

Study On Predictive Maintenance Strategy

This book gathers extended versions of the best papers presented at the Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE), held on September 2nd, 3, 2019, in Gazimagusa, North Cyprus, Turkey. It covers a wide range of topics, including decision analysis, supply chain management, systems modelling and quality control. Further, special emphasis is placed on the state of the art and the challenges of digital disruption, as well as effective strategies that can be used to change organizational structures and eliminate the barriers that are keeping industries from taking full advantage of today's digital technologies.

This book includes selected peer-reviewed papers presented at third International Conference on Computational and Experimental Methods in Mechanical Engineering held in June 2021 at G.L. Bajaj Institute of Technology and Management, Greater Noida, U.P, India. The book covers broad range of topics in latest research including hydropower, heat transfer, fluid mechanics, advanced manufacturing, recycling and waste disposal, solar energy, thermal power plants, refrigeration and air conditioning, robotics, automation and mechatronics, and advanced designs. The authors are experienced and experts in their field, and all papers are reviewed by expert reviewers in respective field. The book is useful for industry peoples, faculties, and research scholars.

This book constitutes extended selected papers from the 17th Conference on Advanced Information Technologies for Management, AITM 2019, and the 14th Conference on Information Systems Management, ISM 2019, held as part of the Federated Conference on Computer Science and Information Systems, FedCSIS, which took place in Leipzig, Germany, in September 2019. The total of 7 full and 6 short papers presented in this volume were carefully reviewed and selected from a total of 45 submissions. The papers selected to be included in this book contribute to the understanding of relevant trends of current research on and future directions of information technology for management in business and public organizations. They were organized in topical sections named: information technology assessment for future development; methods and models for designing information technology, and aspects of implementing information technology.

This book offers the exchange of ideas between scientists and technicians from both the academic and industrial sector which is essential to facilitate the development of systems that can meet the ever-increasing demands of today's society. The 18th International Symposium on Distributed Computing and Artificial Intelligence 2021 (DCAI 2021) is a forum to present the applications of innovative techniques for studying and solving complex problems in artificial intelligence and computing areas. The present edition brings together past experience, current work, and promising future trends associated with distributed computing, artificial intelligence, and their application in order to provide efficient solutions to real problems. This year's technical program presents both high quality and diversity, with contributions in well-established and evolving areas of research. Specifically, 55 papers were submitted to main track and special sessions, by authors from 24 different countries, representing a truly-wide area network of research activity. The DCAI'21 technical program has selected 21 papers, and, as in past editions, it will be special issues in ranked journals such as Electronics, Sensors, Systems, Robotics, Mathematical Biosciences and ADCAJ. These special issues cover extended versions of the most highly regarded works. Moreover, DCAI'21 special sessions have been a very useful tool to complement the regular program with new or emerging topics of particular interest to the participating community.

Predictive Maintenance in Smart Factories

Recent Developments on Industrial Control Systems Resilience

Service Oriented, Holonic and Multi-Agent Manufacturing Systems for Industry of the Future

Selected papers from the Global Joint Conference on Industrial Engineering and Its Application Areas, GJCIE 2019, September 2-3, 2019, Gazimagusa, North Cyprus, Turkey

Case Studies in Reliability and Maintenance

Maintenance Strategy

Engineering Asset Management discusses state-of-the-art trends and developments in the emerging field of engineering asset management as presented at the Fourth World Congress on Engineering Asset Management (WCEAM). It is an excellent reference for practitioners, researchers and students in the multidisciplinary field of asset management, covering such topics as asset condition monitoring and intelligent maintenance; asset data warehousing, data mining and fusion; asset performance and level-of-service models; design and life-cycle integrity of physical assets; deterioration and preservation models for assets; education and training in asset management; engineering standards in asset management; fault diagnosis and prognostics; financial analysis methods for physical assets; human dimensions in integrated asset management; information quality management; information systems and knowledge management; intelligent sensors and devices; maintenance strategies in asset management; optimisation decisions in asset management; risk management in asset management; strategic asset management; and sustainability in asset management.

This book provides profound insights into industrial control system resilience, exploring fundamental and advanced topics and including practical examples and scenarios to support the theoretical approaches. It examines issues related to the safe operation of control systems, risk analysis and assessment, use of attack graphs to evaluate the resiliency of control systems, preventive maintenance, and malware detection and analysis. The book also discusses sensor networks and Internet of Things devices. Moreover, it covers timely responses to malicious attacks and hazardous situations, helping readers select the best approaches to handle such unwanted situations. The book is essential reading for engineers, researchers, and specialists addressing security and safety issues related to the implementation of modern industrial control systems. It is also a valuable resource for students interested in this area.

As global warming is slowly becoming a dangerous reality, governments and private institutions are introducing policies to minimize it. Those policies have led to the development and deployment of Renewable Energy Sources (RESs), which introduces new challenges, among which the minimization of downtime and Levelised Cost of Energy (LCOE) by optimizing maintenance strategy where early detection of incipient faults is of significant intent. Hence, this is the focus of this thesis. While there are several maintenance approaches, predictive maintenance can utilize SCADA readings from large scale power plants to detect early signs of failures, which can be characterized by abnormal patterns in the measurements. There exists several approaches to detect these patterns such as model-based or hybrid techniques, but these require the detailed knowledge of the analyzed system. As SCADA system collects large amounts of data, machine learning techniques can be used to detect the underlying failure patterns and notify customers of the abnormal behaviour. In this work, a novel framework based on machine learning techniques for fault prediction of wind farm generators is developed for an actual customer. The proposed fault prognosis methodology addresses data limitation such as class imbalance and missing data, performs statistical tests on time series to test for its stationarity, selects the features with the most predictive power, and applies machine learning models to predict a fault with 1 hour horizon. The proposed techniques are tested and validated using historical data for a wind farm in Summerside, Prince Edward Island (PEI), Canada, and models are evaluated based on appropriate evaluation metrics. The results demonstrate the ability of the proposed methodology to predict wind generator failures, and the viability of the proposed methodology for optimizing preventive maintenance strategies.

Integrating development processes, policies, and reliability predictions from the beginning of the product development lifecycle to ensure high levels of product performance and safety, this book helps companies overcome the challenges posed by increasingly complex systems in today's competitive marketplace. Examining both research on and practical aspects of product quality and reliability management with an emphasis on applications, the book features contributions written by active researchers and/or experienced practitioners in the field, so as to effectively bridge the gap between theory and practice and address new research challenges in reliability and quality management in practice. Postgraduates, researchers and practitioners in the areas of reliability engineering and management, amongst others, will find the book to offer a state-of-the-art survey of quality and reliability management and practices.

Maintenance Decision Making

Encyclopedia of Business Analytics and Optimization

Maintenance Management of Heavy Duty Construction Plant and Equipment

Planning and Control of Maintenance Systems

Knowledge, Traceability and Decision

Computational and Experimental Methods in Mechanical Engineering

The LNCS 12115 constitutes the workshop papers which were held also online in conjunction with the 25th International Conference on Database Systems for Advanced Applications in September 2020. The complete conference includes 119 full papers presented together with 19 short papers plus 15 demo papers and 4 industrial papers in this volume were carefully reviewed and selected from a total of 487 submissions. DASFAA 2020 presents this year following five workshops: The 7th International Workshop on Big Data Management and Service (BDMS 2020) The 6th International Symposium on Semantic Computing and Personalization (SeCoP 2020) The 5th Big Data Quality Management (BDQM 2020) The 4th International Workshop on Graph Data Management and Analysis (GDMA 2020) The 1st International Workshop on Artificial Intelligence for Data Engineering (AIDE 2020)

This book briefly covers internationally contributed chapters with artificial intelligence and applied mathematics-oriented background-details. Nowadays, the world is under attack of intelligent systems covering all fields to make them practical and meaningful for humans. In this sense, this edited book provides the most recent research on use of engineering capabilities for developing intelligent systems. The chapters are a collection from the works presented at the 2nd International Conference on Artificial Intelligence and Applied Mathematics in Engineering held within 09-10-11 October 2020 at the Antalya, Manavgat (Turkey). The target audience of the book covers scientists, experts, M.Sc. and Ph.D. students, post-docs, and anyone interested in intelligent systems and their usage in different problem domains. The book is suitable to be used as a reference work in the courses associated with artificial intelligence and applied mathematics.

Analyzing maintenance as an integrated system with objectives, strategies and processes that need to be planned, designed, engineered, and controlled using statistical and optimization techniques, the theme of this book is the strategic holistic system approach for maintenance. This approach enables maintenance decision makers to view maintenance as a provider of a competitive edge not a necessary evil. Encompassing maintenance systems; maintenance strategic and capacity planning, planned and preventive maintenance, work measurements and standards, material (spares) control, maintenance operations and control, planning and scheduling, maintenance quality, training, and others, this book gives readers an understanding of the relevant methodology and how to apply it to real-world problems in industry. Each chapter includes a number exercises and is suitable as a textbook or a reference for a professionals and practitioners whilst being of interest to industrial engineering, mechanical engineering, electrical engineering, and industrial management students. It can also be used as a textbook for short courses on maintenance in industry. This text is the second edition of the book, which has four new chapters added and three chapters are revised substantially to reflect development in maintenance since the publication of the first edition. The new chapters cover reliability centered maintenance, total productive maintenance, e-maintenance and maintenance performance, productivity and continuous improvement.

The conference aims at forming a unique platform to bring together academicians and practitioners from industrial engineering and management engineering as well as from other disciplines working on production function applying the tools of operational research and production/operational management. Topics treated include: computer aided manufacturing, industry 4.0, big data and analytics, flexible manufacturing systems, fuzzy logic, industrial applications, information technologies in production management, optimization, production economy, production planning and control, productivity and performance management, project management, quality management, risk analysis and management, supply chain management.

Predictive Maintenance of Wind Generators Based on AI Techniques

An Introduction to Predictive Maintenance

Guiding Digital Transformation in Maintenance

Engineering Asset Management

Third International Conference, SADASC 2020, Marrakesh, Morocco, June 25 – 26, 2020, Proceedings

Proceedings of SOHOMA 2020

This volume constitutes refereed proceedings of the Third International Conference on Smart Applications and Data Analysis, SADASC 2020, held in Marrakesh, Morocco. Due to the COVID-19 pandemic the conference has been postponed to June 2020. The 24 full papers and 3 short papers presented were thoroughly reviewed and selected from 44 submissions. The papers are organized according to the following topics: ontologies and meta modeling; cyber physical systems and block-chains; recommender systems; machine learning based applications; combinatorial optimization; simulations and deep learning.

A one-of-a-kind examination of the latest developments in machine control In Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances, accomplished electronics researcher and engineer Alessandro Massaro delivers a comprehensive exploration of the latest ways in which people have achieved machine control, including automated vision technologies, advanced electronic and micro-nano sensors, advanced robotics, and more. The book is composed of nine chapters, each containing examples and diagrams designed to assist the reader in applying the concepts discussed within to common issues and problems in the real-world. Combining electronics and mechatronics to show how they can each be implemented in production line systems, the book presents insightful new ways to use artificial intelligence in production line machines. The author explains how facilities can upgrade their systems to an Industry 5.0 environment. Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances also provides: A thorough introduction to the state-of-the-art in a variety of technological areas, including flexible technologies, scientific approaches, and intelligent automatic systems Comprehensive explorations of information technology infrastructures that support Industry 5.0 facilities, including production process simulation Practical discussions of human-machine interfaces, including mechatronic machine interface architectures integrating sensor systems and machine-to-machine (M2M) interfaces In-depth examinations of internet of things (IoT) solutions in industry, including cloud computing IoT Perfect for professionals working in electrical industry sectors in manufacturing, production line manufacturers, engineers, and members of R&D industry teams, Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances will also earn a place in libraries of technicians working in the process industry.

This book reports on cutting-edge theories and methods for analyzing complex systems, such as transportation and communication networks and discusses multi-disciplinary approaches to dependability problems encountered when dealing with complex systems in practice. The book presents the most noteworthy methods and results discussed at the International Conference on Reliability and Statistics in Transportation and Communication (RelStat), which took place remotely from Riga, Latvia, on October 14 – 17, 2020. It spans a broad spectrum of topics, from mathematical models and design methodologies, to software engineering, data security and financial issues, as well as practical problems in technical systems, such as transportation and telecommunications, and in engineering education.

The volume presents a collection of 44 peer-reviewed articles from the First International Conference on Intelligent Systems in Production Engineering and Maintenance (ISPEM 2017). ISPEM 2017 was organized by the Faculty of Mechanical Engineering, Wrocław University of Science and Technology and was held in Wrocław (Poland) on 28–29 September 2017. The main topics of the conference included the possibility of using widely understood intelligent methods in production engineering. New solutions for innovative plants, research results and case studies taking into account advances in production and maintenance from the point of view of Industry 4.0 were presented and discussed—with special attention paid to applications of intelligent systems, methods and tools in production engineering, maintenance, logistics, quality management, information systems, and product development. The volume is divided into two parts: 1. Intelligent Systems in Production Engineering 2. Intelligent Systems in Maintenance This book is an excellent reference resource for scientists in the field of manufacturing engineering and for top managers in production enterprises.

A Comprehensive Guide to Strategies, Practices and Benchmarking

Selected Papers from the 20th International Conference on Reliability and Statistics in Transportation and Communication, RelStat2020, 14-17 October 2020, Riga, Latvia

Proceedings of ICCEMME 2021

Advanced Manufacturing and Automation VIII

17th Conference, AITM 2019, and 14th Conference, ISM 2019, Held as Part of FedCSIS, Leipzig, Germany, September 1-4, 2019, Extended and Revised Selected Papers

18th International Conference

This proceeding is a compilation of selected papers from the 8th International Workshop of Advanced Manufacturing and Automation (IWAMA 2018), held in Changzhou, China on September 25 - 26, 2018. Most of the topics are focusing on novel techniques for manufacturing and automation in Industry 4.0 and smart factory. These contributions are vital for maintaining and improving economic development and quality of life. The proceeding will assist academic researchers and industrial engineers to implement the concepts and theories of Industry 4.0 in industrial practice, in order to effectively respond to the challenges posed by the 4th industrial revolution and smart factory.

Introducing a groundbreaking companion book to a bestsellingreliability text Reliability is one of the most important characteristicsdefining the quality of a product or system, both for themanufacturer and the purchaser. One achieves high reliabilitythrough careful monitoring of design, materials and other input,production, quality assurance efforts, ongoing maintenance, and avariety of related decisions and activities. All of these factorsmust be considered in determining the costs of production,purchase, and ownership of a product. Case Studies in Reliability and Maintenance servesas a valuable addition to the current literature on the subject ofreliability by bridging the gap between theory and application.Conceived during the preparation of the editors' earlier work,Reliability: Modeling, Prediction, and Optimization (Wiley, 2000), this new volume features twenty-six actual case studies written bytop experts in their fields, each illustrating exactly howreliability models are applied. A valuable companion book to Reliability: Modeling, Prediction, and Optimization, or any other textbook on thesubject, the book features: Case studies from fields such as aerospace, automotive, mining,electronics, power plants, dikes, computer software, weapons,photocopiers, industrial furnaces, granite building cladding,chemistry, and aircraft engines A logical organization according to the life cycle of a productor system A unified format of discussion enhanced by tools, techniques,and models for drawing one's own conclusions Pertinent exercises for reinforcement of ideas Of equal value to both students of reliability theory as well asprofessionals in industry, Case Studies in Reliability andMaintenance should be required reading for anyone seekingto understand how reliability and maintenance issues can beaddressed and resolved in the real world.

This book introduces readers to essential strategies, practices, and benchmarking for asset maintenance in operations intensive industries. Drawing on a case study from the oil and gas sector, it offers a methodology and practical solutions to help maintenance practitioners select and formulate an asset maintenance strategy, and to establish best maintenance practices at an organizational level using the frameworks developed here. It is intended for industry practitioners, young maintenance professionals, and students of engineering management who aspire to a career in operations intensive industries.

The scientific theme of the book concerns " Manufacturing as a Service (MaaS) " which is developed in a layered cloud networked manufacturing perspective, from the shop floor resource sharing model to the virtual enterprise collaborative model, by distributing the cost of the manufacturing infrastructure - equipment, software, maintenance, networking - across all customers. MaaS is approached in terms of new models of service-oriented, knowledge-based manufacturing systems optimized and reality-aware, that deliver value to customer and manufacturer via Big data analytics, Internet of Things communications, Machine learning and Digital twins embedded in Cyber-Physical System frameworks. From product design to after-sales services, MaaS relies on the servitization of manufacturing operations such as: Design as a Service, Predict as a Service or Maintain as a service. The general scope of the book is to foster innovation in smart and sustainable manufacturing and logistics systems and in this context to promote concepts, methods and solutions for the digital transformation of manufacturing through service orientation in holonic and agent-based control with distributed intelligence. The book ' s readership is comprised by researchers and engineers working in the manufacturing value chain area who develop and use digital control solutions in the ' Industry of the Future ' vision. The book also addresses to master and Ph.D. students enrolled in Engineering Sciences programs.

Industrial Engineering, Management Science and Applications 2015

Smart Applications and Data Analysis

Industry 4.0 to Industry 5.0 Advances

Distributed Computing and Artificial Intelligence

First IFIP TC 5 Advanced Production Management Systems Conference (APMS ' 2006), Wrocław, Poland, September 18-20, 2006

Proceedings of the Fourth World Congress on Engineering Asset Management (WCEAM) 2009

In the modern world, solid and liquid waste deposits are mounting due to increasing populations and wealth. Businesses are therefore being put under pressure to pay attention to the environmental and resource consequences of the products they produce and the services they deliver. The Circular Economy and Its Implications on Sustainability and the Green Supply Chain is a collection of innovative research on methods of extending biological cycles found in nature to technological cycles where goods, when disposed properly, are converted into new products in an environmentally efficient way. It examines current research on how to deal with the waste resulting from human activities, the relationship between environmental and human health, and international legislation on waste management. This book is ideally designed for economists, managers, practitioners, academicians, researchers, and students.

As the age of Big Data emerges, it becomes necessary to take the five dimensions of Big Data- volume, variety, velocity, volatility, and veracity- and focus these dimensions towards one critical emphasis - value. The Encyclopedia of Business Analytics and Optimization confronts the challenges of information retrieval in the age of Big Data by exploring recent advances in the areas of knowledge management, data visualization, interdisciplinary communication, and others. Through its critical approach and practical application, this book will be a must-have reference for any professional, leader, analyst, or manager interested in making the most of the knowledge resources at their disposal.

This proceedings book presents research papers discussing the latest developments and findings in the fields of mining, machinery, automation and environmental protection. It includes contributions from authors from over 20 countries, with backgrounds in computer science, mining engineering, technology and management, and hailing from the government, industry and academia. It is of interest to scientists, engineers, consultants and government staff who are responsible for the development and implementation of innovative approaches, techniques and technologies in

the mineral industries. Covering the latest advances in fundamental research, it also appeals to academic researchers.

Phase 1 of the EPSRC SUPERGEN Wind programme began in March 2006 and work continued under Phase 2 until March 2014. The strategic aim was to re-establish a strong research community in wind energy technologies, across the UK ' s leading academic and industrial research organisations. UK Wind Energy Technologies gives a comprehensive overview of the range of wind energy research undertaken in the UK under Phases 1 & 2 to achieve this goal. Specific topics covered in the book include: wind resource assessment, turbine array layout, environmental interactions, control of turbines, drive train reliability and condition monitoring, turbine array electrical connection, power transmission to grid, assessment of operations and maintenance strategies, and the analysis of turbine foundations and structures. Since the completion of Phase 2 the Supergen Wind consortium partners have formed a networking Hub, which is now the principal national coordinating body for academic research into wind energy in the UK. This book will be of interest to researchers and engineers from industry and academia and also provides workers from other countries with an overview of the range of activity within the UK resulting from the SUPERGEN Wind programme to date.

Intelligent Systems in Production Engineering and Maintenance – ISPEM 2017

Architectures, Methodologies, and Use-cases

Proceedings of the International Symposium for Production Research 2018

Digital Maintenance Management

Trends in Data Engineering Methods for Intelligent Systems

BDMS, SeCoP, BDQM, GDMA, and AIDE, Jeju, South Korea, September 24 – 27, 2020, Proceedings

This volume provides a complete record of presentations made at Industrial Engineering, Management Science and Applications 2015 (ICIMSA 2015), and provides the reader with a snapshot of current knowledge and state-of-the-art results in industrial engineering, management science and applications. The goal of ICIMSA is to provide an excellent international forum for researchers and practitioners from both academia and industry to share cutting-edge developments in the field and to exchange and distribute the latest research and theories from the international community. The conference is held every year, making it an ideal platform for people to share their views and experiences in industrial engineering, management science and applications related fields.

Technological advancements in recent years have led to significant developments within a variety of business applications. In particular, data-driven research provides ample opportunity for enterprise growth, if utilized efficiently. Supply Chain Management in the Big Data Era is an authoritative reference source for the latest scholarly material on the implementation of big data analytics for improved operations and supply chain processes. Highlighting emerging strategies from different industry perspectives, this book is ideally designed for managers, professionals, practitioners, and students interested in the most recent research on supply chain innovations.

This book addresses the steps needed to monitor health assessment systems and the anticipation of their failures: choice and location of sensors, data acquisition and processing, health assessment and prediction of the duration of residual useful life. The digital revolution and mechatronics foreshadowed the advent of the 4.0 industry where equipment has the ability to communicate. The ubiquity of sensors (300,000 sensors in the new generations of aircraft) produces a flood of data requiring us to give meaning to information and leads to the need for efficient processing and a relevant interpretation. The process of traceability and capitalization of data is a key element in the context of the evolution of the maintenance towards predictive strategies.

This book presents the outcome of the European project "SERENA", involving fourteen partners as international academics, technological companies, and industrial factories, addressing the design and development of a plug-n-play end-to-end cloud architecture, and enabling predictive maintenance of industrial equipment to be easily exploitable by small and medium manufacturing companies with a very limited data analytics experience. Perspectives and new opportunities to address open issues on predictive maintenance conclude the book with some interesting suggestions of future research directions to continue the growth of the manufacturing intelligence.

Asset Maintenance Management in Industry

Quality and Reliability Management and Its Applications

Proceedings of the 27th International Symposium on Mine Planning and Equipment Selection - MPES 2018

COMADEM 2019

A Data Driven Framework for Condition Based Maintenance Strategy and An Empirical Study on Predictive Maintenance

Industrial Engineering in the Digital Disruption Era

This book is the second volume in a set of books dealing with the evolution of technology, IT and organizational approaches and what this means for industrial equipment. The authors address this increasing complexity in two parts, focusing specifically on the field of Prognostics and Health Management (PHM). Having tackled the PHM cycle in the first volume, the purpose of this book is to tackle the other phases of PHM, including the traceability of data, information and knowledge, and the ability to make decisions accordingly. The book concludes with a summary analysis and perspectives regarding this emerging domain, since without traceability, knowledge and decision, any prediction of the health state of a system cannot be exploited.

This book gathers the most recent developments in fuzzy & intelligence systems and real complex systems presented at INFUS 2020, held in Istanbul on July 21-23, 2020. The INFUS conferences are a well-established international research forum to advance the foundations and applications of intelligent and fuzzy systems, computational intelligence, and soft computing, highlighting studies on fuzzy & intelligence systems and real complex systems at universities and international research institutions. Covering a range of topics, including the theory and applications of fuzzy set extensions such as intuitionistic fuzzy sets, hesitant fuzzy sets, spherical fuzzy sets, and fuzzy decision-making; machine learning; risk assessment; heuristics; and clustering, the book is a valuable resource for academics, M.Sc. and Ph.D. students, as well as managers and engineers in industry and the service sectors.

This second edition of An Introduction to Predictive Maintenance helps plant, process, maintenance and reliability managers and engineers to develop and implement a comprehensive maintenance management program, providing proven strategies for regularly monitoring critical process equipment and systems, predicting machine failures, and scheduling maintenance accordingly. Since the publication of the first edition in 1990, there have been many changes in both technology and methodology, including financial implications, the role of a maintenance organization, predictive maintenance techniques, various analyses, and maintenance of the program itself. This revision includes a complete update of the applicable chapters from the first edition as well as six additional chapters outlining the most recent information available. Having already been implemented and maintained successfully in hundreds of manufacturing and process plants worldwide, the practices detailed in this second edition of An Introduction to Predictive Maintenance will save plants and corporations, as well as U.S. industry as a whole, billions of dollars by minimizing unexpected equipment failures and its resultant high maintenance cost while increasing productivity. A comprehensive introduction to a system of monitoring critical industrial equipment Optimize the availability of process machinery and greatly reduce the cost of maintenance Provides the means to improve product quality, productivity and profitability of manufacturing and production plants

Business industries depend on advanced models and tools that provide an optimal and objective decision-making process, ultimately guaranteeing improved competitiveness, reducing risk, and eliminating uncertainty. Thanks in part to the digital era of the modern world, reducing these conditions has become much more manageable. Advanced Models and Tools for Effective Decision Making Under Uncertainty and Risk Contexts provides research exploring the theoretical and practical aspects of effective decision making based not only on mathematical techniques, but also on those technological tools that are available nowadays in the Fourth Industrial Revolution. Featuring coverage on a broad range of topics such as industrial informatics, knowledge management, and production planning, this book is ideally designed for decision makers, researchers, engineers, academicians, and students.

Supply Chain Management in the Big Data Era

Electronics in Advanced Research Industries

Database Systems for Advanced Applications. DASFAA 2020 International Workshops

From Prognostics and Health Systems Management to Predictive Maintenance 2

Proceedings of the First International Conference on Intelligent Systems in Production Engineering and Maintenance ISPEM 2017

Advanced Models and Tools for Effective Decision Making Under Uncertainty and Risk Contexts

Lean Manufacturing has proved to be one of the most successful and most powerful production business systems over the last decades. Its application enabled many companies to make a big leap towards better utilization of resources and thus provide better service to the customers through faster response, higher quality and lowered costs. Lean is often described as " eyes for flow and eyes for muda " philosophy. It simply means that value is created only when all the resources flow through the system. If the flow is stopped no value but only costs and time are added, which is muda (Jap. waste). Since the philosophy was born at the Toyota many solutions were tailored for the high volume environment. But in turbulent, fast-changing market environment and progressing globalization, customers tend to require more customization, lower volumes and higher variety at much less cost and of better quality. This calls for adaptation of existing lean techniques and exploration of the new waste-free solutions that go far beyond manufacturing. This book brings together the opinions of a number of leading academics and researchers from around the world responding to those emerging needs. They tried to find answer to the question how to move forward from " Spaghetti World " of supply, production, distribution, sales, administration, product development, logistics, accounting, etc. Through individual chapters in this book authors present their views, approaches, concepts and developed tools. The reader will learn the key issues currently being addressed in production management research and practice throughout the world.

This book provides succinct guidance on the management of the maintenance of construction plant, bringing together information which is only currently found dispersed amongst other publications. Topics covered include: costs of maintenance; condition-based monitoring techniques; root cause failure analysis; health and safety; electronic documentation and record keeping; and directions for future research. Where appropriate, standard charts and reports - which can be adapted and used by the reader - are included. Chapters include: introduction to construction plant; the need to maintain construction plant and equipment; the costs of plant ownership; predictive and fixed time to maintenance strategies; condition based predictive maintenance techniques; CBPM: uses oil analysis; proactive maintenance; safety training and plant operators' procedures; record keeping and the application of information; technology.

This book gathers select contributions from the 32nd International Congress and Exhibition on Condition Monitoring and Diagnostic Engineering Management (COMADEM 2019), held at the University of Huddersfield, UK in September 2019, and jointly organized by the University of Huddersfield and COMADEM International. The aim of the Congress was to promote awareness of the rapidly emerging interdisciplinary areas of condition monitoring and diagnostic engineering management. The contents discuss the latest tools and techniques in the multidisciplinary field of performance monitoring, root cause failure modes analysis, failure diagnosis, prognosis, and proactive management of industrial systems. There is a special focus on digitally enabled asset management and covers several topics such as condition monitoring, maintenance, structural health monitoring, non-destructive testing and other allied areas. Bringing together expert contributions from academia and industry, this book will be a valuable resource for those interested in latest condition monitoring and asset management techniques.

Devising optimal strategy for maintaining industrial plant can be a difficult task of daunting complexity. This book aims to provide the plant engineer with a comprehensive approach for tackling this problem, that is, for deciding maintenance objectives, formulating equipment life plans and plant maintenance schedules, and others.

Lean Business Systems and Beyond

Modelling and Analysis

UK Wind Energy Technologies

Advances in Asset Management and Condition Monitoring

Information Technology for Management: Current Research and Future Directions

Intelligent and Fuzzy Techniques: Smart and Innovative Solutions