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Descrizione fisica	1 online resource (XV, 472 p. 288 illus.)
Collana	Topics in Applied Physics, , 0303-4216 ; ; 77
Disciplina	620.1/127
Soggetti	Lasers Photonics Engineering Automatic control Robotics Mechatronics Mechanics Mechanics, Applied Optics, Lasers, Photonics, Optical Devices Engineering, general Control, Robotics, Mechatronics Theoretical and Applied Mechanics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Optics for Engineers -- to Engineering Mechanics -- Fringe Analysis -- Principles of Holographic Interferometry and Speckle Metrology -- Moiré Methods for Engineering and Science — Moiré Interferometry and Shadow Moiré -- Digital Photoelasticity -- Optical Fiber Strain Sensing in Engineering Mechanics -- Long-Gage Fiber-Optic Sensors for Structural Monitoring -- Techniques for Non-Birefringent Objects: Coherent Shearing Interferometry and Caustics -- Advances in Two-Dimensional and Three-Dimensional Computer Vision -- Laser Doppler and Pulsed Laser Velocimetry in Fluid Mechanics -- Surface Characterization and Roughness Measurement in Engineering.
Sommario/riassunto	Photomechanics describes the use of photonics techniques for the

nondestructive measurement of variations in certain important physical quantities such as displacements, strains, densities, etc. in experimental solid mechanics and flow. Offering authoritative reviews by internationally recognized experts, the book provides a wealth of information on the essential principles and methods today available in this realm. These include holographic and moiré interferometry, speckle metrology, two- and three-dimensional computer-vision methods as well as laser-Doppler and pulsed-laser velocimetry. In a concise and simple way the book provides a substantial background for researchers and practicing engineers.
