

[Registration]

Binding registration
Please register until **March 15th 2019** the latest

Fax: +49 (0) 511-277-1650
E-Mail: veranstaltung@photonicnet.de
Or with one click right here: [ONLINE-REGISTRATION](#)

- I will attend the workshop
 I will participate at the evening event

Title / First Name / Last Name

Company / Institution

Address

Postal Code / City

Phone No.

E-Mail

Member of competence network OT

Date / Signature

VENUE:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100, 38116 Braunschweig

PARTICIPATION FEE (plus VAT 19%):

260,00 € per person
190,00 € per person for members of competence network OT
15,00 € for students (certificate of matriculation required,
PhD students excluded)

DATA PROTECTION:

I agree that my name and my business address will be included in the list of participants and will be stored electronically in order to organise the workshop. Your data will be used only by us to inform you about similar offers. If you do not want us to use your data for advertising purposes, you can always object to us.

[21.03.2019] Silicon Photonics

Silicon photonics is the modulation, processing detection and generation of light on a CMOS compatible platform. Thus, silicon photonic chips can cost-effectively meet the ever increasingly data and bandwidth demands of a world-wide internet, growing with an annual rate of 20-30%. According to a 2018 report*, the silicon photonics market, today mainly driven by data center demands but with numerous other applications as well, is at the very beginning of massive deployment. Due to the CMOS compatibility, a co-integration of optical and electrical signal processing on one single platform enables ultra-high data rate transmitter modules for data center, or even on chip communications, Tera-samples per second digital-to-analog and analog-to-digital converters, arbitrary waveform generators and many more. On the device level, the strong confinement of the waves in nano-waveguides shows very interesting properties, which enable acoustic lasers, a strong interaction between light and sound waves, integrated frequency combs, optical signal processing, integrated sensors and many other fascinating applications. Leading experts in the field from all over the world will give captivating talks about the state of the art and latest developments in this exciting field.

*http://www.yole.fr/SiPhotonics_MarketStatus.aspx#.W0oREtlzY2w

[22.03.2019] Diamond Photonics

Diamond photonics in general is the physical science of photon generation, detection, and manipulation through emission, transmission, modulation, signal processing, switching, amplification, and sensing based on diamond or on nano-diamond. Diamond possesses remarkable physical and chemical properties, high mechanical hardness, large Young's module and high thermal conductivity. In addition to that, it enters more and more also the quantum optics' stage. Diamond has a wide transparency window from the ultraviolet to the infrared spectral range, has a high refractive index and it may contain a variety of defect centres. Therefore, diamond is a very interesting and promising material for many applications, from which the fields of quantum information, quantum optics and quantum radiometry belong to the most exciting ones.

In this workshop, we will focus on the fabrication, characterization and application of colour centres in (nano-) diamond for the above-mentioned applications. Top level presentations by outstanding experts on this field will be given on the state-of-the-art and recent developments.

**Please be advised that the number of participants is limited!
Therefore, an early registration is recommended.**

[How to get there]

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig

[Google Maps:](#)

**[Organisation]**

PhoticNet GmbH

Dr.-Ing. Thomas Fahlbusch
Tel.: 0511 / 277-1640
fahlbusch@photonicnet.de

[In cooperation with]

**Institut für Hochfrequenztechnik
Technische Universität
Braunschweig**

Prof. Dr. Thomas Schneider
Tel.: 0531 / 391-2003
thomas.schneider@ihf.tu-bs.de

**Physikalisch-Technische
Bundesanstalt (PTB)**

Prof. Dr. Stefan Kück
Tel.: 0531 / 592-4010
stefan.kueck@ptb.de

IN COOPERATION WITH:

**Silicon and Diamond
Photonics 2019**

[21. - 22. March 2019]



Braunschweig, 21. - 22. March 2019

Please visit
<http://www.silicon-diamond2019.de/>
for additional info

[Schedule 1st day]

[21.03.2019] Silicon Photonics

Welcome

Dr. Thomas Fahlbusch
PhotonicNet GmbH, Germany
Prof. Dr. Thomas Schneider
*Institute für Hochfrequenztechnik
Technische Universität Braunschweig, Germany*

Electronic-Photonic Integrated Circuits for Transceiver in a Chip

Dr. Stefan Meister
Sicoya GmbH, Germany

Electronic-Photonic Circuits for Communications and Metrology

Prof. Dr. Christoph Scheytt
*Heinz Nixdorf Institute
Paderborn University, Germany*

Coffee break

Hybrid Silicon-chalcogenide Photonics in the NIR

Prof. Dr. Jeremy Witzens
*Institute of Integrated Photonics
RWTH Aachen University, Germany*

Harnessing Brillouin Interactions in Silicon Photonics

Prof. Dr. Peter Rakich
*Department of Applied Physics
Yale University, USA*

Lunch break

10:00 Integrated Brillouin Scattering for RF Photonics

Prof. Dr. David Marpaung
*Faculty of Science and Technology
University of Twente, The Netherlands*

10:15 1x8 Silicon-photonic Wavelength-division Multiplexer with 17 GHz Channel Spacing

Prof. Dr. Avi Zadok
*Faculty of Engineering
Bar-Ilan University, Israel*

10:45 Coffee break

11:15 Non-volatile Integrated Photonic Devices Based on Si-GST Hybrid Waveguides

Prof. Dr. Linjie Zhou
*School of Electronic Information
and Electrical Engineering
Shanghai Jiao Tong University, China*

11:45 CMOS Compatible Photonic Devices for Classical and Non-classical Computing

Prof. Dr. Kambiz Jamshidi
*Institute of Communication Technology
Technische Universität Dresden, Germany*

12:15 Rigorous Characterisation of Silicon Photonic Devices

Prof. Dr. Azizur Rahman
*School of Mathematics, Computer Science & Engineering
Department of Electrical & Electronic Engineering
City, University of London*

12:45 End of presentations on the first day

Evening event

13:45 Hybrid Integration of Single Solid-State Quantum Emitters for Applications in Quantum Technology

Prof. Dr. Oliver Benson
*Department of Physics
Humboldt-University Berlin, Germany*

14:15

Novel Single-photon Emitters in Diamond for Quantum Technology

Dr. Paolo Traina
Istituto Nazionale di Ricerca Metrologica, Italy

14:45

Coffee break

15:15

Fabrication and Control of Color Centers in Diamond for Single-photon Generation and Quantum Enhanced Sensing

Dr. Jacopo Forneris
Istituto Nazionale di Fisica Nucleare, Italy

15:45 Single Photons from Color Centers in Diamond: Basics and Applications

Prof. Dr. Christoph Becher
*Quantum Optics Group
Saarland University, Germany*

16:15

Lunch break

16:45

19:00

[Schedule 2nd day]

[22.03.2019] Diamond Photonics

09:30 Single-photon Sources as New Quantum Standards: Recent Developments

Dr. Beatrice Rodiek, Prof. Dr. Stefan Kück
*Physikalisch-Technische Bundesanstalt (PTB),
Germany*

10:00 Heteroepitaxial Diamond Wafers: Recent Progress in material Synthesis and Future Potential in Photonics

Dr. Matthias Schreck
*Institute of Physics
Augsburg University, Germany*

10:30

Coffee break

11:00

SiV-family Defects in Diamond as a Novel Qubit Candidates

Dr. Petr Siyushev
*Institute of Quantum Optics
Ulm University, Germany*

11:30

Optical Nonlinearities at the Single Photon Level

Prof. Dr. Stephan Götzinger
*Friedrich-Alexander-University of Erlangen
Nürnberg and Max Planck Institute
for the Science of Light, Germany*

12:00

Suspended Nanocrystalline Diamond Waveguide Platform for Applications in Infrared Integrated Photonics

Dr. Maziar Nezhad
*School of Electronic Engineering,
Bangor University, UK*

Wrap up

13:00

13:30

14:00

14:30

15:00

15:30

16:00