



Fusion Bionic GmbH

Nature-inspired laser surface functionalization

Introduction



Our motivation

Many current product surfaces face challenges to meet high-end applications.

Laser surface functionalization is a viable alternative or add-on to coatings.

Only light to create new functions

Large-scale and high-speed laser surface texturing as a solution with several benefits:

- Non-contact
- Precise energy deposition
- No additional materials required
- No chemicals / No clean room

Bio-inspired microstructures

Fusion Bionic GmbH facilitates laser-generated micro- and nanostructures mimicking natural surfaces – and with these also their functional behavior.

Our core technology

Direct Laser Interference Patterning (DLIP)



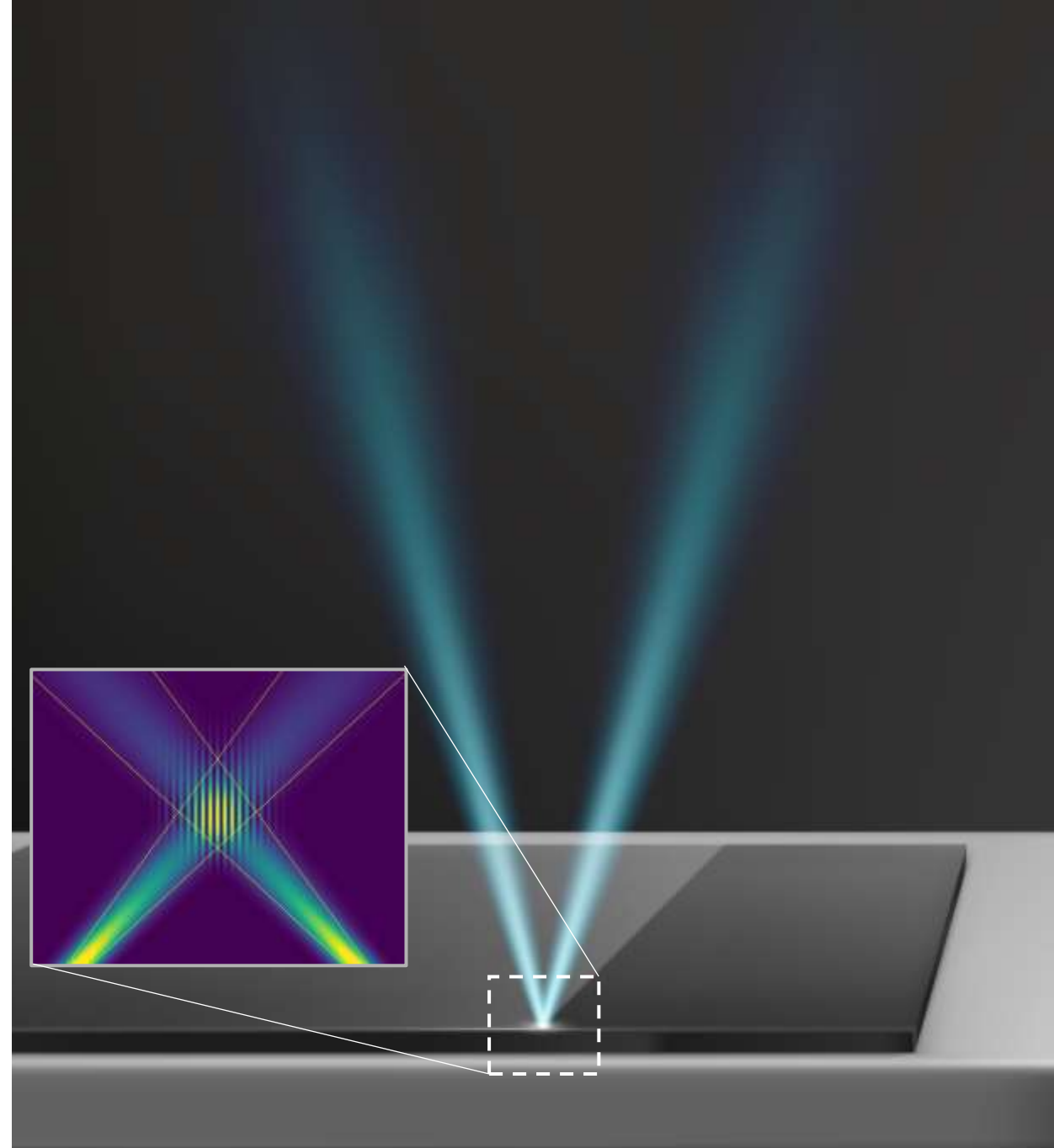
Our core technology is designed into compact and versatile laser modules



Applicable to almost any technical surface, almost of any shape



Unprecedented high processing speed (up to 0.9 m²/min demonstrated)



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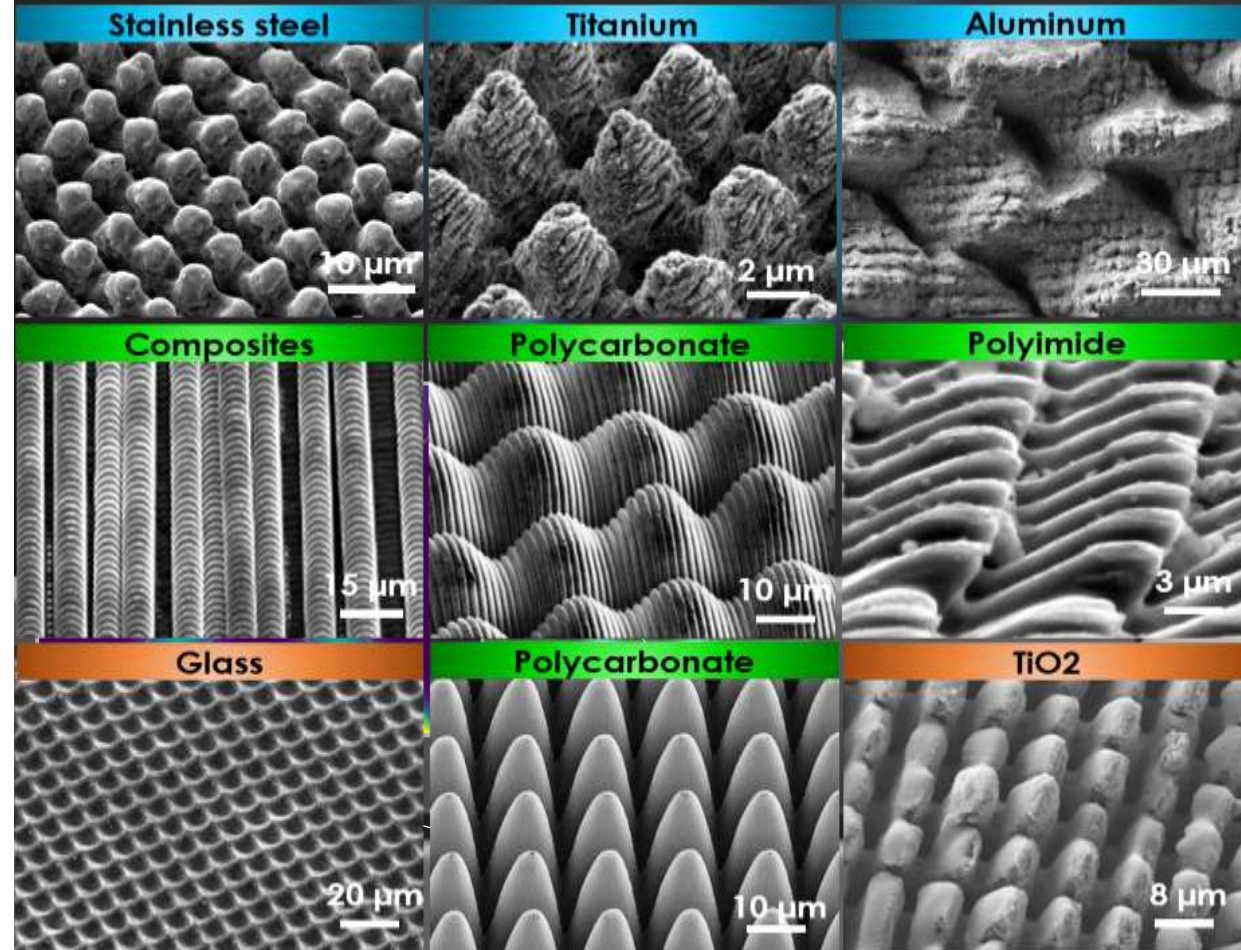
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Application fields



- Anti-icing surfaces
- Efficient De-icing
- Anti-reflection
- Anti-sticking

Aerospace



- Connectivity
- Anti-friction
- Lubrication
- Anti-wear

Automotive



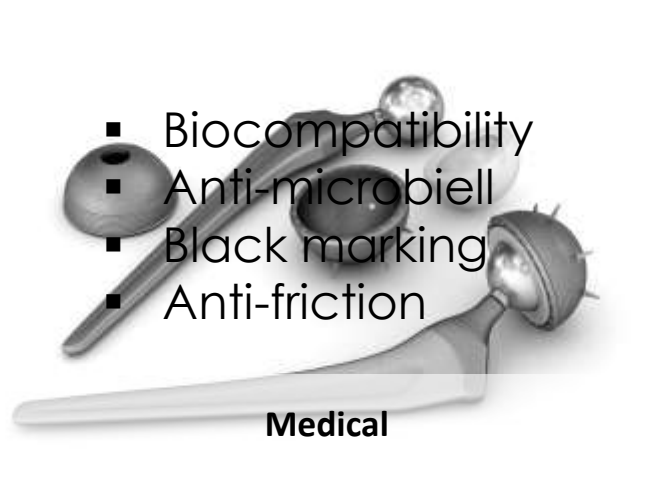
- Product protection
- Anti-microbiell
- Anti-reflection
- Decoration

Consumer



- Anti-icing surfaces
- Efficient De-icing
- Self-cleaning
- Efficiency

Energy



- Biocompatibility
- Anti-microbiell
- Black marking
- Anti-friction

Medical

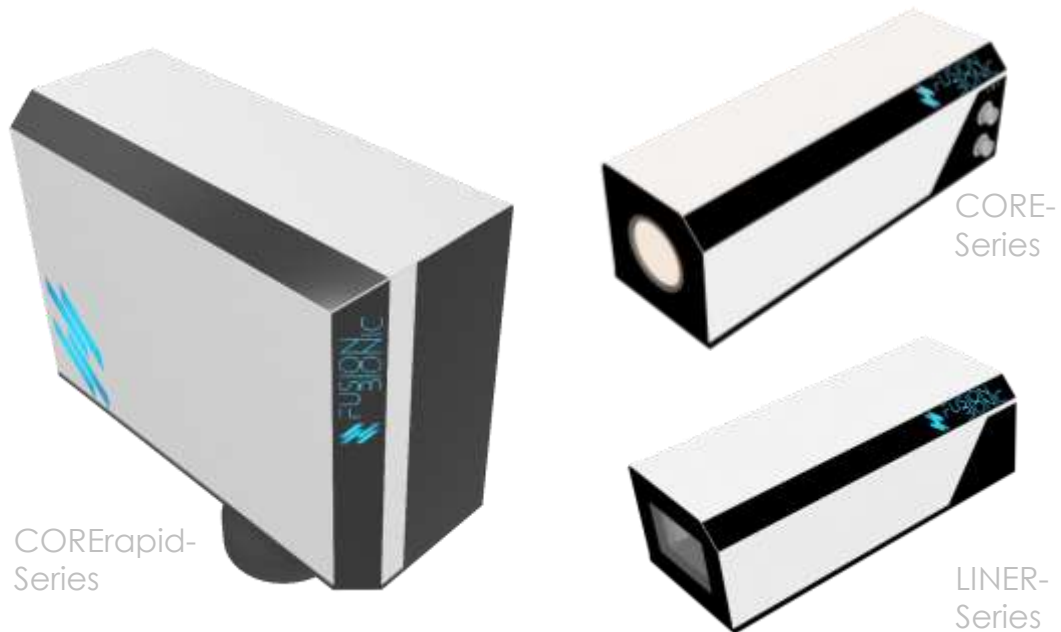


- Product protection
- Self-cleaning
- Anti-friction
- Efficiency

Manufacturing

Our solutions

- **World novelty** of its kind in high-speed functionalization
- Off-the-shelf solutions based on DLIP technology
- Different wavelengths, various feature sizes
- Custom-made solutions on request



Application examples



What we can do for you

- **Solution provider** for DLIP hardware
- **Consulting** surface functionalization
- **Process development** for surface functions
- **Engineering service** for process machinery
- **Integration, Service & Support**
- **Training**

What you can do for us

- **New applications:**
We are looking forward to be involved into your surface engineering challenge!
- **New partnerships/collaborations:**
We are interested in participating in EU-funded R&D projects

Questions?

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Special Issue

“Laser Applications in Micromachining and
Surface Functionalization of Materials”



materials

