



Laser - Surface Interactions

By Rashid A. Ganeev

Springer Netherlands Aug 2016, 2016. Taschenbuch. Condition: Neu. Neuware - This book is about the interaction of laser radiation with various surfaces at variable parameters of radiation. As a basic principle of classification we chose the energetic or intensity level of interaction of laser radiation with the surfaces. These two characteristics of laser radiation are the most important parameters defining entire spectrum of the processes occurring on the surfaces during interaction with electromagnetic waves. This is a first book containing a whole spectrum of the laser-surface interactions distinguished by the ranges of used laser intensity. It combines the surface response starting from extremely weak laser intensities ($\sim 1 \text{ W cm}^{-2}$) up to the relativistic intensities ($\sim 10^{20} \text{ W cm}^{-2}$ and higher). The book provides the basic information about lasers and acquaints the reader with both common applications of laser-surface interactions (laser-related printers, scanners, barcode readers, discs, material processing, military, holography, medicine, etc) and unusual uses of the processes on the surfaces under the action of lasers (art conservation, rangefinders and velocimeters, space and earth explorations, surface engineering and ablation, and others). The scientific applications of laser-surfaces interactions (surface optical nonlinearities, surface enhanced Raman spectroscopy, surface nanostructuring, nanoripples and clusters formation, X-ray lasers...

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