Baton Rouge (**Invited Paper**)  
Single Molecule Detection and Microfluidics: Rethinking the DNA  
Diagnostic Paradigm

14.40 - 15.05 Fred Brouwer, Amsterdam  
Single Molecule Studies with Highly Solvatochromic Fluorescent  
Probes

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## Program (subject to alterations)

### Wednesday, 22<sup>nd</sup> September 2004

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- 15.05 - 15.30 Ralf Schmauder, Leiden (*Students Award*)  
Ultrasensitive Detection of the Redox-state of Copper Proteins Using Fluorescence
- 15.30 - 15.55 Katharina Stöhr, Heidelberg (*Students Award*)  
Novel Approaches for Fast and Highly Sensitive Diagnosis of Antibiotic Resistant Tuberculosis Germs
- 15.55 - 16.25 COFFEE BREAK
- Chair: Jörg Enderlein
- 16.25 - 17.00 Joe Lakowicz, Baltimore (**Invited Paper**)  
Radiative Decay Engineering: The Use of Metallic Structures to Control Fluorophore Emission
- 17.00 - 17.25 Atom Sarker, New York / Rochester  
Evanescent Nanometry: A New Tool for Single Molecule Investigation
- 17.25 - 17.50 Marjolein Koopman, Enschede (*Students Award*)  
A Near Field View on Lipid Rafts
- 17.50 - 18.15 Colin Coates, Belfast  
EMCCD Ultrasensitive Application Focus
- 18.15 - 18.40 Nils Calander, Göteborg  
A Nano-electrochemical Approach to Single Molecule Detection – A Water-based Ion Transistor Arrangement
- 19.00 RECEPTION

## Program (subject to alterations)

### Thursday, 23<sup>rd</sup> September 2004

Chair: Joe Lakowicz

- 09.00 - 09.50 Toshio Yanagida, Osaka (**Plenary Lecture**)  
Single Molecule Nano-bioscience
- 09.50 - 10.15 Anna Wozniak, Düsseldorf (*Students Award*)  
Analyzing Protein-Induced Structural Changes in RNA by Single-Molecule FRET
- 10.15 - 10.40 Michael Börsch, Stuttgart  
Stepwise Epsilon-subunit Rotation Reveals Heterogeneous Catalysis in Single Membrane-bound  $F_0F_1$ -ATP Synthase
- 10.40 - 11.10 COFFEE BREAK
- Chair: Markus Sauer
- 11.10 - 11.45 Niek van Hulst, Enschede (**Invited Paper**)  
Femtosecond Single Molecule Detection: Ultrafast Dynamics in Single and Coupled Quantum Systems
- 11.45 - 12.10 Monika Düser, Stuttgart (*Students Award*)  
3D-Localization of the A-Subunit of ATP Synthase by Single-Molecule FRET
- 12.10 - 12.35 David Grünwald, Münster (*Students Award*)  
Real-time Observation of Single Splicing Factor Molecules in Living Cell Nuclei
- 12.35 - 13.00 Mike Heilemann, Bielefeld (*Students Award*)  
Multistep Energy Transfer in Single Molecular Photonic Wires
- 13.00 - 13.10 GROUP PICTURE
- 13.10 - 14.10 LUNCH
- 14.10 - 17.00 POSTER SESSION and PRODUCT PRESENTATION
- 17.00 - 20.00 SIGHTSEEING BUSTOUR
- 20.00 DINNER

## Program (subject to alterations)

### Friday, 24<sup>th</sup> September 2004

Chair: Toshio Yanagida

- 09.00 - 09.50 Richard Keller, Los Alamos (**Plenary Lecture**)  
Efficient Single-Molecule Detection in Fluid Solution: Application to DNA Fragment Sizing in Flow and of Single Genomes
- 09.50 - 10.15 Wolfgang Fritzsche, Jena  
Integration of Single-Molecular Constructs in Microsystems for Optical Applications
- 10.15 - 10.40 Danielis Rutkauskas, Amsterdam (*Students Award*)  
Fluorescence Spectral Fluctuations of Single LH2 Complexes from Rhodospseudomonas Acidophila Strain 1005
- 10.40 - 11.10 COFFEE BREAK

Chair: Richard Keller

- 11.10 - 11.45 Jörg Enderlein, Jülich (**Invited Paper**)  
The Electrodynamics of Fluorescing Molecules in Solution and on Surfaces: From Basics to Applications
- 11.45 - 12.10 Christian Hübner, Halle  
A Simple Scheme for Efficient 3D Orientation Determination of the Emission Dipole of Single Molecules
- 12.10 - 12.35 Xavier Brokmann, Paris (*Students Award*)  
Exploring the Atomic-like Fluorescence Properties of Single CdSe Nanocrystals
- 12.35 - 13.00 Alexander Gaiduk, Düsseldorf (*Students Award*)  
Combining Atomic-force and Fluorescence Spectroscopy for Single Molecule Investigations

13.00 - 14.00 LUNCH

Chair: Steve Soper

- 14.00 - 14.35 Katrin Kneipp, Berlin / Cambridge (**Invited Paper**)  
Single Molecule Raman Spectroscopy and Life Sciences
- 14.35 - 15.00 Olivier Labeau, Talence (*Students Award*)  
Temperature Dependence of Single CdSe/ZnS Quantum Dots Luminescence Lifetime
- 15.00 - 15.25 Andong Xia, Beijing  
N-Terminal Fluorophore Labeling Combined with Donor-Donor Energy Migration for Study on Unfolding of Dimeric DsbC

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## Program (subject to alterations)

### Friday, 24<sup>th</sup> September 2004

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- 15.25 - 15.50 Meindert van Dijk, Leiden (*Students Award*)  
Third-Harmonic Generation from Single Gold Nanoparticles
- 15.50 - 16.20 COFFEE BREAK
- Chair: Katrin Kneipp
- 16.20 - 16.55 Thomas Schmidt, Leiden (**Invited Paper**)  
Inside a Signaling Pathway. A Single Molecule Study
- 16.55 - 17.20 Erwen Mei, Philadelphia  
Probe Conformational Dynamics of Proteins by Single Molecule Fluorescence and Phosphorescence
- 17.20 - 17.45 Jonathan Larson, Woburn  
Sequence Motif Mapping of Long DNA Molecules by Single Molecule Analysis
- 17.45 - 17.55 Rainer Erdmann, Berlin  
Presentation of „SMD Students Award“
- 17.55 Richard Keller, Los Alamos  
Concluding Remarks