

# Karlsruhe Days of Optics & Photonics

November 24 - 25, 2015

## Karlsruhe Days of Optics & Photonics

Fortbildungszentrum für Technik und Umwelt (FTU)/  
Center for Advanced Technological and Environmental Training  
Campus North of the Karlsruhe Institute of Technology (KIT)  
Hermann-von-Helmholtz-Platz 1  
76344 Eggenstein-Leopoldshafen, Germany

## Organization

Stefanie Peer  
PhD Program Manager KSOP  
Phone: +49 (0)721 608 47018  
Fax: +49(0) 721 608 47882  
Email: peer@ksop.de

## Register online until September 30th, 2015

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With great pleasure we invite you to the

## 5<sup>th</sup> Karlsruhe Days of Optics & Photonics

on November 24 and 25, 2015

at the Center for Advanced Technological and Environmental Training (FTU) at Campus North of the Karlsruhe Institute of Technology (KIT), Germany

For the fifth time, KSOP organizes the two-day symposium Karlsruhe Days of Optics & Photonics (KDOP). Within the scope of the International Year of Light, we are especially proud of presenting both interesting speeches on brand new research results in the broad field of Optics and Photonics as well as creating a platform to establish and deepen your international network with representatives of academia and industry.

Our speakers highlight the five KSOP Research Areas while doctoral candidates showcase their research projects in a poster session and share their view on

the future of O&P with you.

Next year, the Karlsruhe School of Optics & Photonics celebrates its tenth anniversary. Even if the Excellence Graduate School of the Karlsruhe Institute of Technology is rather young, we consider the combination of basic and applied research in an international environment as well as the excellence in education the key success factors of KSOP.

We invite you to explore the fascinating world of Optics & Photonics with us during these two days!



Prof. Dr. Uli Lemmer,  
Coordinator of the Karlsruhe School of Optics & Photonics (KSOP)

9.00 a.m. Welcome and introduction  
Prof. Dr. Uli Lemmer - Light Technology Institute / Institute of Microstructure Technology, Karlsruhe Institute of Technology (KIT)

### Research Area I: Photonic Materials & Devices

9.15 a.m. Time-modulation, gain and nonlinearity: new venues for metamaterials and plasmonics  
Prof. Dr. Andrea Alù - Electrical & Computer Engineering department, University of Texas at Austin

10.15 a.m. Tailoring the optical response from photonic nanostructures  
Prof. Dr. Carsten Rockstuhl - Institute of Theoretical Solid State Physics, KIT

11.15 a.m. Coffee break

### Research Area II: Advanced Spectroscopy

11.30 a.m. Ultrafast dynamics of molecular, biological and nano-systems studied from the IR to the X-ray range  
Prof. Dr. Majed Chergui - Laboratory of Ultrafast Spectroscopy, Ecole Polytechnique Fédérale de Lausanne

12.30 p.m. Lunch break

1.45 p.m. Optics and spectroscopy for remote-sensing of the Earth's atmosphere  
Prof. Dr. Johannes Orphal - Institute for Meteorology and Climate Research - Atmospheric Trace Gases and Remote Sensing, KIT

2.45 p.m. Poster session (Research Areas I-III) & coffee break

### Research Area III: Biomedical Photonics

4.15 p.m. Using light to dissect and direct cellular organization and dynamics  
Prof. Dr. Lukas Kapitein - Cell Biology, Faculty of Science, Universiteit Utrecht

5.15 p.m. Fourier Domain Mode Locking (FDML): A new laser for Megahertz optical coherence tomography (OCT) and molecular stimulated Raman imaging  
Prof. Dr. Robert Huber - Institute of Biomedical Optics, Universität zu Lübeck

6.15 p.m. Buffet & Award International Year of Light Video Contest

## Wednesday, November 25

9.00 a.m. Welcome

### Research Area IV: Optical Systems

9.15 a.m. A photonic microscope-in-a-needle takes high-resolution optical microscopy to deep, dark places in tissues  
Prof. David Sampson - School of Electrical, Electronic and Computer Engineering, University of Western Australia

10.15 a.m. LiDAR: A modern optical tool for distance and speed measurement of fluids and solids  
Prof. Dr. Wilhelm Stork - Institute for Information Processing Technologies, KIT

11.15 a.m. Poster session (Research Areas IV-V) & coffee break

12.30 p.m. Lunch break

### Research Area V: Solar Energy

1.30 p.m. Light absorption in perovskite and silicon solar cells  
Prof. Dr. Kylie Catchpole - College of Engineering and Computer Science, Australian National University

2.30 p.m. Efficiency enhancement of solar cells via spectral conversion  
Prof. Dr. Bryce Richards - Institute of Microstructure Technology, KIT

3.30 p.m. KSOP PhD Alumni Certificates Bestowal & Graduation Ceremony M.Sc. Program  
Prof. Dr. Michael Kaschke - Chairman Carl Zeiss AG

5.30 p.m. Farewell

6.00 p.m. Buffet