

# NEWS

from the Science of Light

Dear ,

We would like to share with you some of the news about research and people from our institute. We hope you enjoy reading our seventh issue for 2023!

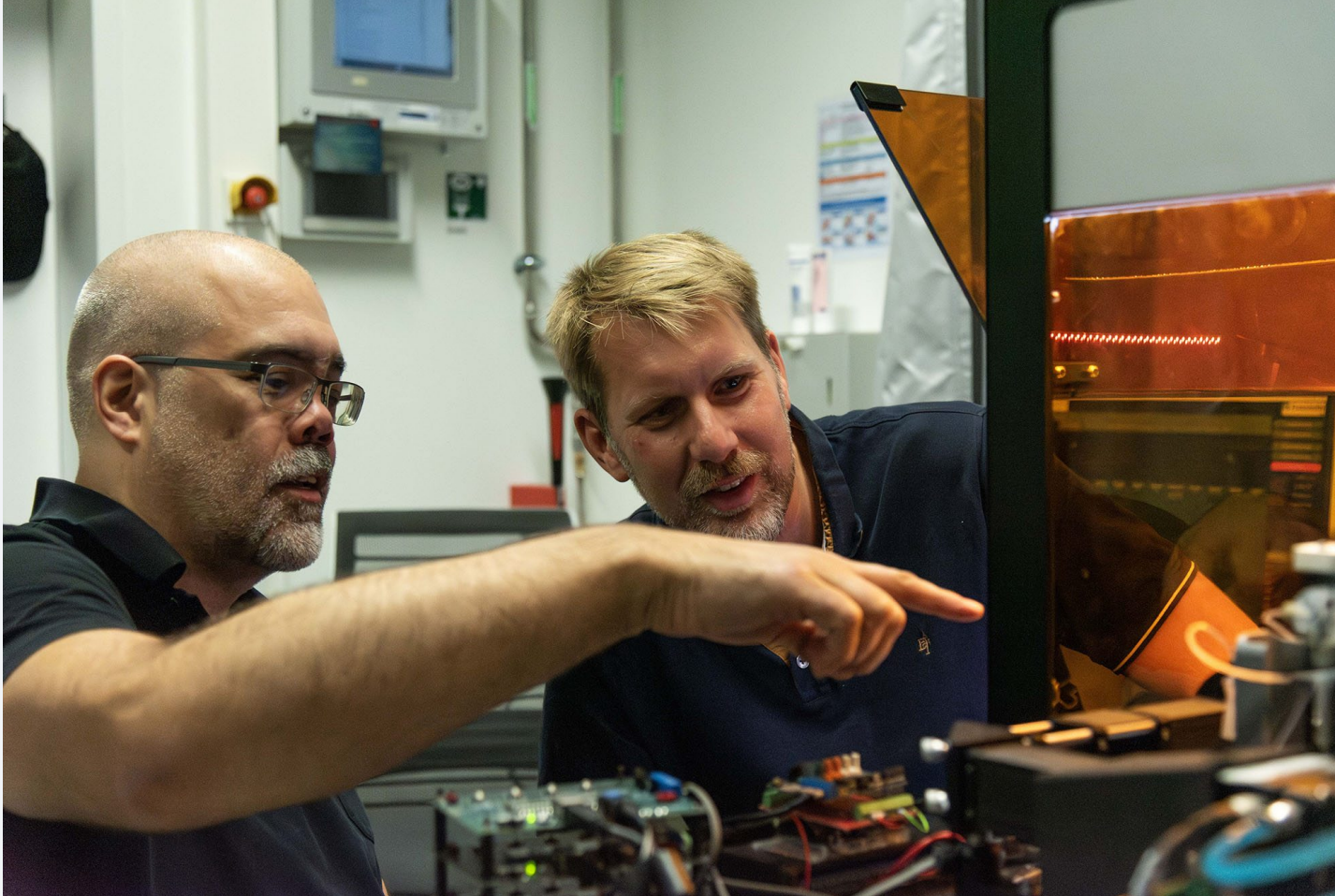
Yours sincerely,

Max Planck Institute for the Science of Light (MPL)

## Research

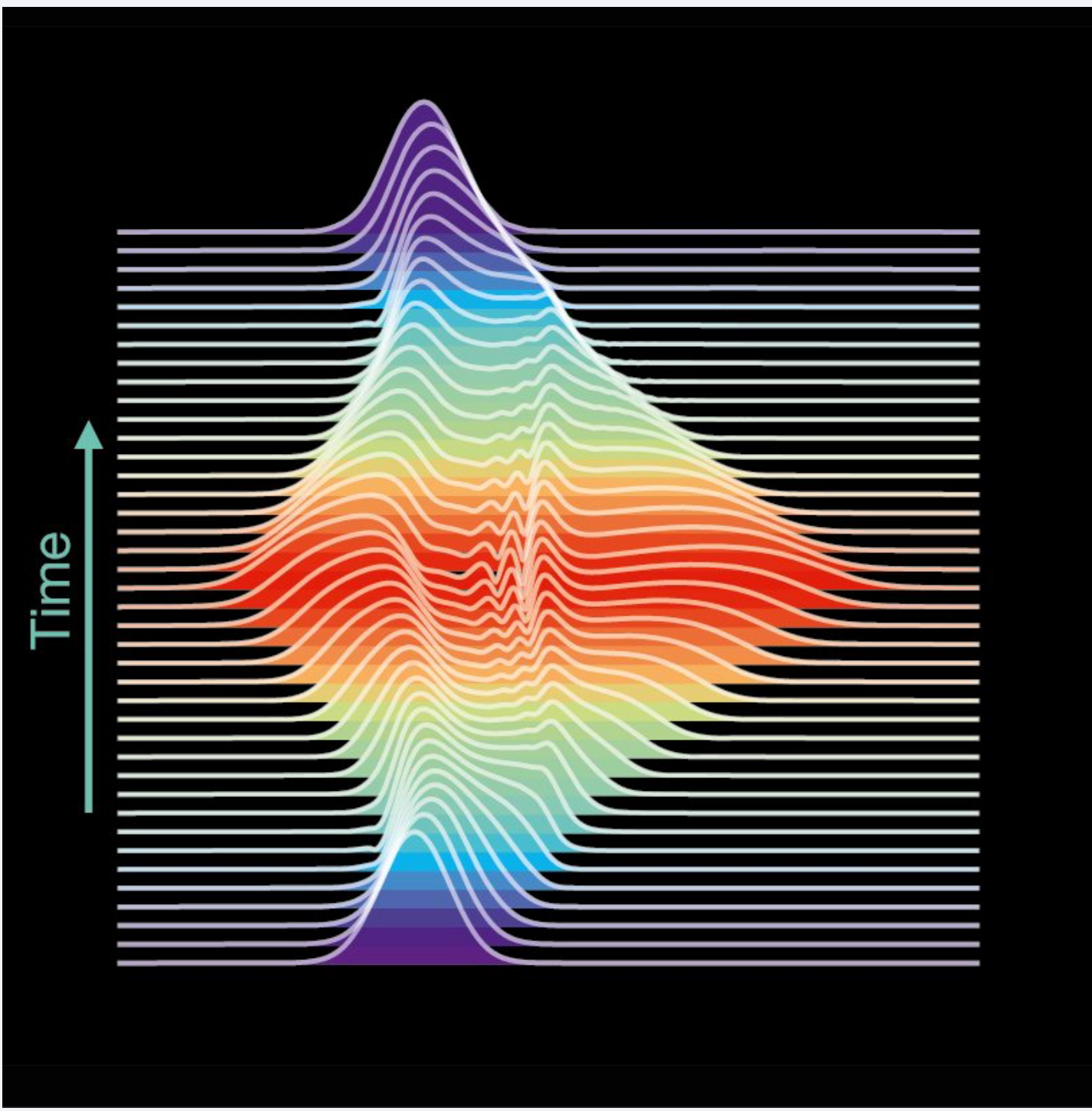
### AutoRAPID Project: Successful Test run of the Integrated Setup at MPL

The fully automated measurement of the biophysical properties of hundreds of cell samples in just a few days is the goal of the cooperation project "AutoRAPID", involving scientists from MPL and the Fraunhofer Institute for Production Technology and Automation (IPA) in Mannheim. For the first time, the biophysicists and automation engineers have assembled their individual components into a single setup in Erlangen. [> MORE](#)



### Efficient Training for Artificial Intelligence: new Physics-Based Self-Learning Machines

Artificial intelligence not only affords impressive performance, but also creates significant demand for energy. Victor López-Pastor and Florian Marquardt, two scientists at MPL, present a method by which artificial intelligence could be trained much more efficiently. Their approach relies on physical processes instead of the digital artificial neural networks currently used. [> MORE](#)



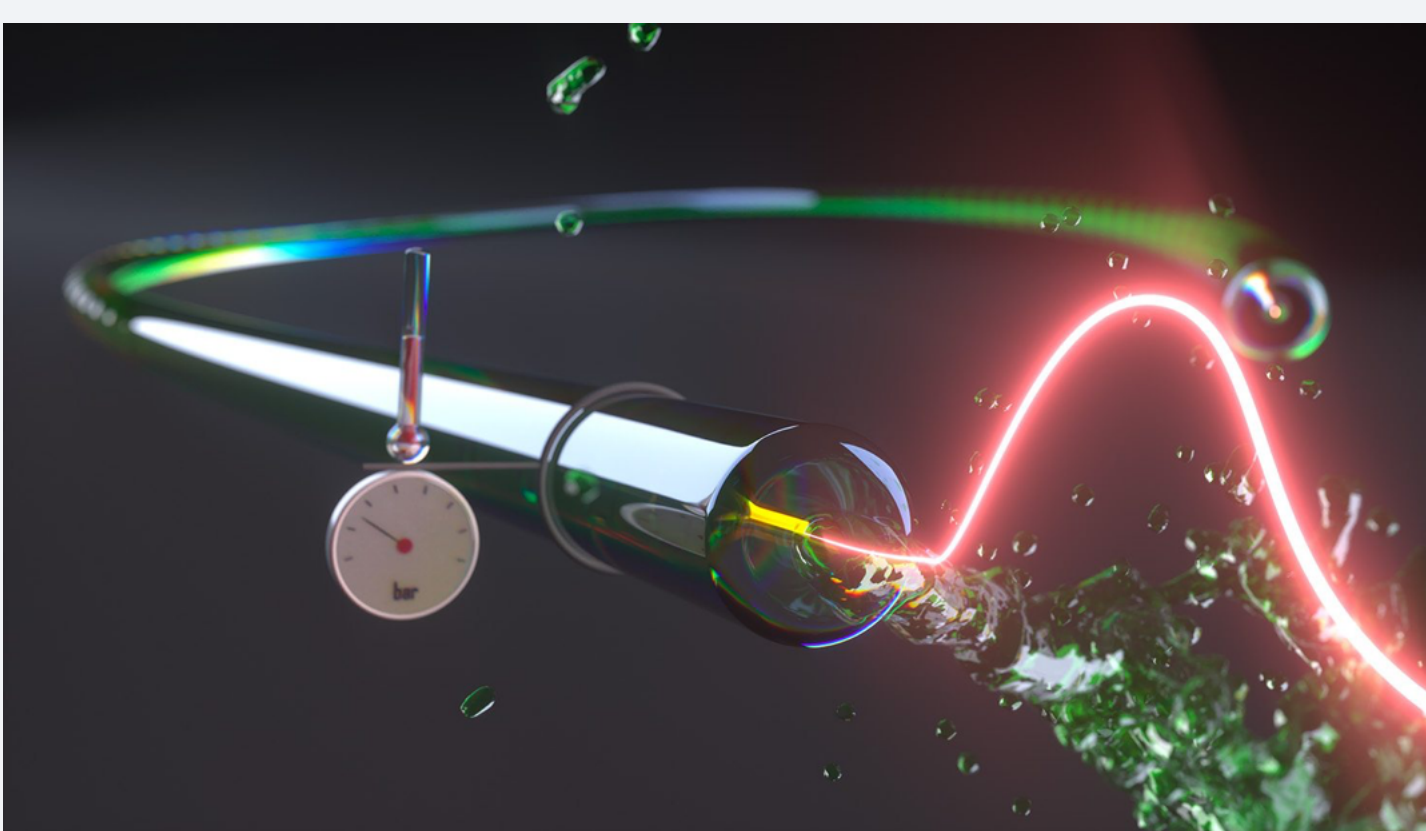
### Three new Grants to Study Complex Sugar Structures on the Cell Surface

The glycocalyx, a highly complex structure consisting of sugars, surrounds every cell in the body. The molecular organization of the glycocalyx, its response to genetic changes, and how these changes in turn regulate cellular processes are objects of research for Leonhard Mochl, research group leader for Physical Glycosciences at MPL. He has received three grants totalling around €580,000 for his research projects. [> MORE](#)



### Light and Sound Waves Reveal Negative Pressure

Negative pressure is a rare and challenging-to-detect phenomenon in physics. Using liquid-filled optical fibers and sound waves, researchers at MPL have now discovered a new method to measure it. In collaboration with the Leibniz Institute of Photonic Technologies in Jena, the scientists in the Quantum Optoacoustics research group, led by Birgit Stiller, can gain important insights into thermodynamic states. [> MORE](#)



## Events

### "Frontiers of Neuromorphic Computing" Workshop

The "Frontiers of Neuromorphic Computing" workshop attracted experts from all over the world to Erlangen in September. A great line-up of speakers from a diverse range of platforms, including electronic, magnetic, optical, mechanical and many more, created ideal conditions for the scientific exchange of experts and led to a lively discussion among the seminar attendees. [> MORE](#)



## People

### The Scientist Flore Kunst in the Fast Lane

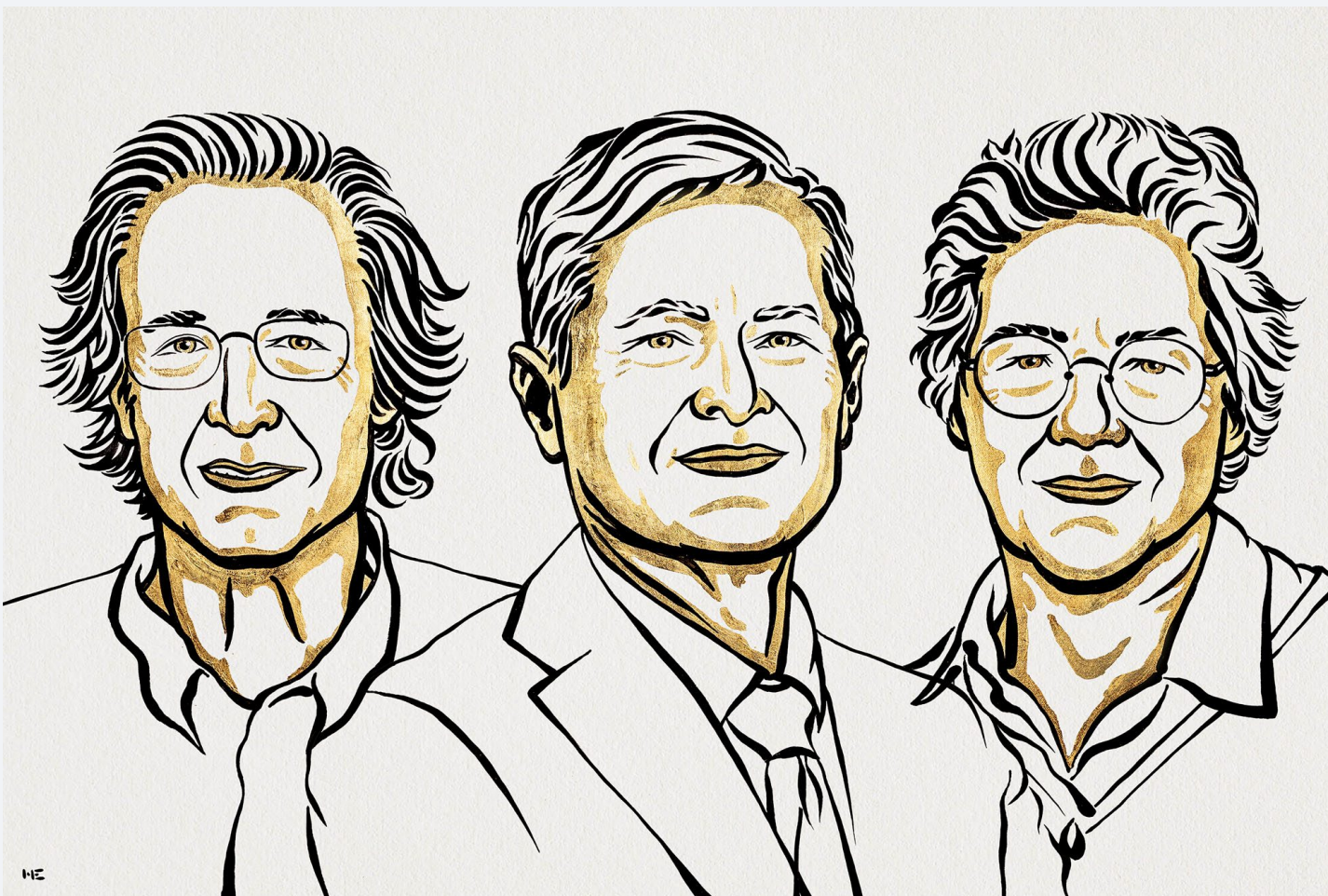
High praise for Flore Kunst. The physicist and researcher at MPL has been awarded a coveted spot in the Max Planck Society's Lise Meitner Excellence Program 2.0, alongside two other female scientists, and is now setting up her own independent research group. At the same time, Flore Kunst has received a Starting Grant from the European Research Council (ERC) and quickly raised research funding totalling 4.5 million euros. [> MORE](#)



## News

### NOBEL PRIZE IN PHYSICS 2023 - Science of Light Honoured

The highest scientific award in physics was this year awarded to Ferenc Krausz, Director of the Max Planck Institute of Quantum Optics, Garching, Germany, together with Pierre Agostini, and Anne L'Huillier. According to the Royal Swedish Academy of Sciences, the Nobel laureates have given humanity new tools for exploring the world of electrons inside atoms and molecules with their "experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter". [> MORE](#)



### Dress to Impress with the World of Light: Our Merchandise Shop is Online

We want to share our fascination for light with the world and make it visible for everyone. That is why we have designed our own Science of Light clothing series. The motifs symbolize topics from our basic research on the interaction between light and matter. Click here to go to our online store. [> MORE](#)



## Jobs

**Postdoctoral Position** in Non-Hermitian Topological Phenomena: The group of Dr. Flore Kunst investigates non-Hermitian topology in different contexts ranging from simple toy models admitting analytical descriptions to open quantum systems. The group also collaborates with local experimental group to directly test their models in the lab. [> MORE](#)

**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](#)

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

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