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Nota di contenuto	Applications Of Sic Mosfets In AC-DC Converters Dedicated For Distributed Generation Systems -- Magnetic Composites In Electric Motors -- Brushless DC Motor With Permanent Magnets For Unmanned Aerial Vehicle Hybrid Drive -- Electromagnetic Review Of Rotor/Stator Misalignment In Permanent Magnet Axial-Flux Motor -- Field-Based Analysis And Optimal Shape Synthesis Of Switched-Reluctance Motors -- An Analytical Model Of An Electrical Machine With Internal Permanent Magnets Part II. The Work Of Electric Generator Under An Unbalanced Load - Simulations And Measurement Verification -- Analysis And Synthesis Of Intelligent System For Electric Mode Control In Electric Arc Furnace -- Passive Stall Control Systems Of Power Limitation Modes For Vertical Axis Wind Turbines (VAWT) -- Multithreading Analysis Of Properties And Electromagnetic Interference In Inductive Contactless Power Supply System With Bidirectional Energy

Flow - Part1: Topology System For Electric Vehicles -- Review Of Structural Solutions In High Voltage Overhead Power Lines And Possibilities Of Reducing Emission Of Electromagnetic Fields -- Active Power Flow Control On Cross-Border Connections -- Wind Farm Fluctuation Supression Using Energy Storage -- Simulations And Experimental Investigations Of An Impulse System For Battery Charging In Electric Bike -- Powers Balances In The AC Circuit With Non-Linear Load And Reactive Power Compensation -- The Analysis Of Wind Turbine With Horizontal Rotation Axis With The Use Of Numerical Fluid Mechanics -- ELECTRICAL CIRCUITS OF NON-INTEGER ORDER: Introduction To An Emerging Interdisciplinary Area With Example -- Fractional Derivatives In Electrical Circuits Theory And In Magnetic Field Theory -- The Electromagnetic Compatibility In Researches Of Railway Traffic Control Devices -- The Horn Gap Arresters Modelling In A Lightning Discharge Analysis -- Evaluating The Level Of Waveform Distortion -- Digital Processing Of Pulse Frequency Signal In Measurement System -- Time Analysis Of Data Exchange In Distributed Control Systems Based On Wireless Network Model -- Non-Invasive Thermal Methods For The Research And Diagnosis Of Electromechanical Objects -- Mutual Forces Acting On Chains Of Particles -- The S11-Parameter Analysis Of Multi-Slot Coaxial Antenna With Periodic Slots -- The Reliability Of Critical Systems In Railway Transport Based On The Track Rail Circuit -- Research Of Cohesion Principle In Illuminations Of Monumental Objects -- Analysis And Simulation Of Internal Transport In The High Storage Warehouse -- Effectiveness Analysis Of Small Hybrid Power Plant With Energy Storage -- Application For Contactless Objects' Identification By NFC Chips Embedded In Mobile Devices.

Sommario/riassunto

This book addresses selected topics in electrical engineering, electronics and mechatronics that have posed serious challenges for both the scientific and engineering communities in recent years. The topics covered range from mathematical models of electrical and electronic components and systems, to simulation tools implemented for their analysis and further developments; and from multidisciplinary optimization, signal processing methods and numerical results, to control and diagnostic techniques. By bridging theory and practice in the modeling, design and optimization of electrical, electromechanical and electronic systems, and by adopting a multidisciplinary perspective, the book provides researchers and practitioners with timely and extensive information on the state of the art in the field — and a source of new, exciting ideas for further developments and collaborations. The book presents selected results of the XIII Scientific Conference on Selected Issues of Electrical Engineering and Electronics (WZEE 2016), held on May 04–08, 2016, in Rzeszów, Poland. The Conference was organized by the Rzeszów Division of Polish Association of Theoretical and Applied Electrical Engineering (PTETiS) in cooperation with the Faculty of Electrical and Computer Engineering of the Rzeszów University of Technology.