Lateral and Torsional Vibration of a Cracked Overhanging Rotor Shaft-Abdualhakim Talai 2015-12-17 In this book experimental and numerical investigations were carried out to identify the presence of a crack in a cylindrical overhanging rotor shaft with a propeller attached to the free end of the rotor. The rotor shaft was supported on a test frame using two supports. The rotor shaft had a cantilevered portion carrying the propeller. The rotor shaft was supported using ball bearings that were attached to the two test frame supports. In the experimental study, cracks of different depths were created on the shaft at the position of the maximum bending moment. The shaft’s vibration responses for lateral and torsional vibrations were measured using an accelerometer, and shear strain gages fixed at three different locations, respectively. The response parameters of the shaft were then obtained using the modal analysis software, LMS TestLabTM. These experimental results were used to validate the numerical results obtained from a finite element analysis (ANSYS) using the beam element, BEAM4, and the three-dimensional iso-parametric elements (element types 186 and 187).


The Shock and Vibration Digest- 2003

Recent Developments in Mechatronics and Intelligent Robotics-Srikanta Patnaik 2020-03-04 This book gathers selected papers presented at the Third International Conference on Mechatronics and Intelligent Robotics (ICMIR 2019), held in Kunming, China, on May 25–26, 2019. The proceedings cover new findings in the following areas of research: mechatronics, intelligent mechatronics, robotics and biomimetics; novel and unconventional mechatronic systems; modeling and control of mechatronic systems; elements, structures and mechanisms of micro- and nano-systems; sensors, wireless sensor networks and multi-sensor data fusion; biomedical and rehabilitation engineering, prosthetics and artificial organs; artificial intelligence (AI), neural networks and fuzzy logic in mechatronics and robotics; industrial automation, process control and networked control systems; telerobotics and human–computer interaction; human-robot interaction; robotics and artificial intelligence; bio-inspired robotics; control algorithms and control systems; design theories and principles; evolutionary robotics; field robotics; force sensors, accelerometers and other measuring devices; healthcare robotics; kinematics and dynamics analysis; manufacturing robotics; mathematical and computational methodologies in robotics; medical robotics; parallel robots and manipulators; robotic cognition and emotion; robotic perception and decisions; sensor integration, fusion and perception; and social robotics.

International Directory of Software- 1982

Case Histories in Vibration Analysis and Metal Fatigue for the Practicing Engineer-Anthony Sofronas 2012-07-25 This highly accessible book provides analytical methods and guidelines for solving vibration problems in industrial plants and demonstrates their practical use through case histories from the author's personal experience in the mechanical engineering industry. It takes a simple, analytical approach to the subject, placing emphasis on practical applicability over theory, and covers both fixed and rotating equipment, as well as pressure vessels. It is an ideal guide for readers with diverse experience, ranging from undergraduate students to mechanics and professional engineers.

The Shock and Vibration Digest- 2003

2nd International Students Science Congress Proceedings-Mahamat Ali Amine Ouchar The aim of this study is to determine PstI polymorphism in the exon 6 region of the Pituitary-specific Transcription Factor (Pit-1) gene which is regarded as a candidate gene in mammals in regulating growth and development in 6 different goat breeds reared in Turkey. PstI polymorphism in Pit-1 gene (450 bp) was investigated by Restriction Fragment Length Polymorphism (RFLP) method in a total of 217 goats including 36 Hair, 43 Kilis, 37 Honamli, 46 Halep and 37 heads of Saanen breeds.

Practical Machinery Vibration Analysis and Predictive Maintenance-Cornelius Scheffer 2004-07-16 Machinery Vibration Analysis and Predictive Maintenance provides a detailed examination of the detection, location and diagnosis of faults in rotating and reciprocating machinery using vibration analysis. The basics and underlying physics of vibration signals are first examined. The acquisition and processing of signals is then reviewed followed by a discussion of machinery fault diagnosis using vibration analysis. Hereafter the important issue of rectifying faults that have been identified using vibration analysis is covered. The book also covers the other techniques of predictive maintenance such as oil and particle analysis, ultrasound and infrared thermography. The latest approaches and equipment used together with the latest techniques in vibration analysis emerging from current research are also highlighted. Understand the basics of vibration measurement Apply vibration analysis for different machinery faults Diagnose machinery-related problems with vibration analysis techniques

Design and Analysis of Ultrasonic Horns Operating in Longitudinal and Torsional Vibration-Hassan Dakhil Al-Budairi 2012 Combining modes of vibration, such as longitudinal and torsional vibration, is advantageous in many ultrasonic applications such as ultrasonic drilling, welding, and motors. In this work we present a novel approach to the design a longitudinal-torsional (LT) ultrasonic horn which adapts the front mass in a traditional Langevin transducer. Different approaches, such as degeneration of longitudinal vibration and coupling between longitudinal (L) and torsional (T) modes, have been used to generate the LT mode of vibration. The degeneration approach creates a non-uniform section, by cutting and twisting a number of slots along the path of the L wave such that part of the wave converts into T wave whilst the remaining part propagates unchanged through the section; these two parts are recombined near the output surface to form LT vibration. The mode coupling approach uses two set of vibration generators, usually piezoelectric elements, where one set generates L vibration whilst the second set generates T vibration. An exponential cross-sectional horn uses to
combine the two modes where the area reduction factor is selected such that these modes resonate at the same frequency. However, many limitations prevent the wide usage of these methods in ultrasonic applications. These limitations are the complex design and excitation, possible coupling with surrounding modes, instability in operating at different boundaries, difficulty in securing the structure without influencing the vibrational response and the low produced torsionality, which is the ratio of torsional to longitudinal response at the output face. The new approach is based on combining the principles of these methods to overcome the previously stated limitations, the slotting technique is incorporated into the exponential cross-sectional path and the horn produced is utilised as the front and back mass. A Langevin transducer, set of design parameters and design criteria are used to optimise the transducer and includes applicable design methods, which consists of developing the transducer and; the excitation features of LT transducer such that it can operate without the effect of surrounding modes of vibration and can produce high response and torsionality at the output surface. A methodology which combines mathematical and experimental modeling is used to optimise LT transducer design. The mathematical modeling, which includes finite element (FE) and analytical methods, is performed to optimise the geometry and to predict the electromagnetic parameters and the dynamic behavior of the LT transducer. The experimental modelling is used to validate the mathematical results and to characterise the fabricated prototypes under different operating conditions. The dimensions of the initial design of the LT transducer are derived from the principles of the wave equation. This transducer has a set of piezoceramic components sandwiched between a cylindrical back mass and an exponential front mass connected by a pre-stressed bolt. The dimensions are used to create the FE model, using the FE software package ABACUS, where different shapes of cut at different dimensions and at various angle of twist along the front mass are introduced and examined by a modal analysis procedure to the front mass. An optimised model is then utilised in a size scaling study to confirm the suitability of using this approach for different ultrasonic applications. The dimensions of the optimised design are also used in the analytical study, based on Mason's equivalent circuit approach, to predict the electromechanical parameters where a one-dimensional equivalent circuit approach is created separately for each port wall and for the front mass, and the longitudinal and torsional, equivalent circuits. The complete equivalent network of the LT transducer is then solved using the mathematical software package MATHEMATICA. The analytical model is also extended to validate some of particular FE findings such as the distribution of the response amplitude and the location of the longitudinal nodal plane along the transducer's structure. Two optimised models of different sizes are fabricated and characterised through vibrational testing, including electrical and electromechanical responses. Oil film experimental harmonic analysis, Optimisation of the pre-stressing of the transducer is performed by applying different torques to the pre-stressed bolt and measuring the electrical impedances spectra where the results are compared to analytical findings. EMA is then used to describe the natural characteristics of the structures where the results are used to accurately extract the modal parameters and to validate the predictions of the FE and analytical model. Different levels of harmonic excitation are used to characterise the fabricated prototypes where the results are compared to the findings of the mathematical modelling. A case study of the design of the LT drill is presented to validate the design approach for real ultrasonic applications. A similar methodology is applied and the resulting LT drill is tested for both unloaded and loaded operating conditions. The results obtained show that this new approach can be easily and successfully applied to ultrasonic applications to produce a torsional to longitudinal amplitude response of 0.8 which is measured on a fabricated prototype.

Vibration Analysis of Gas Turbine Rotor-Srinivasra Rao Dokka 2018-09-20 Master's Thesis from the year 2016 in the subject Engineering - Mechanical Engineering, , language: English, abstract: The purpose of this report is to determine the lateral and torsional dynamic characteristics of the complete system under synchronous conditions of excitation and response. A damped natural response study was made in order to investigate the combined effect of oil film stiffness and damping coefficients on system damping and stability characteristics at all damped natural resonance speeds. An unbalance response analysis is also performed to study the system sensitivity. This study was performed to investigate the lateral vibration characteristics of the subject system in order to avoid vibration problems that might interfere with the smooth and reliable operation of the system. Total system studies are important in that often the coupling effects of marrying driver and driven equipment result in resonance and these interactions can be investigated when calculating the response when exciting the system. Oil film stiffness and damping for all bearings must be properly considered in the system calculations along with the effective stiffness and damping of pedestal supports as required. The above effects are in the following calculation to ensure the proper calculation of resonant speeds. The following study concerns itself with the lateral analysis of gas turbine, load coupling, and 50 Hz/15.75Kva generator. This study reports the lateral natural frequencies and mode shapes calculated from the mass and stiffness distribution of the beam elements modeled using the DYROBES software. An unbalanced response analysis is also performed to study the system sensitivity. The significance of torsional vibration in high speed rotating machinery is well established. It is desirable to keep to torsional natural frequencies away from operating speed as well as twice the electrical frequency of the system. However, this is not always feasible and, therefore torsional criticals can be tolerated within these regions provided the response to excitation levels are low enough to keep the alternating shear stress within acceptable levels. The following study concerns itself with the complete torsional analysis of gas turbine rotor including load coupling, gear box and 50Hz/15.75Kva generator rotor. This study reports the torsional natural frequencies, mode shapes and Campbell diagram by using transfer matrix method. The transient response shear stresses were also calculated for fault condition.

Proceedings of the FISITA 2012 World Automotive Congress-SAE-China 2012-11-02 Proceedings of the FISITA 2012 World Automotive Congress are selected from nearly 2,000 papers submitted to the 34th FISITA World Automotive Congress, which is held by Society of Automotive Engineers of China (SAE-China) and the International Federation of Automotive Engineering Societies (FISITA). This proceedings focuses on sustainable mobility in all areas of passenger car, truck and bus transportation. Volume 2: Advanced Internal Combustion Engines (II) focuses on: •Flow and Combustion Diagnosis •Engine Design and Simulation •Heat Transfer and Waste Heat Reutilization •Emission Standard and International Regulations Above all researchers, professional engineers and graduates in fields of automotive engineering, mechanical engineering and electronic engineering will benefit from this book. SAE-China is a national academic organization composed of enterprises and professionals who focus on research, design and education in the fields of automotive and related industries. FISITA is the umbrella organization for the national automotive societies in 37 countries around the world. It was founded in Paris in 1948 with the purpose of bringing engineers from around the world together in a spirit of cooperation to share ideas and advance the technological development of the automobile.

Analysis and Control of Oilwell Drilling Vibrations-Martha Belém Saldivar Márquez 2015-03-09 This book reports the results of exhaustive research work on modeling and control of vertical oil well drilling systems. It is focused on analysis, determination of the equations of dynamic response and vibration modes affecting overall perforation performance: stick-slip (torsional vibration) and bit-bounce (axial vibration). The text is organized in three parts. The first part, Modeling, presents lumped- and distributed-parameter models that allow the dynamic behavior of the drill string to be characterized; a comprehensive mathematical model taking into account mechanical and electric components of the overall drilling system is also provided. The distributed nature of the system is accommodated by considering a system of wave equations subject to nonlinear boundary conditions; this model is transformed into a pair of neutral-type time-delay equations which can overcome the complexity involved in the analysis and simulation of the partial differential equation model. The second part, Analysis, is devoted to the study of the response of the system described by the time-delay model; important properties useful for analyzing system stability are investigated and frequency- and time-domain techniques are reviewed. Part III, Control, concerns the design of stabilizing control laws aimed at eliminating axial vibrations; diverse control techniques based on infinite-dimensional system representations are designed and evaluated. The control proposals are shown to be effective in suppressing stick-slip and bit-bounce so that a considerable improvement of the overall drilling performance can be achieved. This self-contained book provides operational guidelines to avoid drilling vibrations. Furthermore, since the modeling and control techniques presented here can be generalized to treat diverse engineering problems, it constitutes a useful resource to researchers working on control and its engineering application in oil well drilling.

Non-linear Multi-body Dynamic Analysis for the Investigation of Torsional and Axial Vibrations in Automotive Clutches-Dan Nicolae Centove 1997 This thesis presents an investigation of the axial and torsional vibration behaviour of the cable operated clutches for Diesel engine vehicles. Two different types of vibrations have been studied: an axial vibration referred to as "whoop" which occurs in the disengaging process and a torsional vibration which takes place during the engagement process. The market competition, short term design optimisations can be achieved only through use of powerful CAE (Computer Aided Engineering) tools in order to reduce the cost of physical prototyping and to predict the system behaviour influenced by different design parameters. The aim of this project is to produce a non-linear model of the clutch.
mechanism in order to study the effect of various clutch system components on its vibration performance. The clutch model is developed and simulated using the Automatic Dynamic Analysis of Mechanical Systems (ADAMS) software package commercially available. The parameters include geometrical physical inertial and force data in the clutch system of the vehicles. The results obtained through computer simulation are in close agreement with the experimentally monitored conditions obtained on vehicle and on test rigs in two specialist institutions in Noise Vibration and Harshness (NVH)......

Applications of ATILA FEM Software to Smart Materials-Kenji Uchino 2012-11-27 ATILA Finite Element Method (FEM) software facilitates the modelling and analysis of applications using piezoelectric, magnetostrictor, and shape memory materials. It allows entire designs to be constructed, refined and optimized before production begins. Through a range of instructive case studies, Applications of ATILA FEM software to smart materials provides an indispensable guide to the use of this software in the design of effective products. Part one provides an introduction to ATILA FEM software, beginning with an overview of the software code. New capabilities and loss integration are discussed, before part two goes on to present case studies of finite element modelling using ATILA. The use of ATILA in finite element analysis, piezoelectric polarization, time domain analysis of piezoelectric devices and the design of ultrasonic motors is considered, before piezo-composite and photonic crystal applications are reviewed. The behaviour of piezoelectric single crystals for sonar and thermal analysis in piezoelectric and magnetoelectric materials is also discussed, before a final reflection on the use of ATILA in modelling the damping of piezoelectric structures and the behaviour of single crystal devices. With its distinguished editors and international team of expert contributors, Applications of ATILA FEM software to smart materials is a key reference work for all those involved in the research, design, development and application of smart materials, including electrical and mechanical engineers, academics and scientists working in piezoelectrics, magnetoelectrics and shape memory materials. Provides an indispensable guide to the use of ATILA FEM software in the design of effective products Discusses new capabilities and loss integration of the software code, before presenting case studies of finite element modelling using ATILA Discusses the behaviour of piezoelectric single crystals for sonar and thermal analysis in piezoelectric and magnetoelectric materials, before a reflection on the use of ATILA in modelling the damping of piezoelectric structures

Recent Advances in Computer Science and Information Engineering-Zhihong Qian 2012-01-25 CSIE 2011 is an international scientific Congress for distinguished scholars engaged in scientific, engineering and technological research, dedicated to build a platform for exploring and discussing the future of Computer Science and Information Engineering with existing and potential application scenarios. The congress has been held twice, in Los Angeles, USA for the first and in Changchun, China for the second time, each of which attracted a large number of researchers from all over the world. The congress turns out to develop a spirit of cooperation that leads to new friendship for addressing a wide variety of ongoing problems in this vibrant area of technology and fostering more collaboration over the world. The congress, CSIE 2011, received 2483 full paper and abstract submissions from 27 countries and regions over the world. Through a rigorous peer review process, all submissions were refereed based on their quality of content, level of innovation, significance, originality and legibility. 688 papers have been accepted for the international congress proceedings ultimately.

Mechatronics Systems and Materials VI-Algirdas Vaclavas Valaiulis 2015-01-28 Collection of selected, peer reviewed papers from the 9th International Conference on Mechatronics Systems and Materials (MSM 2013), July 1-3, 2013, Vilnius, Lithuania. The 170 papers are grouped as follows: Chapter 1: Mechatronics Systems I: (Industrial Robotics; Microrobotics; Mobile Robots; Analysis of Vibration), Chapter 2: Mechatronics Systems II: (Optimization; Optimal Design; Integrated Diagnostics; Failure Analysis; Tribology in Mechatronics Systems; Analysis of Signals), Chapter 3: Mechatronics Systems III: (Applications of Artificial Intelligence; Sensors and Actuators in Mechatronics; Control of Mechatronics Systems), Chapter 4: Materials: (Multifunctional and Smart Materials; Metallic Alloys; Piezoelectric Materials; Nanomaterials; Ceramics and Glasses; Biomaterials and Technology; Coatings and Properties), Chapter 5: Engineering Technologies: (Advanced and Digital Manufacturing; Systems Engineering; Micro and Nano Technologies; Materials Joining Technologies; Modeling and Optimization of Processes), Chapter 6: Education: (New Trends and Curricula for BSc and MSC in Two Tier Higher Education in the Fields of Mechatronics Systems and Materials Science)

Advanced Materials and Structural Engineering-Jong Wan Hu 2016-02-03 The ICMAEST 2015 Conference covered new developments in advanced materials and engineering structural technology. Applications in civil, mechanical, industrial and material science are covered in this book. Providing high-quality, scholarly research, addressing developments, applications and implications in the field of structural health monitoring, construction safety and management, sensors and measurements. This volume contains new models for nonlinear structural analysis and applications of modeling identification. Furthermore, advanced chemical materials are discussed with applications in mechanical and civil engineering and for the maintenance of new materials. In addition, a new set of pressure regulating and water conveyance based on small and middle hydropower stations is discussed. An experimental investigation of the ultimate strength and behavior of the three types of steel tubular K-joints was presented. Furthermore, real-time and frequency linear and nonlinear modeling performance of materials of structures contents were concluded with the notion of a fully brittle material, and this approach is implemented in the book by outlining a finite-element method for the prediction of the construction performance and cracking patterns of arbitrary structural concrete forms. This book is an ideal reference for practicing engineers in material, mechanical and civil engineering and consultants (design, construction, maintenance), and can also be used as a reference for students in mechanical and civil engineering courses.

Vibration and Shock Handbook-Clarence W. de Silva 2005-06-27 Every so often, a reference book appears that stands apart from all others, destined to become the definitive work in its field. The Vibration and Shock Handbook is just such a reference. From its ambitious scope to its impressive list of contributors, this handbook delivers all of the techniques, tools, instrumentation, and data needed to model, analyze, monitor, modify, and control vibration, shock, noise, and acoustics. Providing convenient, thorough, up-to-date, and authoritative coverage, the editor summarizes important and complex concepts and results into "snapshot" windows to make quick access to this critical information even easier. The Handbook's nine sections encompass: fundamentals and analytical techniques; computer techniques, tools, and signal analysis; shock and vibration methodologies; instrumentation and control; monitoring vibration, shock, and acoustic systems; standard test methods; vibration and related regulatory issues; system design, application, and control implementation; and acoustics and noise suppression. The book also features an extensive glossary and convenient cross-referencing, plus references at the end of each chapter. Brimming with illustrations, equations, examples, and case studies, the Vibration and Shock Handbook is the most extensive, practical, and comprehensive reference in the field. It is a must-have for anyone, beginner or expert, who is serious about investigating and controlling vibration and acoustics.

Computational Methods and Experiments in Materials Characterization II-C. A. Brebbia 2005-01-01 Bringing together the work of practitioners in many fields of engineering, materials and computational science, this book includes most of the papers presented at the Second International Conference on Material Characterisation. Compiled with the central aim of encouraging interaction between experimentalists and modellers, the contributions featured are divided under the following sections: MICROSTRUCTURES \ Composite; Alloys; Ceramics; Composites; Foams; Suspensions; Biomaterials; Thin Films; Coatings. EXPERIMENTAL METHODS - Optical Imaging; SEM; TEM; X-Ray Microtomography; Ultrasonic Techniques; NMR/MRI; Micro/Nano Indentation; Thermal Analysis; Surface Chemistry. COMPUTATIONAL METHODS -
Continuum Methods (FEM, FV, BEM); Particle Models (MD, DPD, Lattice-Boltzmann); Monte Carlo Methods; Cellular Automata; Hybrid Multiscale Methods; and Damage Mechanics.


STAR - 1991-08

Software Abstracts for Engineers - 1992

Fifth European Workshop on Structural Health Monitoring 2010 - Fabio Casciati 2010

VIRTUAL INSTRUMENTATION USING LABVIEW - JOVITHA JEROME 2010-03-29 This book provides a practical and accessible understanding of the fundamental principles of virtual instrumentation. It explains how to acquire, analyze and present data using LabVIEW (Laboratory Virtual Instrument Engineering Workbench) as the application development environment. The book introduces the students to the graphical system design model and its different phases of functionality such as design, prototyping and deployment. It explains the basic concepts of graphical programming and highlights the features and techniques used in LabVIEW to create Virtual Instruments (VIs). Using the technique of modular programming, the book teaches how to make a VI as a subVI. Arrays, clusters, structures and strings in LabVIEW are covered in detail. The book also includes coverage of emerging graphical system design technologies for real-world applications. In addition, extensive discussions on data acquisition, image acquisition, motion control and LabVIEW tools are presented. This book is designed for undergraduate and postgraduate students of instrumentation and control engineering, electronics and instrumentation engineering, electrical and electronics engineering, electronics and communication engineering, and computer science and engineering. It will be also useful to engineering students of other disciplines where courses in virtual instrumentation are offered. Key Features: Builds the concept of virtual instrumentation by using clear-cut programming examples Includes a summary that outlines important learning points and skills taught in the chapter. Offers a number of solved problems to help students gain hands-on experience of problem solving. Provides several chapter-end questions and problems to assist students in reinforcing their knowledge.

Optimum Dynamic Design - 1997

Reciprocating Machinery Dynamics - Abdulla S. Rangwala 2001 An exploration of developments in, and effects of, internal combustion engines, compressors and pumps, on the structural dynamic characteristics of components and systems, covering the fundamentals of vibration theory, design, construction and equipment operation. It includes software for evaluating system and component performance, spreadsheet calculations, and program modules arranged to determine a full array of design parameters, dimensions, and dynamic characteristics.

Applied Mechanics Reviews - 2000

ASME Technical Papers - 1998

Road and Off-Road Vehicle System Dynamics Handbook - Giangiorgio Mastroi 2014-01-06 Featuring contributions from leading experts, the Road and Off-Road Vehicle System Dynamics Handbook provides comprehensive, authoritative coverage of all the major issues involved in road vehicle dynamic behavior. While the focus is on automobiles, this book also highlights motorcycles, heavy commercial vehicles, and off-road vehicles. The authors

Proceedings of the 1st International Workshop on High-Speed and Intercity Railways - Yi-Qing Ni 2012-02-21 This book contains the papers included in the proceedings of the 1st International Workshop on High-speed and Intercity Railways (IWHIR 2011) held in Shenzhen and Hong Kong, China from July 19 to July 22, 2011, which is organized by The Hong Kong Polytechnic University, in collaboration with Southwest Jiaotong University, Beijing Jiaotong University, Dalian Jiaotong University, China Engineering Consultants Inc., Zhejiang University, and Tsinghua University. Continuing the great initiatives and momentum of the previous workshops on high-speed and intercity railways worldwide in recent years, IWHIR 2011 aims at providing a platform for academic scholars and practicing engineers to share knowledge and experience, to promote collaboration, and to strengthen R&D activities related to railway engineering. Engineers, scientists, professors, and students from universities, research institutes, and related industrial companies have been cordially invited to participate in the workshop. These papers have covered a wide range of issues concerning high-speed and intercity railways in the theoretical, numerical, and experimental work pertaining to high-speed and intercity railways. Showcasing diversity and quality, these papers report the state-of-the-art and point to future directions of research and development in this exciting area.

Fossil Energy Update - 1985

Post-Earthquake Rehabilitation and Reconstruction - F.Y. Cheng 1996-10-14 Damage assessment, rehabilitation, decision-making, social consequences, repair and reconstruction; these are all critical factors for considerations following natural disasters such as earthquakes. In order to address these issues, the United States of America and the Peoples Republic of China regularly organize bilateral symposia/workshops to investigate multiple hazard mitigation, particularly with respect to earthquake engineering. This book contains state-of-the-art reports presented by world-renowned researchers at the US/PRC Symposium Workshop on Post-Earthquake Rehabilitation and Reconstruction held in Kunming, Yunnan, China, May 1995. The following key areas are addressed: damage assessment of structures after earthquakes; lessons of post-earthquake recovery, rehabilitation and reconstruction, including public policy, land use options, urban planning, and design; issues in and examples of decision-making, and implementation of rehabilitation and reconstruction plans and policies; repair, strengthening, retrofit and control of structures and lifeline systems, post-earthquake socio-economic problems covering issues of relief and recovery; human and organizational behavior during emergency response, and strategies for improvement; real-time monitoring of earthquake response and damage.


SV. Sound and Vibration - 2000

Publications of the National Institute of Standards and Technology ... Catalog - National Institute of Standards and Technology (U.S.) 1983

Intelligent Computing, Communication and Devices - Lakhmi C. Jain 2014-08-25 In the history of mankind, three revolutions which impact the human life are tool-making revolution, agricultural revolution and industrial revolution. They have transformed not only the economy and civilization but also overall development of the human society. Probably, intelligence revolution is the next revolution, which the society will perceive in the next 10 years. ICCD-2014 covers all dimensions of intelligent sciences, i.e. Intelligent Computing, Intelligent Communication and Intelligent Devices. This volume covers contributions from Intelligent Computing, areas such