

# PROMETHEUS

RAPID ULTRA-SHORT PULSE LASER SURFACE TEXTURING TECHNOLOGY



PROJECT INTRODUCTION  
PROMETHEUS Public Day

23<sup>rd</sup> November 2021

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# Project Overview



Project Title	Pulsed Rapid ultra-short laser surface texturing for Manufacture of Flexible and Customised Products
Starting Date	01/01/2019
Duration in Months	42
Call identifier	H2020-ICT-2018-2
Topic	ICT-04-2018: Photonics based manufacturing, access to photonics, datacom photonics and connected lighting
EU Contribution	6 356 235,00 €



Develop high power short pulse laser and the associated optics to enable the precise periodic texturing of surfaces to impart a range of surface functionalities at unprecedented processing speeds.

and ...

- Manufacture **textured functional surfaces** utilising fewer raw materials, less energy and less waste
- Improve accuracy, power and control over existing technologies
- Achieve **fast materials processing**
- Increase achievable **precision**
- Minimize **heat impact** on sensitive materials
- Increase **productivity**
- Increase achievable **flexibility** and product **customization**
- Significantly reduce processing **costs**



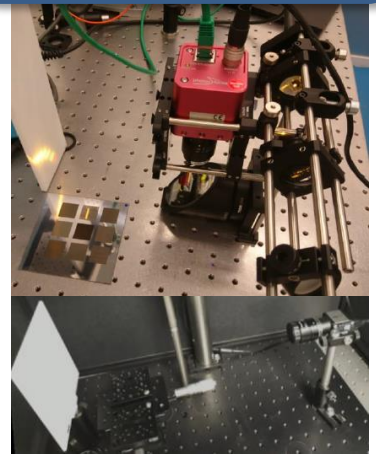
Integration

Short Pulse Laser

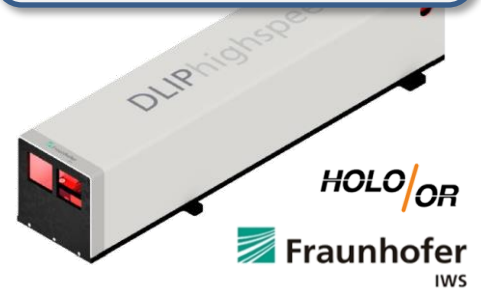


Fibre Delivery  
PHOTONICS  
BRETAGNE

Process monitoring  
and quality control



Direct Laser Interference  
Patterning (DLIP)



# Let's create functional surfaces, using ...

Non-stick, easy to clean chrome plated polypropylene automotive bumper trim with self-cleaning properties

Reduced friction for a 316-steel engine cylinder/piston

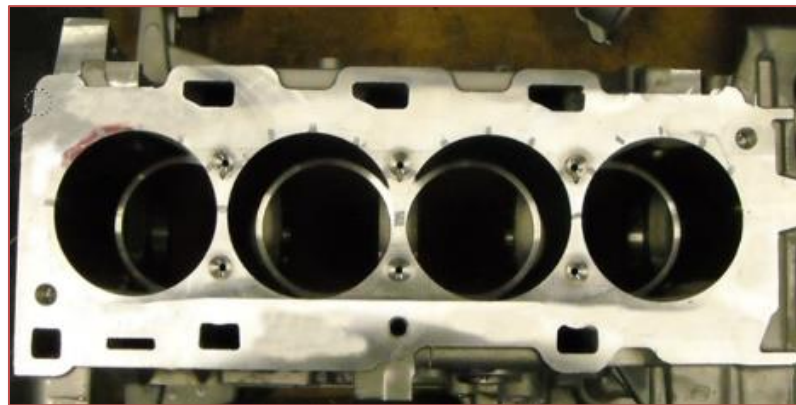
## Laser Surface texturing (LST)

Hydrophobic performance for dishwashers to reduce energy required for drying and further applications to condensers

Antibacterial functionality



# Validation – Industrial Case Studies





# Questions?

# Thank you!

Rita Bola  
[rgbola@ewf.be](mailto:rgbola@ewf.be)

[www.prometheus-laser.eu](http://www.prometheus-laser.eu)