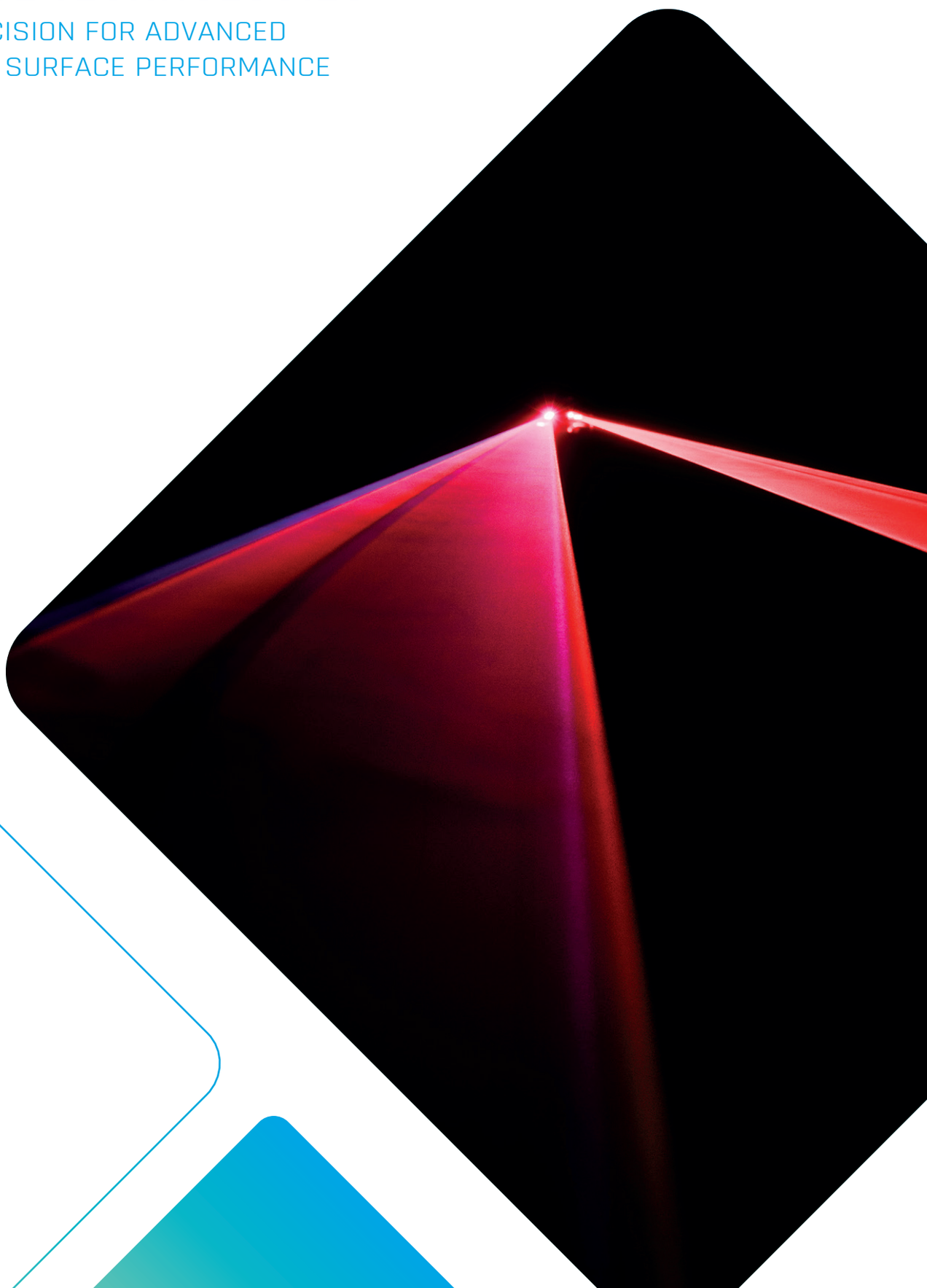
HEF GROUPE | LISTEK®

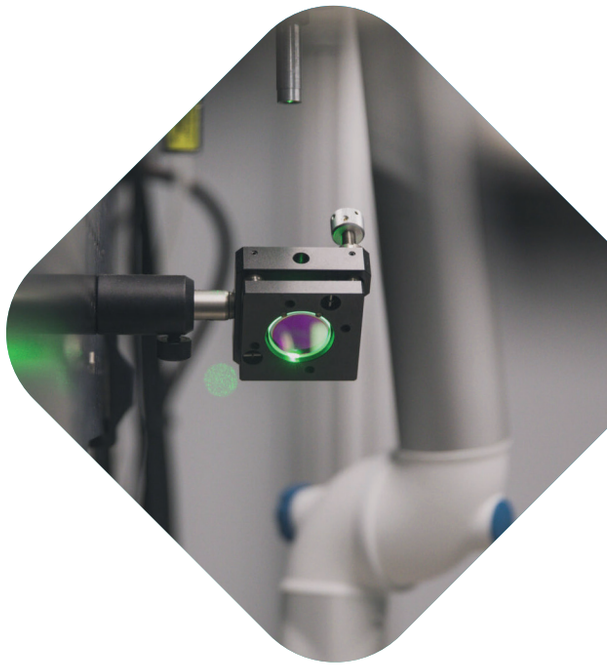
LASER INDUCED SURFACE TECHNOLOGIES

LASER PRECISION FOR ADVANCED
INDUSTRIAL SURFACE PERFORMANCE



hef.group

LISTEK TRANSFORMS SURFACES THROUGH LASER PRECISION FROM HIGH-ACCURACY MICRO-MACHINING TO FUNCTIONAL SURFACE ENGINEERING



LISTEK uses ultrafast lasers to precisely machine, texture and functionalize surfaces without damaging materials. The clean, contactless process ensures controlled, reproducible results on 2D and complex 3D shapes. LISTEK offers two solution families: **LISTEK BEAM** and **LISTEK FSE**.

CUT
High-precision cutting

DRILL
Micro-drilling solutions

ETCH
Surface structuring

GLASS
High-precision cutting

FSE
Fonctional Surface Engineering

CONTROLLED
LISTEK enhances your precision

- Micron-scale precision
- Controlled thermal impact, no burrs or degradation
- Suitable for surfaces from micro m^2 to m^2

FAST
LISTEK improves your productivity

- Minimal or no pre/post-processing speed
- Surface treat speed up to 1m/s
- Can be used in combination with HEF CERTESS® for an integrated production.

FLEXIBLE
LISTEK adapts to your needs

- Wide material compatibility (rigid to fragile)
- High reproducibility
- Compatible with 2D and complex 3D geometries.

CLEAN
LISTEK keeps your process pristine

- Low carbon footprint
- No tool wear due to contactless process
- Additive-free process.

PRODUCT PORTFOLIO

① LISTEK BEAM

Delivers micron-scale surface micro-machining with a clean, contactless and high-precision laser process.

LISTEK BEAM covers laser-based operations designed to locally remove, cut, drill or structure material with high dimensional accuracy and minimal thermal impact.

±2 µm precision and 100 nm pitch
enable complex patterns

Draft angles from 8 to 10°
allow advanced micro-structures

Cutting speed up to 1m/s*
with the HEF platform ensures top productivity
***depending on thickness**

Clean & green process
No contact or chemicals makes it a clean, low-carbon solution

	SUBSTRATEM	AX THICKNESS	SUBSTRATE SIZE	PITCH	DRAFT ANGLE	DIAMETER OVER DEPT RATIO	X-Y POSITION PRECISION
CUT	Metal, textile, ceramic, plastic, organic	1 mm	600 x 800 mm²	30 µm	Typ. 10° / Min 8°	-	+/- 2 µm
DRILL						1:10	
ETCH						1:1	
GLASS	Sapphire, quartz, Chem. reinforced glass	8 mm	600 x 600 mm²	N/A	0°	1:5	

② LISTEK FSE (Fonctional Surface Engineering)

Turns substrates into active surfaces by precisely modifying their physical & chemical properties.

LISTEK FSE is HEF's tailored laser-based Functional Surface Engineering solution. It modifies surface properties with high precision to generate specific functional behaviors without adding material or coating.
Contact us to develop your own tailor-made solution!

EXEMPLE

Surface absorbing up to 97% of light

Hydrophobic to hydrophilic transition

Localized micro/nano roughness

Functional textures inspired by bioengineering



« Biomimetics inspire this technology: we can replicate shark skin to improve hydrodynamics, lotus leaves to create hydrophobic surfaces, or gecko feet to enhance adhesion. »

LISTEK LASER CAPABILITIES

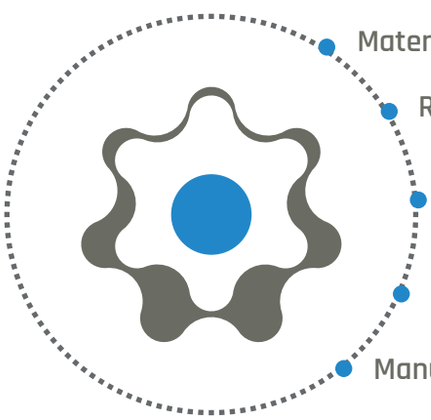
LISTEK is our family of industrial-scale laser surface engineering services for industrial production needs. As ultra-fast laser technologies continue to evolve rapidly, and unlock new applications, LISTEK ensures that you always benefit from the latest advancements.

With our in-house TSD-FS600 L machines already in production, and HEF-backed expertise, we deliver reliable, scalable, state-of-the-art surface micro-machining and functional surface engineering.



WHY CHOOSE HEF?
FROM SCIENCE TO INDUSTRY

HEF supports customers across the full value chain, from materials science and process development to industrial surface treatment and component manufacturing.



Materials Science and technologies 13 platforms

R&D (test and simulation) : Material design / process engineering

Engineering Design and manufacturing of Equipment, of consumables : chemical / metallurgy / sourcing / recycling

Surface treatments using our materials and processes

Manufacturing of friction components integrating our technologies

SERVING DEMANDING INDUSTRIAL MARKETS


Defense


Electronics


Industry


Hydrogen


Medical


Mobility

LISTEK CAPABILITIES ARE NEARLY LIMITLESS, BRING US YOUR DREAM COMPONENT.

THE ONLY LIMIT WILL BE YOUR IMAGINATION.

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