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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 The Effect of the Bedding Length of Lintel in Masonry Walls on their Load Bearing Capacity -- 2 The Effect of Vertical Load on Seismic Response of Masonry Walls -- 3 Numerical Study of Flange-Web Junction of Prestressed Concrete Bridge with Corrugated Steel Webs -- 4 The Use of Ultrasonic Waves and Analytical Modeling to Estimate Elasticity Modulus of Rubber Concrete Specimen -- 5 Numerical Study in Biomodels of Maxillofacial Prosthesis (Cancer and Osteonecrosis Cases) -- 6 The Effect of Dynamic Loading from Routine Activities on Mechanical Behavior of the Total Hip Arthoplasty -- 7 BIOMECHANICAL ANALYSIS OF CARDIOLOGICAL GUIDEWIRE GEOMETRY FORMING -- 8 Scanning Method of Temperature Distribution of Human Body by Device Registering Encircling Images -- 9 Strain Measurements Exhibited by a Steel Prosthesis Protected with Au Nanoparticles -- 10 Design and Manufacture of a Prototype of a Testing Rig for the Evaluation of the

Biomechanical Behavior of Vertebrae -- 11 Biomechanical Assembled Prosthesis of a Temporo mandibular Joint Disorder Using Biocompatible Materials -- 12 Design Model of Damaged Steel Pipes for Oil and Gas Industry Using Composite Materials -- 13 Damage Detection in Materials Based on Computer Vision Wavelet Algorithm -- 14 The Fretting Fatigue Behavior of Bolted Assemblies -- 15 FPGA-Realization of Inverse Kinematics Control IP for Articulated and SCARA Robot -- 16 Development of Mathematical Models for Dissimilar Welding Pool Geometries -- 17 Efficient Multi-objective optimization for gas turbine discs -- 18 Composite Suspension Arm Optimization for the City Vehicle XAM 2.0 -- 19 Developing and Optimization Models for Multi-Mechanical Properties of Dissimilar Laser Welding Joints -- 20 The Effect of Strain Hardening in Stainless Steels Submitted to Nitriding Treatment -- 21: Mathematical Modeling of Afterglow Decay Curves -- 22: Comparative Study for Removal of the Methyl Red by Two Illites Clays -- 23 Synthesis and Characterization of Nano Ti-50%Al by Mechanical Alloying -- 24 Equilibrium, Langmuir Isotherms and Thermodynamic Studies for Adsorption of Cu (II) on Natural Clay -- 25 Residual Stress Mapping in Alumina by Cr3+ Fluorescence Spectroscopy -- 26 Superficial Parameters Determination of the Ti-6Al-4V Alloy Submitted to PIII Treatment in Different Times of Implantation -- 27 Investigation of Carbon Nanotube Defects on its Strength Using Nonlinear Finite Element Modeling -- 28 Multimodal Pushover Target Acceleration Method Versus Dynamic Response of R/C Frames -- 29 Hardening and Roughness Reduction of Carbon Steel by Laser Polishing -- 30 Effect of Austenization Temperatures and Times on Hardness, Microstructure and Corrosion Rate of High Carbon Steel -- 31 Statistical Analysis of Automatic Scanning of a Car Roof.

Sommario/riassunto

The idea of this monograph is to present the latest results related to design and computation of engineering materials and structures. The contributions cover the classical fields of mechanical, civil and materials engineering up to biomechanics and advanced materials processing and optimization. The materials and structures covered can be categorized into modern steels and titanium alloys, composite materials, biological and natural materials, material hybrids and modern joining technologies. Analytical modelling, numerical simulation, the application of state-of-the-art design tools and sophisticated experimental techniques are applied to characterize the performance of materials and to design and optimize structures in different fields of engineering applications.