

1. Record Nr.	UNINA9910557760803321
Autore	Comesana Rafael
Titolo	Surface Treatment by Laser-Assisted Techniques
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2020
Descrizione fisica	1 electronic resource (178 p.)
Soggetti	History of engineering & technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>The book "Surface Treatment by Laser-Assisted Techniques" presents state-of-the-art research applications of lasers for surface modification. Applications in a broad spectrum of fields are presented: the aircraft and automotive sector, the manufacturing industry, sensor development, electronics, biomedical engineering, or the energy sector. Several radiation sources are included, from pulsed lasers in the visible and near-infrared regions to continuous-wave mid-infrared laser sources. The different chapters of the book "Surface Treatment by Laser-Assisted Techniques" cover laser texturing at nanoscale and microscale for modification of hydrophobicity, hydrophilicity, and ice nucleation; the production of palladium, platinum and silver nanoparticles for sensor applications; the texturization of composite bioceramics for improved fixation in bone prosthesis; the surface texturization of natural ceramic materials by scanned laser radiation; the laser ablation of interfaces to enhance adhesion in dissimilar joints; the analysis of material thermoelastic response; and the production of highly polished topographies in pulsed laser surface modification. Moreover, the production of high-entropy alloy/diamond composite coatings, the modellization of the gas-powder injection, and the generation of thermal barrier coatings by laser cladding are reported in the last chapters of this book.</p>