

PRESS RELEASE

Surfunction presents laser-based surface solutions at the Surface Technology trade fair

From 21-23 June 2022, Surfunction will present its technology platform for high-tech surfaces for the first time in Stuttgart at the Surface Technology trade fair. In Hall 1, Stand A62, visitors can learn more about the promising solutions that surface functionalization using laser inference processes offers for numerous products.

Saarbrücken, June 14, 2022. Surfunction GmbH, a leading system provider for contactless surface functionalization using laser technology, will present its product developments at the only cross-industry and cross-material platform for surface technologies. The application scenarios are diverse: the so-called DLIP technology (Direct Laser Inference Patterning) enables, for example, product optimization for electrical systems, tailoring of friction, wear, absorption and wetting and can create special design effects including protection against counterfeiting. With the claim "Nature knows best", the company has transferred the possibilities of complex laser interference processes to industrial application for the first time. Surfunction GmbH is a spin-off from the Steinbeis research center Material Engineering Center Saarland (MECS).

Improvement potential for numerous industrial products

Surfunction expands the DLIP process with various complementary technologies and offers new, even more powerful solutions with the xDLIP platform (Extended DLIP). As a result, cross-scale surface structures are possible in record times. The patented special processes create measurable improvements for products in several industrial sectors such as automotive, medical technology and mechanical engineering. The technology allows for a high degree of material freedom (polymer, metal, ceramic, glass), the option of implementing almost any periodic structure (e.g., line, cross and dot pattern), a high degree of automation and



reproducibility (using xDLIP machines) and multi-scale precision (from nm to μm). The laser-based surface functionalization also allows resource-saving production.

Comprehensive range of solutions

Surfunction accompanies its customers holistically with a focus on economic efficiency - from the feasibility study to series implementation. The production of optical and functional surfaces takes place both at the customer's site and in own technology centers. The application spectrum ranges from the control of mating forces or resistance in electrical contacts to super hydrophilic or super-hydrophobic surfaces and hygienic properties such as germ-killing and reduction of bacterial adhesion. Tribological adjustments of the coefficient of friction and wear are also possible, as well as individualized optical effects in the safety area.

Recently, the company agreed on a global strategic partnership with the mechanical engineering specialist Noxon Automation GmbH & Co. KG. The cooperation covers the marketing and professional integration of xDLIP technologies into industrial production processes in the field of electrical contacts.

Presentation notice:

On 23.06.2002 from 10:00-10:20 CEO Dr. Dominik Britz will present on the subject of "Novel surface functionalities using laser interference" as part of the specialist forum at Surface Technology.



Surfunction on Twitter: <http://twitter.com/Surfunction>

Surfunction on LinkedIn: <https://www.linkedin.com/company/Surfunction-gmbh/>

Surfunction on Instagram: <https://www.instagram.com/surfunctiongmbh/>

If you have any questions, please contact:

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SurFunction GmbH (www.surfunction.com):

SurFunction is a leading system provider for contactless surface modification. The company, based in Saarbrücken (Saarland), uses various laser-based processes based on award-winning and patented interference technologies (xDLIP). This makes it possible to create cost-effective, cross-scale surface structures in record time, which are modeled from living nature. Surfaces can thus be equipped with new properties (e.g. non-stick, antibacterial, energy-efficient, low-friction, highly electrically conductive or tamper-proof). True to the claim "Nature knows best", SurFunction opens up new innovation potential and provides companies from numerous industries with significant competitive advantages. SurFunction provides customers with complete systems as well as highly functional surfaces. SurFunction wants to improve the products or processes of its customers and conserve resources. SurFunction cooperates closely with leading research institutions worldwide, has first-class references as well as comprehensive competency - based on years of experience and development. SurFunction is a spin-off from the Steinbeis Research Center Material Engineering Center Saarland (MECS).

**Background: xDLIP**

Surface structures on almost any component have a significant impact on their performance. The research that has been carried out for decades has proven the almost infinite variety of possibilities. If particularly successful surfaces of nature are analyzed in this context, it can be determined that almost all effective structures (e.g. creation of non-stick properties of the lotus plant or color effects on butterfly wings) depend on complex geometries in tiny orders of magnitude. So far there has been no technology that enables industrial use economically and at relevant process speeds.

The researchers and co-founders of SurFunction, Prof. Dr.-Ing. Frank Mücklich and Prof. Dr.-Ing. Andrés Lasagni, have been working on a solution to this problem for more than twenty years and are the inventors of "Direct Laser Interference Patterning". Due to its simple functional principle, this technology holds the key to creating artificial surfaces inspired by nature. For example, by splitting and superimposing laser beams, structures of the relevant order of magnitude can be generated through "interference". The phenomenon is symbolically comparable to the interaction of colliding water waves. If a crest of the first wave meets a crest of the overlapping second wave, the resulting wave reinforces the other. By using this principle professionally and supplementing it with accompanying technologies, successful industrial use can now be achieved. This new cross-sectional technology is summarized under the term xDLIP (Extended Direct Laser Interference Patterning).