

PRESS RELEASE

The surface becomes programmable: SurFunction and Precitec bring functional metasurfaces into series production worldwide

SurFunction's ELIPSYS® platform creates an industrial technology for defining component properties through light and geometry alone – without chemistry. The strategic partnership combines this platform with Precitec's laser technology and global sales and service network, particularly in North America and Asia.

Saarbrücken/Gaggenau, Germany, October 20, 2026: Until now, components have acquired their surface functions through coating, electroplating or chemical treatment. **Functional metasurfaces** break with this principle: properties such as electrical contact, friction, adhesion or wetting arise solely from micro- and nanoscale structures within the material itself. Through the strategic partnership between **SurFunction GmbH** and the **Precitec Group**, one of the leading providers of laser technology and optical 3D metrology, this new technology category is now becoming available for series production worldwide. Precitec will also become a sales and service partner for the ELIPSYS® technology.

With ELIPSYS® (Extended Laser Interference Patterning System), SurFunction structures metals, plastics, glass and ceramics at industrial cycle times. The technology is based on Direct Laser Interference Patterning (DLIP), pioneered by Prof. Frank Mücklich and Prof. Andrés Lasagni.

Ready for series production and highly versatile

Applications range from electromobility and power electronics to battery and semiconductor manufacturing, medical technology, optics and tribology – for example improved electrical contacts, chemical-free pretreatment prior to bonding and coating, low-friction surfaces, and PFAS-free, antibacterial or optically functional structures.

How far the technology has advanced in series production is demonstrated by the ELIPSYS® E 960 C1 system: it structures strip material for electrical connectors at industrial speed, reduces contact resistance by up to 80 percent and enables up to 60 percent more contacts at the same insertion force.

Global market access

SurFunction contributes the industrial process, application development, IP and software, as well as many years of process know-how. Precitec brings more than 50 years of experience in industrial laser materials processing – from processing heads to integration into the systems of leading machine builders – together with a sales and service network in 23 countries, including its own subsidiaries in the USA, Japan, China, Korea and India.



With more than 30,000 installed systems, Precitec has been a qualified supplier to electromobility, the semiconductor and electronics industries, medical technology and aerospace for decades. For customers, this means that ELIPSYS® can be integrated into existing production lines worldwide and supported wherever they manufacture.

“With Precitec, we are taking the decisive step from a technologically leading platform to a globally available industrial solution,” says Dr. Dominik Britz, CEO of SurFunction. “Precitec’s sales and service network opens up new opportunities for us, especially in North America and Asia. Together, we want to establish functional metasurfaces as a standard tool in industrial manufacturing.”

“The surface is increasingly what determines a component’s performance. With ELIPSYS®, we are expanding our portfolio with a process that creates component functions directly in the material – for a wide range of applications,” says Dr. Thilo Wersborg, CEO of the Precitec Group.

“Our customers are looking for ways to improve the quality, performance and sustainability of their products. With our global sales and service network, we bring ELIPSYS® exactly where they produce,” adds Klaus Löffler, Managing Director Sales, Marketing and Product Management at Precitec.

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BACKGROUND

About functional metasurfaces

Surfaces determine whether components rub or glide, whether liquids adhere or bead off, and how electricity, heat and light are transmitted. Nature solves this through structure: the lotus leaf cleans itself, shark skin reduces drag, and butterflies create color without pigments.

Functional metasurfaces transfer this principle to industry: micro- and nanostructures give a material properties it does not naturally possess – through geometry alone. The prefix “meta” stands for these properties beyond the material itself. Fields of application include tribology, optics and photonics, medical technology, electronics, energy and mobility – a multi-billion market that is growing with the demands for efficiency, sustainability and miniaturization.

About ELIPSYS®

For a long time, the industrial use of functional metasurfaces was held back by a lack of scalability. ELIPSYS® (Extended Laser Interference Patterning System) solves this problem on the basis of Direct Laser Interference Patterning (DLIP): several coherent laser beams interfere to create a periodic pattern that writes micro- and nanostructures into the surface – mask-free, reproducibly and over large areas. The scientific foundations were developed over more than 25 years by Prof. Frank Mücklich and Prof. Andrés Lasagni at Saarland University and TU Dresden.

About SurFunction

With ELIPSYS®, Saarbrücken-based SurFunction GmbH has created the leading industrial platform for functional metasurfaces – featuring modular optics, integrated process control and quality assurance, and flexible interfaces for production lines. As an IP-driven platform and system provider, SurFunction addresses applications in optics, photonics, precision manufacturing, medical technology, electronics, energy and mobility. Its goal is to establish functional metasurfaces as a key industrial technology.

www.surfunction.com

About Precitec

The Precitec Group is an independent, family-owned company headquartered in Gaggenau (laser technology) and Neu-Isenburg (3D metrology), Germany. Precitec develops solutions for laser cutting, laser welding with process monitoring, additive manufacturing and optical 3D metrology. More than 750 employees from 28 nations serve customers in industries including electromobility, mechanical engineering, semiconductors, consumer electronics, medical technology and aerospace; the company has subsidiaries and representative offices in 23 countries.

www.precitec.com