



Engineered Functional Surfaces by Laser Micro-processing

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Abstract:

Laser microprocessing has been considered as promising technique to enhance surface performance of materials or components in various applications including aerospace manufacturing and biomedical devices. This talk will present recent work of laser surface techniques including cleaning, polishing, and texturing on various substrates in our group. How the surfaces could be manipulated at various scales to obtain specific properties will also be elaborated on.

Biography:

Guan Yingchun CEng (TWI) is a Full Professor of material processing who is director of multiscale laser manufacturing center at Beihang University. She has made several contributions in areas of laser material processing over the last dozen years, and her work has affected precision engineering and surface technology.

Recent Publications:

- Laser surface modification of Mg-Gd-Ca alloy for corrosion resistance and biocompatibility enhancement YG Chengpeng Ma, Ge Peng, Lu Nie, Haifeng Liu Applied Surface Science
- Femtosecond laser-induced ripple structures on magnesium YC Guan, W Zhou, ZL Li, HY Zheng, GC Lim, MH Hong Applied Physics A 115 (1), 13-18



- One-step fabrication of robust superhydrophobic steel surfaces with mechanical durability, thermal stability, and anti-icing function H Wang, M He, H Liu, Y Guan ACS applied materials & interfaces 11 (28), 25586-25594
- Comparison of the effect of typical patterns on friction and wear properties of chromium alloy prepared by laser surface texturing L Lu, Z Zhang, Y Guan, H Zheng Optics & Laser Technology 106, 272-279
- Laser cleaning of commercial Al alloy surface for tungsten inert gas welding W Qiang, G Yingchun, C Baoqiang, Q Bojin Journal of Laser Applications 28 (2), 022507

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