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Research outputs:

Tuning biomimetic membrane barrier properties by hydrocarbon, cholesterol and polymeric additives
Research output: Research - peer-review › Journal article – Annual report year: 2017

A micro-opto-acousto-fluidic chip for single cell mechanics evaluation
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

Manipulation and Motion of Organelles and Single Molecules in Living Cells
Research output: Research - peer-review › Journal article – Annual report year: 2017

Optical and hydrodynamic stretching of single cells from blood
Research output: Research - peer-review › Conference article – Annual report year: 2017

Quantifying Force and Viscoelasticity Inside Living Cells Using an Active–Passive Calibrated Optical Trap
Research output: Research - peer-review › Book chapter – Annual report year: 2017

Roadmap for optofluidics
Research output: Research - peer-review › Review – Annual report year: 2017

A comprehensive strategy for the analysis of acoustic compressibility and optical deformability on single cells
Research output: Research - peer-review › Journal article – Annual report year: 2016

Optical Biosensors to Explore Biological Systems
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Optical sensors and their applications for probing biological systems

Optical two-beam trap in a polymer microfluidic chip
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Optical two-beam traps in microfluidic systems
Research output: Research - peer-review › Journal article – Annual report year: 2016
Quantum Information Protocols with Gaussian States of Light

Sap flow and sugar transport in plants
Research output: Research › peer-review › Journal article – Annual report year: 2016

All-silica microfluidic optical stretcher with acoustophoretic prefocusing
Research output: Research › peer-review › Journal article – Annual report year: 2015

Fiber-Based, Injection-Molded Optofluidic Systems: Improvements in Assembly and Applications
Research output: Research › peer-review › Journal article – Annual report year: 2015

Optical manipulation with two beam traps in microfluidic polymer systems
Research output: Research › peer-review › Article in proceedings – Annual report year: 2016

Monolithic integration of DUV-induced waveguides into plastic microfluidic chip for optical manipulation
Research output: Research › peer-review › Journal article – Annual report year: 2014

Optical manipulation of single molecules in the living cell
Research output: Research › peer-review › Journal article – Annual report year: 2014

Efficiency of osmotic pipe flows
Research output: Research › peer-review › Journal article – Annual report year: 2013

Polymer optofluidic chip with DUV-induced waveguides for optical manipulation
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2013

Pulsed laser manipulation of an optically trapped bead: Averaging thermal noise and measuring the pulsed force amplitude
Research output: Research › peer-review › Journal article – Annual report year: 2013

Quantitative determination of optical trapping strength and viscoelastic moduli inside living cells: Paper
Research output: Research › peer-review › Journal article – Annual report year: 2013

Analytic solutions and universal properties of sugar loading models in Münch phloem flow
Research output: Research › peer-review › Journal article – Annual report year: 2012

Optical stretching on chip with acoustophoretic prefocusing
Research output: Research › peer-review › Article in proceedings – Annual report year: 2012

In vivo Anomalous Diffusion and Weak Ergodicity Breaking of Lipid Granules
Research output: Research › peer-review › Journal article – Annual report year: 2011

Optical manipulation techniques
Research output: Research › peer-review › Book chapter – Annual report year: 2012

Active-passive calibration of optical tweezers in viscoelastic media
Research output: Research › peer-review › Journal article – Annual report year: 2010

Effect of energy metabolism on protein motility in the bacterial outer membrane
Research output: Research › peer-review › Journal article – Annual report year: 2009
Variety in intracellular diffusion during the cell cycle
Research output: Research - peer-review Journal article – Annual report year: 2009

Validation of FDT calibration method in complex media
Research output: Research - peer-review Article in proceedings – Annual report year: 2008

Brownian motion after Einstein and Smoluchowski: Some new applications and new experiments
Research output: Research - peer-review Journal article – Annual report year: 2007

Calibration of optical tweezers in viscoelastic media, method and simulation results
Research output: Research - peer-review Conference abstract in journal – Annual report year: 2007

Calibration of trapping force and response function of optical tweezers in viscoelastic media
Research output: Research - peer-review Journal article – Annual report year: 2007

Quantitative force calibration in viscoelastic media and living cells
Research output: Research - peer-review Conference abstract in journal – Annual report year: 2007

Quantitative approach to small-scale nonequilibrium systems
Research output: Research - peer-review Journal article – Annual report year: 2006

Quantitative studies of subdiffusion in living cells and actin networks
Research output: Research - peer-review Conference article – Annual report year: 2006

Stepwise bending of DNA by a single TATA box binding protein
Research output: Research - peer-review Journal article – Annual report year: 2006

tweezercalib 2.0: Faster version of MatLab package for precise calibration of optical tweezers
Research output: Research - peer-review Journal article – Annual report year: 2006

tweezercalib 2.1: Faster version of MatLab package for precise calibration of optical tweezers
Research output: Research - peer-review Journal article – Annual report year: 2006

Projects:

Highly sensitive quantum magnetometry using Nitrogen-Vacancy centers in diamond
Project: PhD

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Improved collection efficiency of photons from NV centers for applications in magnetometry
Project: PhD

Data-Analysis in Biomedical Research Based on Physical/Chemical Modeling: High-Throughput Drug Screening for Blood Coagulation and How to Overcome the Blood-Brain Barrier
Project: PhD
Theory and design of the chip-based microfluidic system ProCell
Project: PhD

Next generation BioPhotonics Workstation
Project: PhD

Supporting and stabilizing biomimetic membranes
Project: PhD

MD-Computer Simulations and Vibrational Spectroscopic Studies of Lipid-Protein Interactions: The Role of Interfacial Aromatic Residues
Project: PhD

A new way to test beta cell functionality in health and diabetes
Project: PhD

Nanofluidics for ssDNA analysis
Project: PhD

Entanglement Enhanced Quantum Communication and Bio-sensing
Project: PhD

Quantum Protocols with a Colour Centre in a Microcavity
Project: PhD

Plasmon supported optical nanosensors and their application for probing artificial and biological micro- and nanochannels
Project: PhD

A quantitative description of subcutaneous injections: from needle to clinical effect
Project: PhD

Multiscale Neuron-glial communications
Project: PhD

Integrated sorting of chromosomes
Project: PhD

BioPhotonics and BioOptofluidics using New Light Sculpting
Project: PhD

Development of micro-PIV techniques for applications in microfluidic systems
Project: PhD

Modelling af biologiske processer i forbindelse med Parkinsons syge
Project: PhD

Activities:

Deformation of single cells - optical two beam traps and more
Activity: Talks and presentations › Conference presentations
Optical and Hydrodynamic Stretching of Single Cells from Blood
Activity: Talks and presentations › Conference presentations

Optical manipulation with two beam traps in microfluidic polymer systems
Activity: Talks and presentations › Conference presentations

Exploring optical manipulation in and of cells
Activity: Talks and presentations › Conference presentations

Optical Manipulation with Two Beam Traps in Microfluidic Polymer Systems
Activity: Talks and presentations › Conference presentations