Program

Wednesday, September 2

12:00 - 13:00 Registration and collection of workshop material

13:00 - 13:15 Rainer Erdmann, Berlin, Germany, Opening Remarks

Session: Methods and techniques 1 Chair: Rainer Erdmann

13:15 - 13:45 ***Jörg Enderlein**, Göttingen, Germany*
Cryo-Fluorescence Microscopy, Super-Resolution Optical Fluctuation Imaging, and Metal-Induced Energy Transfer

13:45 - 14:05 ***Michael Metzger**, Tübingen, Germany (Student Award)*
Resolution enhancement for scanning microscopy by immersion at low temperature

14:05 - 14:25 ***Alexey Chizhik**, Göttingen, Germany*
Photo-reactivation of luminescent centers in single SiO_2 nanoparticles

14:25 - 14:45 ***Daryan Kempe**, Aachen, Germany (Student Award)*
Accurate fluorescence quantum yield determination by fluorescence correlation spectroscopy

14:45 - 15:20 COFFEE BREAK AND PRODUCT DEMONSTRATION

Session: FRET/FCS

15:20 - 15:50 ***Taekjip Ha**, Urbana, United States (Invited Talk)*
Ultrahigh resolution single molecule fluorescence-force spectroscopy and engineering of a superenzyme

15:50 - 16:10 ***Dagmar Klostermeier**, Muenster, Germany*
Using smFRET towards understanding structure, function and dynamics of molecular machines: The role of conformational changes for DNA supercoiling by gyrase

16:10 - 16:30 ***Ralf Kühnemuth**, Düsseldorf, Germany*
Quantitative experimental and theoretical investigation of diffusion of macromolecules through gel matrices by fluorescence methods

16:30 - 16:50 ***Sven Schneider**, Lübeck, Germany (Student Award)*
Pressure unfolding of a model folding protein followed by smFRET

16:50 – 17:10 ***Michael Schlierf**, Dresden, Germany*
farFRET: Extending the range in single-molecule FRET experiments beyond 10 nanometer

17:10 – 17:30 ***Daniela Wengler**, München, Germany (Student Award)*
Studying the function of BAP in the nucleotide cycle of BiP by spFRET using MFD-PIE

18:00 - … WELCOME RECEPTION

Thursday, September 3

Session: Methods and techniques 2 — Chair: Taekjip Ha

09:00 - 09:35 ***Philip Tinnefeld**, Braunschweig, Germany (Invited Talk)*
Nanophotonic Promises for Single-Molecule Detection

09:35 - 09:55 ***Zhiqin Chu**, Stuttgart, Germany (Student Award)*
Monitoring intracellular pH of living cells using nanodiamonds

09:55 - 10:15 ***Steve Blair**, Salt Lake City, United States*
UV fluorescence lifetime modification by Al and Mg plasmonic nanoapertures

10:15 - 10:35 ***André Klauss**, Potsdam, Germany*
Straightforward upgrade of a time-resolved confocal scanning microscope to a diffraction-unlimited STED nanoscope benefiting from time gating

10:35 - 11:10 COFFEE BREAK AND PRODUCT DEMONSTRATION

Session: Methods and techniques 3 — Chair: Atsushi Miyawaki

11:10 - 11:40 ***Felix Ritort**, Barcelona, Spain (Invited Talk)*
Measuring binding affinities using force methods

11:40 - 12:00 ***Kristin Grußmayer**, Heidelberg, Germany (Student Award)*
Counting by Photon Statistics - Fluorescence Quantification based on Photon Antibunching

12:00 - 12:20 ***Alexander Wolf**, Berlin, Germany (Student Award)*
Diffusion Analysis of NAnoscopic Ensembles (DANAE): A tracking-free assessment for spectrally resolved diffusive modes of densely and inhomogeneously distributed particles

12:20 - 12:40 ***Malte Wachsmuth**, Heidelberg, Germany*
Large-scale FCS to assess molecular diffusion and chromatin interaction in vivo

12:40 - 12:50 GROUP PICTURE

12:50 - 14:00 LUNCH BREAK

Session: Biological applications 1 — Chair: Felix Ritort

14:00 - 14:30 ***Atsushi Miyawaki**, Saitama, Japan (Invited Talk)*
Cruising inside X

14:30 - 14:50 ***Anne Plochowietz**, Oxford, United Kingdom (Student Award)*
Mobility and spatial distribution of transfer RNA (tRNA) in live bacteria using single-molecule tracking

14:50 - 15:10 ***Mario Schneider**, Düsseldorf, Germany (Student Award)*
Characterisation of the monomeric state of amyloid beta 42 with fluorescence-based techniques

15:10 - 15:30 ***David L.V. Bauer**, Oxford, United Kingdom*
Pulling it all Together: Single Molecule FRET Reports on Accurate Structure and Dynamics in Bacterial Transcription

15:30 - 15:50 ***Sinan Kilic**, Lausanne, Switzerland (Student Award)*
Multivalency and local competition of heterochromatin protein 1 governs dynamic protein turnover in stable heterochromatin domains

15:50 - 16:10 COFFEE BREAK

16:10 - 18:40 POSTER SESSION AND PRODUCT DEMONSTRATION

20:00 - 23:00 DINNER

Friday, September 4

Session: Super-resolution 1 Chair: Katharina Gaus

09:00 - 09:35 ***Theo Lasser**, Lausanne, Switzerland (Invited Talk)*
Seeing is believing - Voir est saVoir

09:35 - 09:55 ***Huw Colin-York**, Oxford, United Kingdom (Student Award)*
Investigating the active role of mechanical force during T-cell activation by super-resolved traction force microscopy

09:55 - 10:15 ***Jasper H. M. van der Velde**, Groningen, Netherlands (Student Award)*
Super-Resolution with Self-Healing Organic Fluorophores

10:15 - 10:35 ***Felix Koberling**, Berlin, Germany*
Advanced Pulse Pattern Generation and Fine Tuning for STED Microscopy

10:35 - 11:10 COFFEE BREAK

Session: Biological applications 2 Chair: Ingmar Schoen

11:10 - 11:40 ***Katharina Gaus**, Sydney, Australia (Invited Talk)*
Molecular insights into the regulation of T cell signalling

11:40 - 12:00 ***Michael Börsch**, Jena, Germany*
Motors, gears and controls of FoF1-ATP synthase monitored by single-molecule Förster resonance energy transfer

12:00 - 12:20 ***Richard Börner**, Zurich, Switzerland*
A macromolecular crowding study of RNA folding and activity – polymer pore size matters!

12:20 - 12:40 ***Fabian Wehnekamp**, München, Germany*
3D Real-Time Orbital tracking in zebrafish embryos: High spatiotemporal analysis of mitchondrial dynamics in neurons

12:40 - 13:00 ***Thomas Ruckelshausen**, Saarbrücken, Germany*
Darkfield hyperspectral imaging of Au-NPs in A549 cells

13:00 - 13:10 STUDENT AWARD PRESENTATION

13:10 - 14:20 LUNCH BREAK

Session: Super-resolution 2 Chair: Theo Lasser

14:20 - 14:50 ***Ingmar Schoen**, Zurich, Switzerland (Invited Talk)*
What superresolution microscopy can teach us about biomolecular structures in fixed cell cultures

14:50 - 15:10 ***Sebastian van de Linde**, Würzburg, Germany*
Quantitative Single-Molecule Localization Microscopy

15:10 - 15:30 ***Dirk Hähnel**, Göttingen, Germany*
Filling the usability gap: Bioinformatics solutions for Image-Scanning Microscopy, Stochastic Optical Fluctuation Imaging, and Surface Single Molecule Experiments

15:30 - 15:50 ***Chayan Kanti Nandi**, Mandi, India*
Single Molecule Blinking and Localization Based Super Resolution Imaging using Carbon Dots

15:50 - 16:00 CONCLUDING REMARKS by Taekjip Ha

16:00 - END OF WORKSHOP