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| Titolo | Application of Lasers in Manufacturing [[electronic resource] ] : Select Papers from AIMTDR 2016 / / edited by Uday Shanker Dixit, Shrikrishna N. Joshi, J. Paulo Davim |
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| Descrizione fisica | 1 online resource (XX, 253 p. 168 illus., 108 illus. in color.) |
| Collana | Lecture Notes on Multidisciplinary Industrial Engineering, , 2522-5022 |
| Disciplina | 670 |
| Soggetti | Manufactures<br>Chemistry, inorganic<br>Manufacturing, Machines, Tools, Processes<br>Optics, Lasers, Photonics, Optical Devices<br>Tribology, Corrosion and Coatings |
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| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | Straightening of Bent Metal Sheets Using Laser Line Heating -- Laser Forming of Closed Cell Steel Foam -- Laser Dressing of Grinding Wheels -- Laser Texturing of Surfaces -- Laser Micro-Scribing on Thin Films -- CO2 Laser Micro-Channeling of PMMA -- Laser Ablation of Silicon -- Laser Processing of Titanium Aluminide Alloys -- Laser Surface Cladding of Bio Coatings on Titanium Alloy -- 3 D Printing and Post Processing Using Lasers -- Laser Beam Welding of Titanium Alloy -- Issues In Numerical Simulation of Laser Bending Process -- Numerical Simulation of Laser Melting -- Modeling of Laser Ablation Based Scribing of Polyamide Thin Films. . |
| Sommario/riassunto | This book mainly addresses the applications of lasers in the manufacture of various industrial components. The technologies presented here have scopes of application ranging from the macro to meso and micro level of components and features. This book includes chapters on the basic and advanced applications of lasers in the manufacturing domain. They present theoretical and practical aspects of laser technology for various applications such as laser-based machining, micro-scribing, texturing, machining of micro-sized |

channels; laser welding; laser-based correction of sheet metal, i.e. straightening; laser forming; and laser technology for 3-D printing. Lasers have various applications such as the production of powerful lights for illumination or decoration; measurement of velocity (transportation) and length; interferometry; printing; recording; communication; bio-medical instrumentation and pollution detection. A significant body of literature is available on the physics of lasers and types of lasers. However it has been noted there are a few books published on the “applications of lasers in manufacturing domain,” a gap that this book remedies. Gathering contributions by leading engineers and academicians in this area, it offers a valuable source of information for young scientists and research students. .