

**[ Registration ]**

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

**Fax: +49 (0) 511-277-1650**  
**E-Mail: [veranstaltung@photonicnet.de](mailto: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, participation at the evening event  
excluded, limited offer)

**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](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](mailto: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](mailto:thomas.schneider@ihf.tu-bs.de)

**Physikalisch-Technische  
Bundesanstalt (PTB)**

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