



NEWS

from the **Science of Light**

Dear ,

Here you can find news about research and people from our institute.
Enjoy reading our January issue!

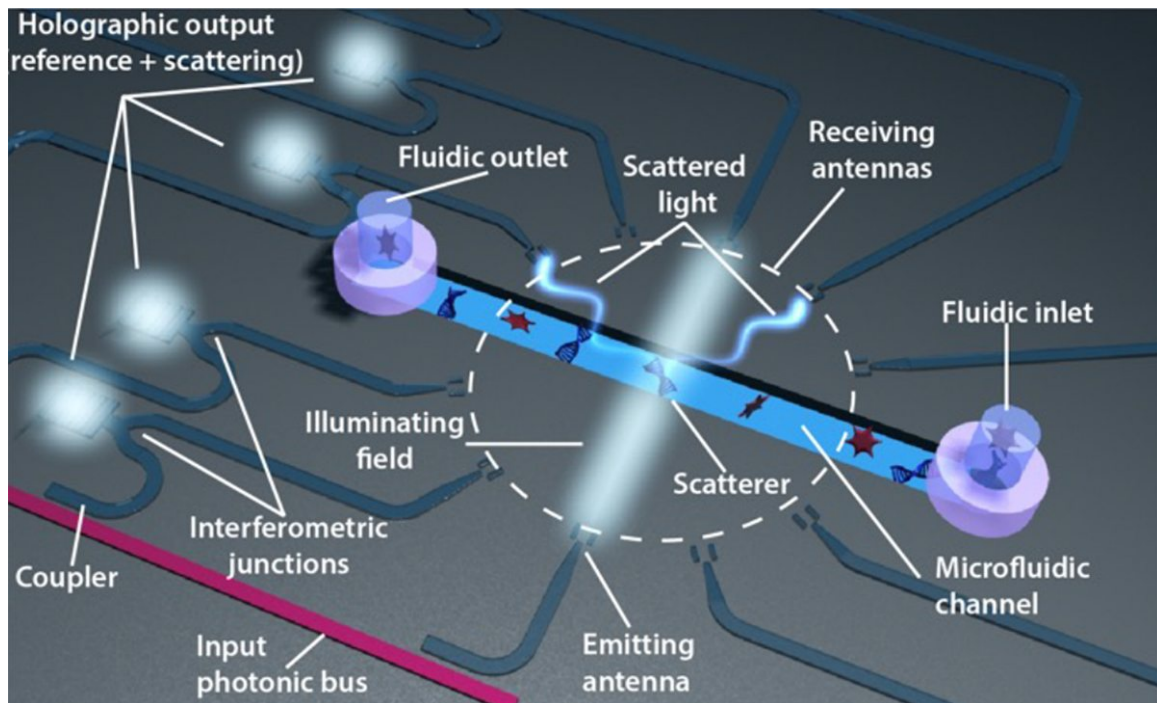
Yours sincerely,

Max Planck Institute for the Science of Light (MPL)

Research

A paradigm shift for revolutionizing lab-on-a-chip bioimaging technology

The research project “On-chip tomographic microscopy: a paradigm shift for revolutionizing lab-on-a-chip bioimaging technology” (DISRUPT) is starting with the participation of the research department for Biological Optomechanics under Prof. Jochen Guck, within the EIC Pathfinder Open (HORIZON), the primary EU instrument for interdisciplinary innovation funding. > **MORE**

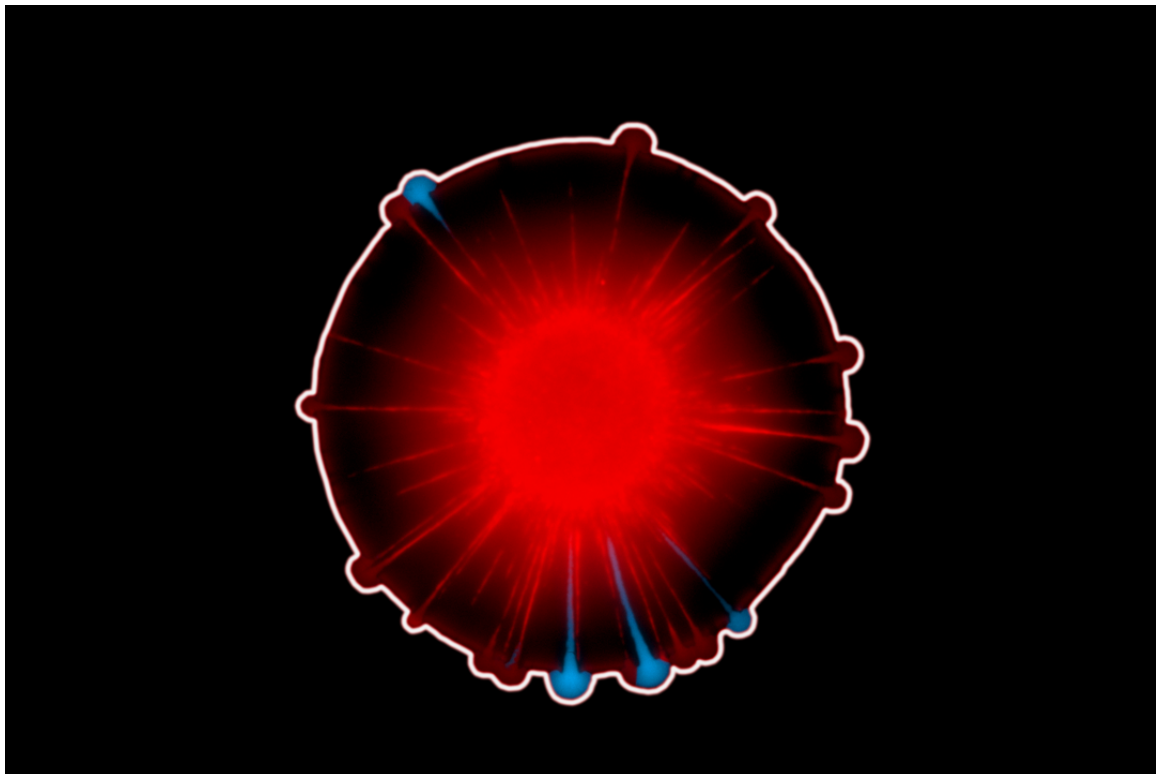


Interdisciplinary research project attracts IZKF grant funding

Prof. Jochen Guck, in interdisciplinary collaboration with Prof. Maximilian Waldner, Medical Clinic 1 of the Universitätsklinikum Erlangen, will investigate “Mechanical properties of innate immune cells: functional relevance and therapeutic implications in colitis”. > **MORE**

How physics changes drug resistance evolution

Researchers from the Kayser research group at MPL have discovered how physical interactions between cells can allow treatment resistant cells to survive in a tumor, despite growing slower than non-resistant cells. > **MORE**



Exploring brain mechanics: FAU Collaborative Research Center (CRC) approved

Within the next four years, the FAU Collaborative Research Center CRC 1540 “Exploring Brain Mechanics” (EBM) will investigate the origin, as well as the biological and medical implications of the mechanical properties of the central nervous system. Two research groups from MPL will be involved. > **MORE**

Publications

Quantum coherent control in pulsed waveguide optomechanics

A team around MPL research group leader Birgit Stiller presents an effective Hamiltonian formalism that links waveguide optomechanics and cavity optomechanics, which can be used in the classical and quantum regime including quantum noise. Based on their formalism, an analytical solution for the coupled-mode equation in a Brillouin process is provided and they found that the strong coupling regime is already accessible in current waveguide approaches by using pulses. They further investigated several possible experiments within waveguide optomechanics, including Brillouin-based coherent transfer, Brillouin cooling, and optoacoustic entanglement.

Junyin Zhang, Changlong Zhu, Christian Wolff, and Birgit Stiller
Phys. Rev. Research 5, 013010 – Published 11 January 2023
DOI: 10.1103/PhysRevResearch.5.013010

Events

The quantum way of doing computations, simulations and measurements

Professor Rainer Blatt was the first speaker in the year 2023 at the Distinguished Lecturer Series of the Max Planck Institute for the Science of Light. He gave a talk about “The Quantum Way of Doing Computations, Simulations and Measurements” on Friday, January 20. > **MORE**



Coburg physics students visit MPL

Students from the University of Coburg visited MPL in January to learn about the different research fields at the institute. The focus of their tour was on the development and use of photonic crystal fibres. > **MORE**

Jobs

Postdoctoral Position in Molecular Quantum Optics: Would you like to work in a highly motivated research team that aims to understand and control the interaction of quantum emitters, in particular organic molecules, with their nanoscopic environment and with each other? > **MORE**

Postdoctoral position for developing a novel source of squeezed light for quantum imaging: Do you have a strong grasp of experimental optics as well as quantum and nonlinear optics? Are you interested in a project that will build sources of pulsed squeezed light for future use in a quantum-enhanced Raman microscope? > **MORE**

Looking for a Master's degree or Ph.D. at the forefront of optics?

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Impressum:

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