PRESS RELEASE

"Photonics4Future" webinar series continues

Online lectures on photonic future markets live and stream free of charge

Jena (Germany) / online

The "Photonics4Future" webinar series offers exclusive insights into research at the Fraunhofer Institute for Applied Optics and Precision Engineering IOF. Once a month, researchers present their latest technology highlights in a livestream. New dates have been set for 2025.

The live presentations take place every second Thursday of the month, from 2:00 – 2:45 p.m. Interested parties can join online via Microsoft TEAMS without registering in advance. Participation is free of charge.

The program at a glance:

- March 13, 2025, 2:00 - 2:45 p.m.
  "Aircraft-to-ground entanglement-based quantum key distribution"
  Dr. Christopher Spiess (Group leader "Quantum Cryptosystems", Department Photonic Quantum Systems)

  Quantum key distribution (QKD) offers secure sharing of secret keys backed by the laws of physics, particularly utilizing single photons. This presentation explores aircraft-to-ground entanglement-based QKD.

- April 10, 2025, 2:00 - 2:45 p.m.
  "Multicore Fibers: From Manufacturing Challenges to Cutting-Edge Applications"
  Dr. Nicoletta Haarlammert (Group leader "Fiber Technology", Department Laser and Fiber Technology)

  Multicore fibers enable powerful, compact laser systems through parallel signal amplification and coherent beam combination. This presentation will address manufacturing challenges, from preform development using the techniques of stacking and drilling to final fiber development.

- May 08, 2025, 2:00 - 2:45
  "Design and manufacturing of deformable mirrors"

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Dr. Matthias Goy (Group leader "Active and Adaptive Optics", Department Laser and Fiber Technology)

Deformable mirrors are a core component in active and adaptive optics (AO). The presentation includes an introduction to the world of AO and in particular shows different technologies for the design and fabrication of deformable mirrors for various applications in academia and industry.

- June 12, 2025, 2:00 - 2:45 p.m.
  "Power scaling and beam combining of fiber laser systems"
  Dr. Till Walbaum (Group leader "Laser Technology", Department Laser and Fiber Technology)

  High power lasers play a growing role in material processing, medical applications or long-range communication. The presentation will give an overview of power limitations in fiber systems and ways to overcome them.

- July 10, 2024, 2:00 - 2:45 p.m.
  "Additive manufacturing for metal optical components"
  Dr. Nils Heidler (Group leader "Metal Optics", Department Precision Optical Components and Systems)

  The additive manufacturing of mirror base bodies and optical housings offers high potentials for metal optical systems. Within this presentation, the application of laser powder-bed fusion of metallic materials for optical applications is explained.

Further information on the individual presentation is available online at:
https://s.fhg.de/P4F-2025-en

Interested parties can already make a note of the presentations in their calendar:
https://s.fhg.de/Photonics4Future-S2 (Outlook date as ICS file)

The event language is English.

Practical knowledge for the optics and photonic industry

Fraunhofer IOF launched its "Photonics4Future" webinar series in September 2024 to give decision-makers from the optics and photonics industry exclusive insights into the institute's current research and its practical applications. Due to high demand, the series will be continued in 2025.

In addition to high-end technologies, Fraunhofer IOF presents its extensive know-how along the entire photonic process chain with "Photonics4Future" - from the design of optical components and systems to their production and system integration. At the same

time, the series offers all participants the unique opportunity to gain practical knowledge directly from the institute's leading scientists and to exchange ideas with them.

Watch past presentations online

Past "Photonics4Future" lectures are available to view online:

- "Scaling Micro- and Nanophotonics: Wafer-Level Metasurfaces and Beyond" https://s.fhg.de/Photonics4Future-Metasurfaces
- "Compact and Efficient: Micro-optics transforming automotive lighting" https://s.fhg.de/Photonics4Future-Microoptics
- "Characterization of Optical Surfaces and Coatings" https://s.fhg.de/Photonics4Future-Optical-Surfaces
- "Multimodal 3D Measurement: Imaging Beyond Three Dimensions" https://s.fhg.de/Photonics4Future-3D-Measurement

About Fraunhofer IOF

The Fraunhofer Institute for Applied Optics and Precision Engineering IOF in Jena conducts application-oriented research in the field of photonics and develops innovative optical systems for controlling light - from its generation and manipulation to its application. The institute's range of services covers the entire photonic process chain from opto-mechanical and opto-electronic system design to the production of customer-specific solutions and prototypes. At Fraunhofer IOF, about 500 employees work on the annual research volume of 40 million euros.

For more information about Fraunhofer IOF, please visit:
www.iof.fraunhofer.de

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Press images

The following press image material can be found in the press area of the Fraunhofer IOF at https://www.iof.fraunhofer.de/en/pressrelease.html.

The webinar series "Photonics4Future" offers free online lectures on photonics markets of the future. © Fraunhofer IOF

"Photonics4Future" presents the latest technology highlights by Fraunhofer IOF. © Fraunhofer IOF