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Titolo	Mechatronics: Ideas, Challenges, Solutions and Applications / / edited by Jan Awrejcewicz, Krzysztof J. Kaliski, Roman Szewczyk, Magorzata Kaliczyska
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Descrizione fisica	1 online resource (285 p.)
Collana	Advances in Intelligent Systems and Computing, , 2194-5357 ; ; 414
Disciplina	621
Soggetti	Mechatronics Robotics Automation Physical measurements Measurement Robotics and Automation Measurement Science and Instrumentation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Multi-criteria Robot Selection Problem for an Automated Single-sided Lapping System -- Mechatronic Design Towards Investigation of the Temporo-Mandibular Joint Behaviour -- Requirements for Tire Models of the Lightweight Wheeled Mobile Robots -- Simulations of Accelerations and Velocities of the Robot’s Arm -- The Numerical Analysis of Burnishing Process of the Steel Tubes Hollow -- Piecewise Control Method of Oxygen Flow in PEM Fuel Cell -- Testing the Piezoelectric Energy Harvester’s Deflection on the Amount of Generated Energy -- Analysis of Crash Computation on a Basis of the Principle of Linear Momentum and Kinetic Energy -- Modeling and Simulation of the Solar Collector Using Different Approaches -- Uncertainty Analysis of Innovative Method for Wheel Load Measurements -- Designing the 40 kHz Piezoelectric Sandwich Type Ultrasonic Transducer -- Development of an Electronic Stethoscope -- Determination of Forces

	and Moments of Force Transmitted by the Wheel of a Mobile Robot During Motion -- Comparative Study of Maintenance Vehicles Using Vibration Analysis -- Correction of the Influence of Not Ideal Geometric Profile on the Conductivity of Reference Cell -- Modelling and Analysis of the Hydraulic Servo Drive System -- Stereoscopic Technique for a Motion Parameters Determination of Remotely Operated Vehicles.
Sommario/riassunto	This book presents recent advances and developments in control, automation, robotics, and measuring techniques. It presents contributions of top experts in the fields, focused on both theory and industrial practice. In particular the book is devoted to new ideas, challenges, solutions and applications of Mechatronics. The particular chapters present a deep analysis of a specific technical problem which is in general followed by a numerical analysis and simulation, and results of an implementation for the solution of a real world problem. The presented theoretical results, practical solutions and guidelines will be useful for both researchers working in the area of engineering sciences and for practitioners solving industrial problems. .