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MAX PLANCK INSTITUTE
FOR THE SCIENCE OF LIGHT

NEWS

from the **Science of Light**

Dear ,

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

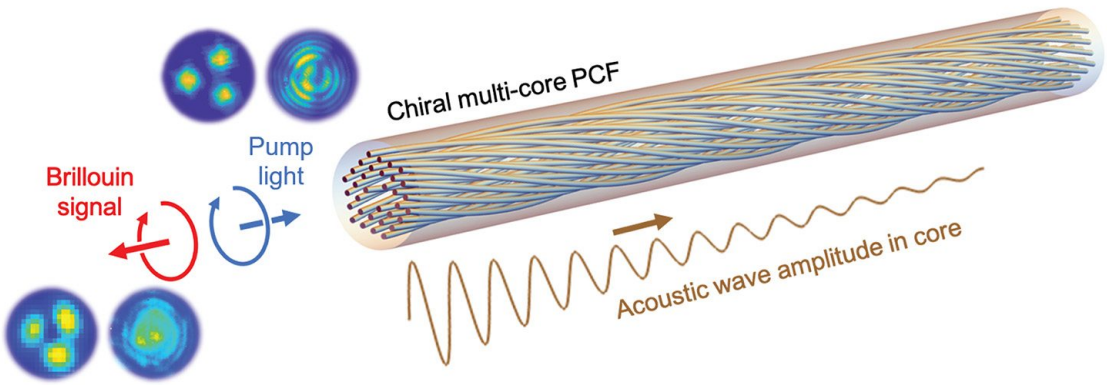
Yours sincerely,

Max Planck Institute for the Science of Light (MPL)

Research

Breakthrough in optical information transmission: one-way street for optical vortices

Scientists at MPL have managed for the first time to create a unidirectional device that significantly increases the quality of a specific class of transmitted signals in optical communications: optical vortices. By transmitting selective optical vortex modes exclusively unidirectionally, the developed device reduces detrimental backscattering to a minimum. **> MORE**



Cavity optomechanics meets topological phononics

A theory-experiment collaboration between the MPL and Caltech has achieved the first demonstration of topological transport of mechanical vibrations in an optomechanical array. This unlocks the full toolbox of cavity optomechanics, such as cooling, mechanical lasing, sensitive readout, and optical control of mechanical modes, for the area of topological phononics. **> MORE**

Publications

Multifocal confocal imaging system

The members of the Microendoscopy group headed by Dr. Kanwarpal Singh have published their recent research on the development of a multifocal confocal imaging system. They utilised the exceptionally high chromatic dispersion properties of Zinc Selenide to focus and collect different colors from a broadband laser from multiple depths within the sample simultaneously. This novel technique is a major step toward the development of high-resolution confocal endoscopes.

Sharma, G. and Singh, K. (2022), Ultralong Imaging Range Chromatic Confocal Microscopy. Adv. Photonics Res. 2200116.

Events

Creating the laser hammer and winning the Nobel prize: Donna Strickland visits MPL

Professor Donna Strickland visited the MPL on October 10th, 2022, as part of the Distinguished Lecturer Series (DLS) and gave a talk on the work that won her the 2018 Nobel Prize in Physics. **> MORE**

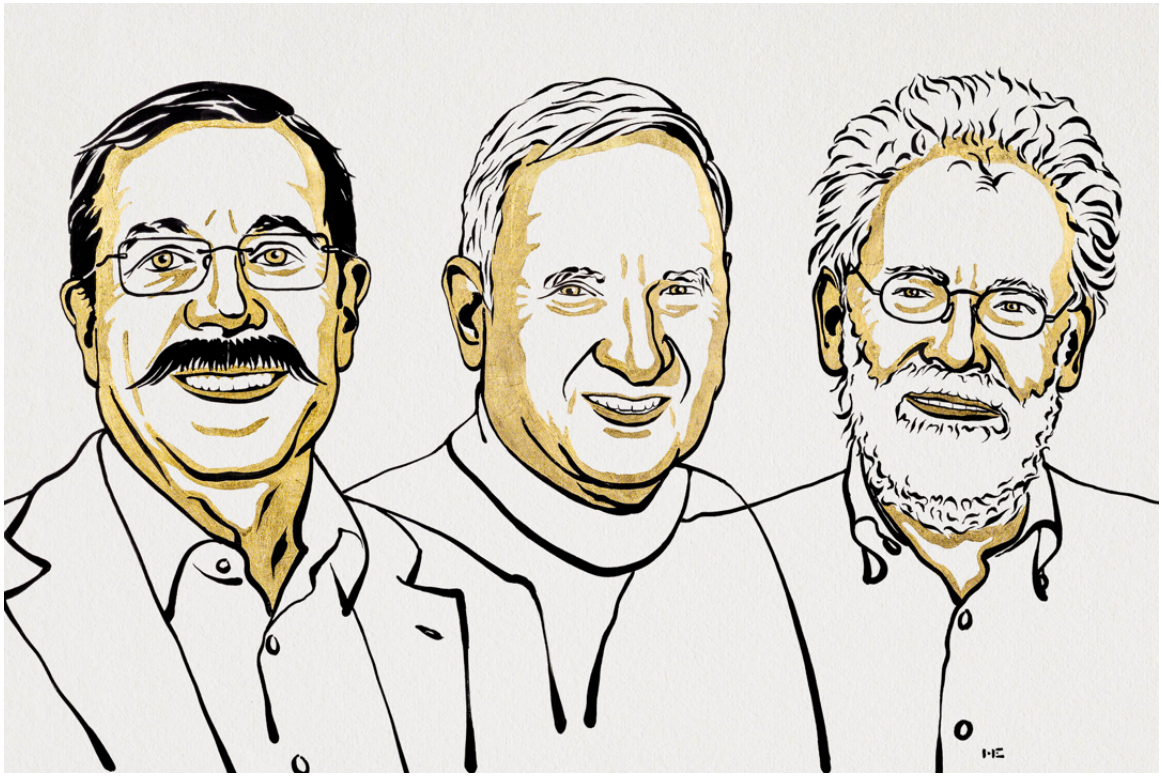
Spin Cavitronics IV at MPL organized by Silvia Viola Kusminskiy

The workshop will span three full days from Wednesday Dec 7th to Friday Dec 9th 2022. It is part of the series previously held at Max-Planck Institute for the Science of Light, Erlangen 2017, as a SPICE workshop in Mainz 2018, and at the Cavendish Lab, Cambridge 2019. The series aims to provide a platform for exchange and to promote new developments in the core issues of spin cavitronics, in particular exploring quantum coherence of magnons. **> MORE**

News

Nobel prize in physics underscores the enormous importance of quantum research

This year's Nobel Prize in Physics was awarded to three quantum researchers, Alain Aspect, John Clauser and Anton Zeilinger. According to the Royal Swedish Academy of Sciences, their experiments have laid the foundation for a new era in quantum technology. **> MORE**



People

Scholarship for Maximilian Eiche

Maximilian Eiche from the Research Group of Jona Kayser has received a scholarship from the Studienstiftung des deutschen Volkes for his Ph.D. **> 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**

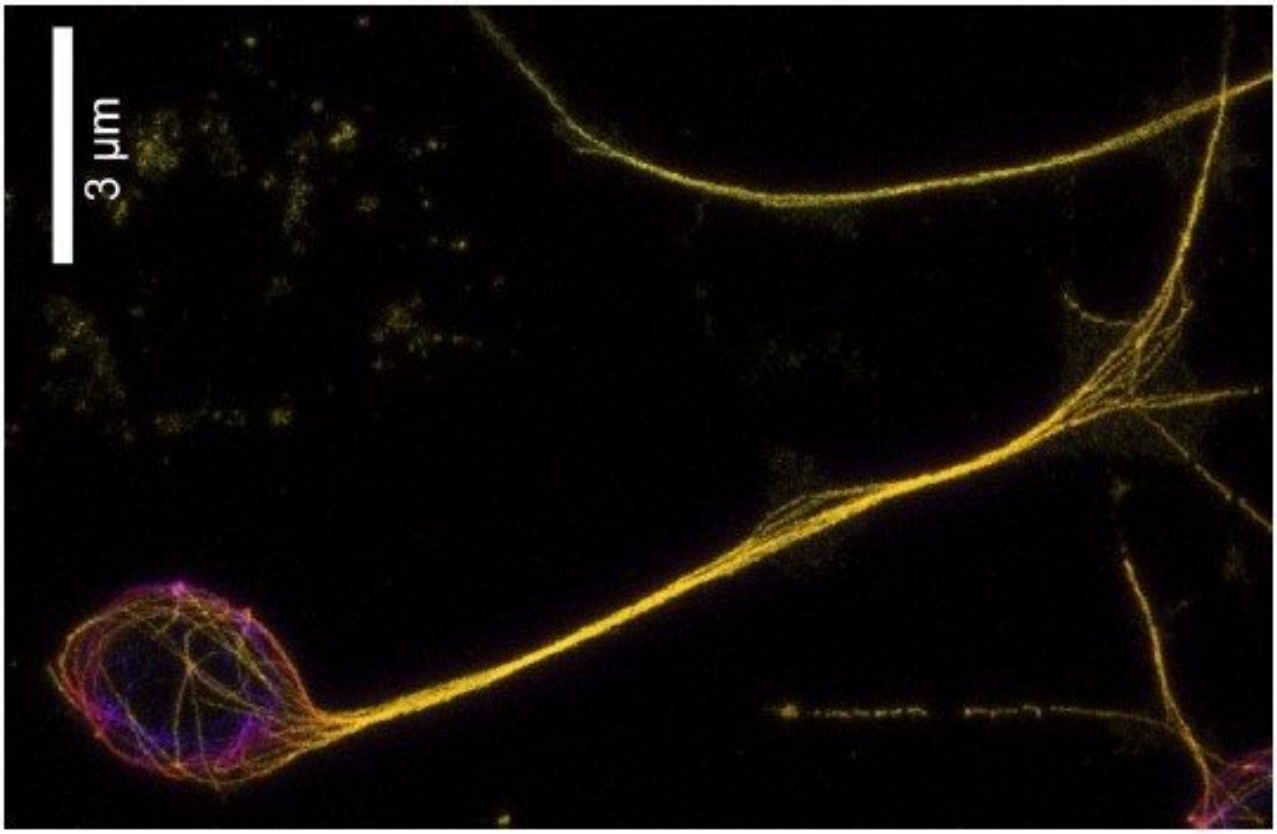
Postdoctoral position for developing a novel source of squeezed light for quantum imaging: Do you have a strong grasp of experimental optics as well as quantum and nonlinear optics? Are you interested in a project that will build sources of pulsed squeezed light for future use in a quantum-enhanced Taman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

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

> MORE

Researchers discover: This is how microtubuli can organize themselves in growing nerve cells.

For nerve cells (neurons) to be able to transport proteins and other crucial materials along their conducting fibres (axons), a directional carrier system is required. This consists of rod-like molecules, so-called microtubules. Researchers at the University of Cambridge and the Max Planck Zentrum für Physik und Medizin have now been able to demonstrate, for the first time, how microtubules are specifically aligned within growing axons by combining molecular biological methods with physical modelling and computer simulations. **> MORE**



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