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Nota di contenuto	Actuation of Elastomeric Micro Devices via Capillary Forces -- MEMS Accelerometers: Testing and Practical Approach for Smart Sensing and Machinery Diagnostics -- Highlights in Mechatronic Design Approaches -- Microrobots for Active Object Manipulation -- Integrating Smart Mobile Devices for Immersive Interaction and Control of Physical Systems: A Cyber-Physical Approach -- Force/Tactile Sensors based on Optoelectronic Technology for Manipulation and Physical Human-Robot Interaction -- Mechanical Characterization of MEMS -- Basic Theory and Modelling of Marmot-Like Robot for Mine Safety Detection and Rescuing -- Reconfigurable Robot Manipulators: Adaptation, Control and MEMS Applications -- MEMS Sensors and Actuators -- Soot Load Sensing in a Diesel Particulate Filter based on Electrical Capacitance Tomography -- Microfluidic Platforms for Bio-Applications -- Recent

Advances in Mechatronics Devices: Screening and Rehabilitation Devices for Autism Spectrum Disorder -- Electrochemically Derived Oxide Nanoform based Gas Sensor Devices: Challenges and Prospects with MEMS Integration -- Minimally Invasive Medical Devices and Healthcare Devices using Microfabrication Technology -- Flexible Electronic Devices for Biomedical Applications -- MEMS Devices in Agriculture -- MEMS Pressure-Flow-Temperature (PQT) Sensor for Hydraulic Systems -- Vibrating Nanoneedle for Single Cell Wall Cutting -- A Robotic Percussive Riveting System for Aircraft Assembly Automation -- Photo-Induced Fabrication Technology for 3D Micro Devices -- Long-Range Nano-Scanning Devices based on Optical Sensing Technology -- Microfluidics for Mass Measurement of Miniature Object like Single Cell and Single Micro Particle -- Micromanipulation Tools -- Inertial Microfluidics: Mechanisms and Applications -- Force Sensing for Micro/Meso Milling -- Magnetically-driven Microrobotics for Micromanipulation and Biomedical Applications -- Design, Fabrication and Robust Control of Miniaturized Optical Image Stabilizers -- Biofeedback Technologies for Wireless Body Area Networks -- Inverse Adaptive Controller Design for Magnetostrictive-actuated Dynamic Systems. .

Sommario/riassunto

This book introduces the state-of-the-art technologies in mechatronics, robotics, and MEMS devices in order to improve their methodologies. It provides a follow-up to "Advanced Mechatronics and MEMS Devices" (2013) with an exploration of the most up-to-date technologies and their applications, shown through examples that give readers insights and lessons learned from actual projects. Researchers on mechatronics, robotics, and MEMS as well as graduate students in mechanical engineering will find chapters on: Fundamental design and working principles on MEMS accelerometers Innovative mobile technologies Force/tactile sensors development Control schemes for reconfigurable robotic systems Inertial microfluidics Piezoelectric force sensors and dynamic calibration techniques ...And more. Authors explore applications in the areas of agriculture, biomedicine, advanced manufacturing, and space. Micro-assembly for current and future industries is also considered, as well as the design and development of micro and intelligent manufacturing.