

### Research Results

## Plasma Measurement Guarantees Reproducible Coating Properties

At the 16th International Conference on Plasma Surface Engineering (PSE) in Garmisch-Partenkirchen, LASER COMPONENTS will present the results of the PluTO+ joint research project for the first time. Under the auspices of the Association of German Engineers (VDI), the Ruhr University of Bochum and the Leibniz Institute for Plasma Research and Technology (INP), together with the developers at the Olching-based company, spent four years researching new methods for improving plasma-based coating processes. The aim of the project, which is supported by federal funds, is to increase the yield of functional optics and to achieve reproducibly uniform coating thicknesses.

"Plasma-assisted processes and optical monitoring enable us to implement denser and more precise dielectric coating systems," explains Dr. Sina Malobabic, who supervised and coordinated the research project at LASER COMPONENTS. "However, even plasma states can change due to short-term fluctuations or long-term drifts. With complex coating systems, the coating process can take up to 18 hours. If irregularities occur, this can have serious consequences for the end product."

A probe developed by the Ruhr University of Bochum now enables in-situ measurements of plasma parameters for the first time. Under the direction of Dr. Jens Harhausen, the INP provided significant support for the installation of measurement and control technology in production facilities. The first test measurements in LASER COMPONENTS' coating systems led to positive results: The combination of plasma and layer monitoring allows new control concepts to be developed which can be used to adjust the coating properties more precisely. In the production process, not only the quality can be increased considerably but the resource efficiency as well.

"After we had defined the theoretical basics in the preceding project PluTO, it was now a matter of practical implementation in everyday industrial life," explains Prof. Dr. Ralf Peter Brinkmann from the department of theoretical electrical engineering at the Ruhr University of Bochum. "With LASER COMPONENTS, we had an industrial partner at our side who not only has the appropriate production facilities but also a young, committed team of developers with the necessary scientific background."

### More Information

[www.lasercomponents.com/de-en/company/innovation/development-department/](http://www.lasercomponents.com/de-en/company/innovation/development-department/)

### Trade Shows

**Photonex Europe**, October, 10 - 11, 2018, Ricoh Arena, Coventry, UK, **Booth D15**  
**Vision**, November 06 - 08, 2018, Messe Stuttgart, Germany, **Booth 1G31**  
**electronica**, November 13 - 16, 2018, Messe München, Germany, **Booth B3.524**

### The Company

LASER COMPONENTS specializes in the development, manufacture, and sale of components and services in the laser and optoelectronics industry. At LASER COMPONENTS, we have been serving customers since 1982 with sales branches in five different countries. We have been producing in house since 1986 with production facilities in Germany, Canada, and the United States. In-house production makes up approximately half of our sales revenue. A family-run business, we have more than 220 employees worldwide.