

# **Press Release**

# Custom diode lasers and UV LEDs - FBH demonstrates systems for LiDAR & SERDS

At Laser World of Photonics, FBH will present its capabilities in diode lasers and UV LEDs. It introduces compact live demonstrators for LiDAR and Raman spectroscopy. Results and advances in UV LEDs will be exhibited by FBH together with the spin-off UVphotonics.

## Berlin, May 28, 2019

The Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (FBH) is showcasing its range of services at the Laser World of Photonics in Munich from June 24 - 27, 2019. At the joint Berlin-Brandenburg stand (booth B2.119), the institute will present current developments, from chips and modules with and without fiber coupling to live demonstrators. At the accompanying CLEO conference (23. - 27.06.) FBH will be represented with 16 scientific contributions – <u>read more</u>.

# LiDAR demonstrator: stand-alone, PC-controlled pulsed laser source

As part of the "Research Fab Microelectronics Germany", FBH is presenting a live demonstrator for pulsed laser sources, which allows flexible adjustment of pulse duration and intensity. Visitors can use a tablet to change the desired parameters and monitor the results in real time on screen. With its PLS flex, FBH offers laser sources that deliver pulses in the range from 200 ps to 20 ns. The systems can be equipped with diode lasers of various wavelengths (630 - 1180 nm) and power ranges. Laser diodes, which are wavelength stabilized at 905 nm, achieve output powers of up to 100 W at ambient temperatures of up to 85 °C. This makes them ideally suited for use in LiDAR systems. FBH offers the chips in a complete development environment with driver electronics and control software.

### SERDS turnkey system in use – for Raman spectroscopic measurements on site

The compact turnkey laser system for Raman measurements is equipped with a monolithic Y-dual-wavelength diode laser, which alternately emits light at two slightly different wavelengths. The system allows very fast measurements using Shifted Excitation Raman Difference Spectroscopy (SERDS). The spectral distance of both wavelengths can be adjusted via micro heaters above the DBR gratings, which define the wavelength. If the systems are complemented with a suitable power supply, spectrometer, data acquisition and software interface, they can be used for on-site measurements. In-house developed, portable systems have already been successfully used for measurements on food, soil, plants and human skin.

Press pictures are available here for download. All images are copyrighted.

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#### **Background information – the FBH**

The Ferdinand-Braun-Institut, Leibniz-Institut fuer Hoechstfrequenztechnik (FBH) researches electronic and optical components, modules and systems based on compound semiconductors. These devices are key enablers that address the needs of today's society in fields like communications, energy, health, and mobility. Specifically, FBH develops light sources from the visible to the ultra-violet spectral range: high-power diode lasers with excellent beam quality, UV light sources and hybrid laser systems. Applications range from medical technology, high-precision metrology, and sensors to optical communications in space. In the field of microwaves, FBH develops high-efficiency multi-functional power amplifiers, and millimeter wave frontends targeting energy-efficient mobile communications as well as car safety systems. The FBH has a strong international reputation and ensures rapid transfer of technology by working closely with partners in industry and research. The institute has a staff of 300 employees and a budget of 37.9 million euros. It is part of the Forschungsverbund Berlin e.V., a member of the Leibniz Association and part of »Research Fab Microelectronics Germany«. www.fbh-berlin.com