

TG Novel Micro-optomechanical Mirrors Overview

TG Leader	Stefanie Kroker
------------------	-----------------

TG Activities

- Development of low-noise optical systems based on micro-structured metasurfaces
- Testing in cavity experiments
- Development of reflective micro-optomechanical oscillators for cavity experiments near and below the SQL

TG Competences/Services

- Optical and multi-physics simulations and design
- Processing of micro- and nano-structured surfaces
- Optical characterization (spectrophotometry, cavity ringdown)
- Coating technology for dielectric materials
- Optical jointing and integration

Involved QF Members

Members	Institution	Relevant Expertise
Stefanie Kroker, Leader	PTB / TUBS	Complex Coupled High Index Waveguide Arrays ; Photonic Nanomaterials in the Strong Optomechanical Coupling Regime
Florian Bruns	PTB / TUBS	Photonic Nanomaterials in the Strong Optomechanical Coupling Regime
Liam Shelling Neto	TUBS	Complex coupled high index waveguide arrays
Johannes Dickmann	PTB/TUBS	Low-noise optical systems
Michèle Heurs	AEI / LUH	Backaction-Evading Techniques; Quantum Optomechanics
Nived Johny	AEI / LUH	Theoretical investigations of and experiments with novel micro-optomechanical oscillators
N.N.	AEI / LUH	Backaction-Evading Techniques
Mayra Garces- Schröder	TUBS	Nanophotonics for Atom and Ion Manipulation
Uwe Sterr	PTB	Novel Frequency References
Daniele Nicolodi	PTB	Novel Frequency References
Ernst Rasel	LUH	Quantum Gravimeters; Atom-Chip Based Gravimeters and Inertial Sensors
Karsten Danzmann	AEI / LUH	Experimental Quantum Opto-Mechanics

Harald Lück	AEI	Next Generation Gravitational Wave Observatories; Sub-Standard Quantum Limit Interferometry
Benno Willke	AEI	Squeezed Light Sources; Advanced Light Sources
Gerhard Heinzel	AEI	Laser Gradiometers, Optical Simulations
Boris Chichkov	LUH	Nanoscale Materials Processing
Ulf Hinze	LUH	Nanoscale Materials Processing
Frederik Lüssmann	TUBS	Microstructured mirrors for VCSELs
Marina Tred Nery	AEI	Laser stabilization with optomechanical mirrors.
Thomas Legero	PTB	Ultrastable laser cavities