



PROMETHEUS

RAPID ULTRA-SHORT PULSE LASER SURFACE TEXTURING TECHNOLOGY

THE NEXT GENERATION IN HIGH POWER ULTRA-SHORT PULSE LASER SURFACE PROCESSING

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

OBJECTIVES

- Manufacture textured functional surfaces utilising fewer raw materials
- Improve accuracy, power, and control over existing technologies
- Achieve fast materials processing with processing speeds 2-5 m²/min.
- Increase achievable precision
- Minimize heat impact on sensitive materials
- Increase productivity
- Increase achievable flexibility and product customization
- Significantly reduce processing costs

BENEFITS OF THE PROJECT

- More than 1000 jobs will be created
- An increase of the investment in innovation
- Reduction of harmful chemical usage
- High-throughput efficient material removal at up to 5 m²/min.



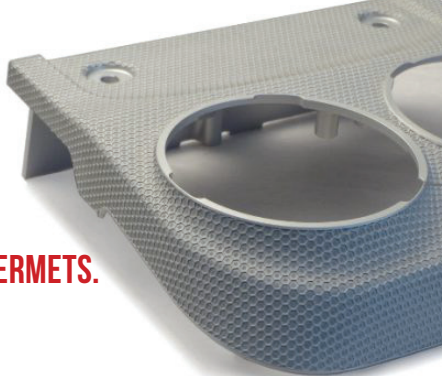
PHOTONICS²¹

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825503 – PROMETHEUS and from the 'Photonics Public Private Partnership' www.photonics21.org

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**TECHNOLOGY THAT CAN BE USED
ON A RANGE OF DIVERSE MATERIALS:
METALS/POLYMERS/CERAMICS AND CERMETS.
EXPECTED RESULTS OF END USER CASE STUDIES**



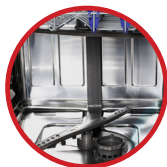
FMCG PACKAGING

- Improve product evacuation from packaging to avoid overfilling
- Improved customer satisfaction
- Improved sustainability as customers use more product from their purchases



TUMBLER DRYER

- 6.16 GWh of electrical power saving per year
- The offset of 2538 tonnes of CO₂ per year



DISHWASHER

- 26.7 GWh of electrical power saving per year
- Offset of 11000 tonnes CO₂ per year



AUTOMOTIVE CYLINDER PISTON LINER

- 1.1% fuel economy due to reduced friction
- Potential to deliver savings of 49,611 tonnes of CO₂ per year

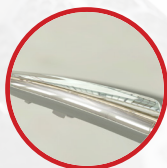


AUTOMOTIVE HIGH STRENGTH ALUMINIUM PRESSING

- 257 million litres of fuel saving per year
- The offset of 664 million tonnes of CO₂ per year

AESTHETIC CHROME COMPONENTS FOR AUTOMOTION

- Obtain super-hydrophobic textured surfaces
- Improve the easy-clean capability



Partners:



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www.prometheus-laser.eu