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Titolo	Research progress of magnetic levitating bearings and some advanced technology : selected, peer reviewed papers from the fourth Chinese Symposium on magnetic bearings (CSMB-4, Mechatronics 2011), August 20-22, 2011, Shanghai, China // edited by Xiping Wang [and five others]
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Collana	Applied Mechanics and Materials, , 1662-7490 ; ; Volume 150
Altri autori (Persone)	WangXiping
Disciplina	621.34
Soggetti	Magnetic suspension Magnetic bearings
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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 and indexes.
Nota di contenuto	Research Progress of Magnetic Levitating Bearings and Some Advanced Technology; Preface; Table of Contents; Chapter 1: Technique of Magnetism; A New Distribution and Application in Engineering Reliability; A Symbiotic Multi-Species Optimizer for Discrete Optimization; Analysis on Axial Magnetic Force of Permanent Axial Bearing by Axial Magnetized; Calculation of Leakage Coefficient for Hybrid Magnetic Bearing; Control Parameter Tuning of Magnetic Bearing PID Controller Based on Expansion Coefficient Critical Proportion Decoupling Control for Bearingless Synchronous Reluctance Motor Based on Neural Networks InverseDirect Torque Control of Bearingless Synchronous Reluctance Motor; Distance Protection Application Based on Wavelet Transform and Traveling Wave Ranging; Distributed Remote Testing Research Based on Self-Union Technology; Effects of Rotational Inertia and Bearing Force on Stability of Permanent Maglev Rotator; Influence of Magnetic Bearing Stiffness on Rotor in Wind Turbine Generator; Influence of Suspension Mass Variation on Dynamic Characteristic of Magnetic Suspension System Magnetic Force Characteristics and Structure of a Novel Radial Hybrid

Magnetic Bearing Method of Variable Parameter PID Control Applied for AMB System; Research on Adaptive Feedforward Control Algorithm of Electromagnetic Active Vibration Isolation System; Rotor Eddy Current Losses Analysis on BPMSM Using FEM; Self Adaptive Integral-Type Sliding Mode Control for Supporting Structure of a Magnetic Vertical Axis Wind Turbine; Sensorless Control of IPMSM Using Extended Flux Estimation Method; Sensorless Control of IPMSM Using Modified Current Slope Estimation Method  
 System Identification Based on Recursive Least Square Method for the Magnetic Suspension Active Vibration Isolation System  
 The Impact Analysis of Digital Controller Hardware Parameters of AMB on Control Precision; Chapter 2: Design and Development of Magnetic Suspension System; Analysis of a Comprehensive Example of Numerical Control Machining; Analysis of Impact of Substation Grounding on Power Network; Application of Kalman Filter in DC Motor Speed Control System; Backstepping-Based Nonlinear Robust Controller for AMB Spindle; Comparison and Improvement for PWM Output Circuit Control System Design for AC-DC Three-Degree-of-Freedom Hybrid Magnetic Bearing  
 Design and Optimization of Vertical Axis Wind Turbine; Design of High-Speed Magnetic Centrifugal Blower Impeller and Numerical Simulation of Internal Flow Field; Design of Main Circuit and Analysis of Active Power Filter; FEA of Large-Scale Cross-Roller Slewing Bearing Used in Special Propeller; Reactive Power Optimization in Power Supply System for Industrial Enterprise; Research on Single Neuron Adaptive PID Control  
 Small-Sized Wind-Light Complementary Power Generation System with Permanent Magnetic Levitation Technique

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## Sommario/riassunto

This collection of peer-reviewed papers covers innovations and practical experience in magnetic suspension systems and new magnetic bearing structures, all types of magnetic actuators, passive suspension, new measuring method and sensing technology, magnetic-field expertise and case studies, safety and reliability studies, key components and materials, modeling and identification, self-bearing (bearing-less) motors, self-sensing (sensor-less) techniques, low-loss magnetic bearings, superconductor magnetic bearings, micro-bearings and other novel research areas. This work will be invaluable to

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