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Integrated Computer Technologies in Mechanical Engineering - 2023 Walter de Gruyter GmbH & Co KG

The book introduces the concept of cloud manufacturing and describes the cloud service technology system behind it. The authors discuss key technologies of manufacturing cloud service management, including service construction, evaluation and composition, and scheduling. With abundant case studies, the book is an essential reference for researchers and engineers in manufacturing and information management.

Design and Optimization of Mechanical Engineering Products CRC Press

Explores how we judge engineering education in order to effectively redesign courses and programs that will prepare new engineers for various professional and academic careers Shows how present approaches to assessment were shaped and what the future holds Analyzes the validity of teaching and judging engineering education Shows the integral role that assessment plays in curriculum design and implementation Examines the sociotechnical system 's impact on engineering curricula

Issues in Mechanical

Engineering: 2011 Edition John Wiley & Sons

Multi-objective optimization (MO) is a fast-developing field in computational intelligence research. Giving decision makers more options to choose from using some post-analysis preference information, there are a number of competitive MO techniques with an increasingly large number of MO real-world applications. Multi-Objective Optimization in Computational Intelligence: Theory and Practice explores the theoretical, as well as empirical, performance of MOs on a wide range of optimization issues including combinatorial,

real-valued, dynamic, and noisy problems. This book provides scholars, academics, and practitioners with a fundamental, comprehensive collection of research on multi-objective optimization techniques, applications, and practices.

Catalogue for the Academic Year SAE International

This book is organized in 2 volumes and 6 parts. Part I is Big Data Analytics, which is about new advances of analysis, statistics, coordination and data mining of big data; Part II is Information Systems Management, which is about the development of big data information system or cloud platform. Part III is Computing Methodology with Big Data, which is about the improvements of traditional computation technologies in the background of big data; Part IV is Uncertainty Decision Making, which is about the decision making methods with various uncertain information, such as fuzzy, random, rough, gray, unascertained. Part V is Intelligence Algorithm. Part VI is Data Security, which is a particularly important aspect in the modern management environment.

The Assessment of Learning in Engineering Education IGI Global

Fundamentals of Integrated Vehicle Realization is a unique and solid contribution to the subject of product development, centered on the automotive industry. Automotive manufacturers and suppliers are under pressure to transform themselves and deliver a higher level of product refinement coupled with more functionality. This could lead to the sprouting of organizational structures not in alignment with the required product development phases. Consequently, many product development initiatives may be cancelled or dropped at later stages despite all the efforts and financial investments. Therefore, it is vital that organizational unity be always intact during any transformation. A highly effective organization should always act as one cohesive entity dedicated to serving the customer with creative aptitude, integrative skills, analytical thinking, and synergistic management. Written by Dr. Mohamed El-Sayed, director of the School of Engineering Technology at Eastern Michigan University,

Fundamentals of Integrated Vehicle Realization addresses an essential need for deep knowledge in the realm of vehicle development process, from idealization to market launch. The book covers realization process phases, process and vehicle characteristics and attributes, front-end innovation, virtual and physical realization, among other topics.

Handbook of Research on Artificial Intelligence Techniques and Algorithms World Scientific

This book covers 3D printing activities by fused deposition modeling process. The two introductory chapters discuss the principle, types of machines and raw materials, process parameters, defects, design variations and simulation methods. Six chapters are devoted to experimental work related to process improvement, mechanical testing and characterization of the process, followed by three chapters on post-processing of 3D printed components and two chapters addressing sustainability concerns. Seven chapters discuss various applications including composites, external medical devices, drug delivery system, orthotic inserts, watertight components and 4D printing using FDM process. Finally, six chapters are dedicated to the study on modeling and optimization of FDM process using computational models, evolutionary algorithms, machine learning, metaheuristic approaches and optimization of layout and tool path.

Higher Education for Sustainable Development Goals Springer

When in October 1996 in Cholula (Puebla, Mexico), I took charge of organizing the scientific program of the next Ibero-American Congress on Artificial Intelligence (IBERAMIA 98) I bet on a couple of ideas. First, I adopted the spirit of the Portuguese adventurers to get the Sixth Congress on a truly international track. In order to attain this aim I needed to convince everybody that the Ibero-American AI community had improved over the years and attained a very good level in what concerns individuals. Second, I brought my colleagues beside me so that we were able to collect sufficient excellent papers without destroying the pioneering spirit of those who first inaugurated the Congress. Getting together to find out what is in progress in the vast region in which Latin languages

(Portuguese and Spanish) are spoken, attracting others to exchange ideas with us, and by doing this advancing AI in general, is a risky undertaking. This book is the result, and it sets a new standard to be discussed by all of us. IBERAMIA was established in 1988 (Barcelona) by three Ibero-American AI Associations (AEPIA from Spain, SMIA from Mexico, and APPIA from Portugal), after a first meeting in Morelia (Mexico) in 1986 of SMIA and AEPIA.

Evolutionary Algorithms for Solving Multi-Objective Problems Springer

The book substantially offers the latest progresses about the important topics of the "Mechanical Engineering" to readers. It includes twenty-eight excellent studies prepared using state-of-art methodologies by professional researchers from different countries. The sections in the book comprise of the following titles: power transmission system, manufacturing processes and system analysis, thermo-fluid systems, simulations and computer applications, and new approaches in mechanical engineering education and organization systems.

Issues in Mechanical Engineering: 2013 Edition National Academies Press

Optimierung mit mehreren Zielen, evolutionäre Algorithmen: Dieses Buch wendet sich vorrangig an Einsteiger, denn es werden kaum Vorkenntnisse vorausgesetzt. Geboten werden alle notwendigen Grundlagen, um die Theorie auf Probleme der Ingenieurtechnik, der Vorhersage und der Planung anzuwenden. Der Autor gibt auch einen Ausblick auf Forschungsaufgaben der Zukunft.

Strengthening U.S. Engineering Through International Cooperation Springer Science & Business Media

This proceedings consists of 162 selected papers presented at the 2nd Annual International Conference on Mechanics and Mechanical Engineering (MME2015), which was successfully held in Chengdu, China between December 25-27, 2015. MME2015 is one of the key international conferences in the fields of mechanics, mechanical engineering. It offers a great opportunity to bring together researchers and scholars around the globe to deliver the latest innovative research and the most recent developments in the field of Mechanics and Mechanical Engineering. MME2015 received over 400 submissions from about 600 laboratories, colleges and famous institutes. All the submissions have undergone double blind reviewed to assure the quality, reliability and validity of the results presented. These papers are arranged into 6 main chapters according to their research fields. These are: 1) Applied

Mechanics 2) Mechanical Engineering and Manufacturing Technology 3) Material Science and Material Engineering 4) Automation and Control Engineering 5) Electrical Engineering 6) System Modelling and Simulation. This proceedings will be invaluable to academics and professionals interested in Mechanics and Mechanical Engineering.

Soft Computing Techniques and Applications in Mechanical Engineering IGI Global

The success of any product sold to consumers is based, largely, on the longevity of the product. This concept can be extended by various methods of improvement including optimizing the initial creation structures which can lead to a more desired product and extend the product's time on the market. Design and Optimization of Mechanical Engineering Products is an essential research source that explores the structure and processes used in creating goods and the methods by which these goods are improved in order to continue competitiveness in the consumer market. Featuring coverage on a broad range of topics including modeling and simulation, new product development, and multi-criteria decision making, this publication is targeted toward students, practitioners, researchers, engineers, and academicians.

Materials, Design, and Manufacturing for Sustainable Environment IGI Global

This book looks to cover the issues related to advances in higher education for sustainable development goals. Nowadays, sustainable development is an important concept in higher education. One of the most widely recognized definitions is based in the Brundtland report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The three core pillars of sustainable development are environment, society and economy. Currently, higher education in the context of sustainable development goals (SDGs) is a great challenge. The information about higher education for sustainable development presents great interest to improve communication between professors, researchers and students in universities, institutes, colleges, etc. This research book covers all aspects of higher education for sustainable development goals, namely, no poverty, zero hunger, good health and wellbeing, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation, and infrastructure,

reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions and partnerships.

Logistics 4.0 Springer Science & Business Media

This is an open access book. Faculty of Mechanics is organizing International Conference of Mechanical Engineering, ICOME 2022 that will be held on 18th–20th of May 2022. The aim of the conference is to provide opportunities for the participants to: Gain insight into the cutting-edge technologies and ideas for future developments; Update their skills and knowledge by attending focused technical sessions; Network with potential new partners, clients and suppliers; View the latest technology products and services in the technical exhibition. The conference aims to bring together scientists, engineers, manufacturers and users from all over the world to discuss common theoretical and practical problems, describe scientific applications and explore avenues for the future researches in the area of Mechanical engineering.

Global Perspective for Competitive Enterprise, Economy and Ecology Springer Nature

For decades, optimization methods such as Fuzzy Logic, Artificial Neural Networks, Firefly, Simulated annealing, and Tabu search, have been capable of handling and tackling a wide range of real-world application problems in society and nature. Analysts have turned to these problem-solving techniques in the event during natural disasters and chaotic systems research. The Handbook of Research on Artificial Intelligence Techniques and Algorithms highlights the cutting edge developments in this promising research area. This premier reference work applies Meta-heuristics Optimization (MO) Techniques to real world problems in a variety of fields including business, logistics, computer science, engineering, and government. This work is particularly relevant to researchers, scientists, decision-makers, managers, and practitioners.

Multi-Objective Optimization in Computational Intelligence: Theory and Practice Springer Nature

Industrial revolutions have impacted both, manufacturing and service. From the steam engine to digital automated production, the industrial revolutions have conducted significant changes in operations and supply chain management (SCM) processes. Swift changes in manufacturing and service systems have led to phenomenal improvements in productivity. The fast-paced environment brings new challenges and opportunities for the companies that are associated with the adaptation to the new concepts such as Internet of Things (IoT) and Cyber Physical

Systems, artificial intelligence (AI), robotics, cyber security, data analytics, block chain and cloud technology. These emerging technologies facilitated and expedited the birth of Logistics 4.0. Industrial Revolution 4.0 initiatives in SCM has attracted stakeholders' attentions due to its ability to empower using a set of technologies together that helps to execute more efficient production and distribution systems. This initiative has been called Logistics 4.0 of the fourth Industrial Revolution in SCM due to its high potential. Connecting entities, machines, physical items and enterprise resources to each other by using sensors, devices and the internet along the supply chains are the main attributes of Logistics 4.0. IoT enables customers to make more suitable and valuable decisions due to the data-driven structure of the Industry 4.0 paradigm. Besides that, the system's ability of gathering and analyzing information about the environment at any given time and adapting itself to the rapid changes add significant value to the SCM processes. In this peer-reviewed book, experts from all over the world, in the field present a conceptual framework for Logistics 4.0 and provide examples for usage of Industry 4.0 tools in SCM. This book is a work that will be beneficial for both practitioners and students and academicians, as it covers the theoretical framework, on the one hand, and includes examples of practice and real world.

Mechanical Engineering Springer Nature Global Perspective for Competitive Enterprise, Economy and Ecology addresses the general theme of the Concurrent Engineering (CE) 2009 Conference – the need for global advancements in the areas of competitive enterprise, economy and ecology. The proceedings contain 84 papers, which vary from the theoretical and conceptual to the practical and industrial. The content of this volume reflects the genuine variety of issues related to current CE methods and phenomena. Global Perspective for Competitive Enterprise, Economy and Ecology will therefore enable researchers, industry practitioners, postgraduate students and advanced undergraduates to build their own view of the inherent problems and methods in CE.

Fundamentals of Integrated Vehicle Realization BoD – Books on Demand

What are the random-like phenomena that can be found everywhere in real-life world? When carrying out a random sampling survey on the traffic situation, we often obtain some descriptive results such as approximately expedite, a little crowded and so on, therefore, the average level should be regarded as the random fuzzy phenomenon, which is one of the random-like phenomena. Decision makers usually need to make the decision for these problems with random-like phenomena. Which model should be constructed for them? How should we handle these models to find the optimal strategy? How can we apply these models to solve real-life problems with random-like phenomena? In order to answer these questions, this book provides an up-to-date methodology system 5MRP for random-like multiple objective decision making, which includes problem system with random-like phenomena, model system with random-like coefficients, research system with random-like

uncertain methods. Some practical applications are also provided to illustrate the effectiveness of the proposed methodology system. Researchers, practitioners and students in systems science, economics, mathematics, information, engineering and MS/OR will get a lot of useful references from this research monograph.

Handbook of Research on Artificial Immune Systems and Natural Computing: Applying Complex Adaptive Technologies Academic Press

Vehicle Power Management addresses the challenge of improving vehicle fuel economy and reducing emissions without sacrificing vehicle performance, reliability and durability. It opens with the definition, objectives, and current research issues of vehicle power management, before moving on to a detailed introduction to the modeling of vehicle devices and components involved in the vehicle power management system, which has been proven to be the most cost-effective and efficient method for initial-phase vehicle research and design. Specific vehicle power management algorithms and strategies, including the analytical approach, optimal control, intelligent system approaches and wavelet technology, are derived and analyzed for realistic applications. **Vehicle Power Management** also gives a detailed description of several key technologies in the design phases of hybrid electric vehicles containing battery management systems, component optimization, hardware-in-the-loop and software-in-the-loop. **Vehicle Power Management** provides graduate and upper level undergraduate students, engineers, and researchers in both academia and the automotive industry, with a clear understanding of the concepts, methodologies, and prospects of vehicle power management.

Fused Deposition Modeling Based 3D Printing CRC Press

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<http://www.ScholarlyEditions.com/>.

Mechanical Engineering and Technology Springer

"This book explores emerging technologies and best practices designed to effectively address concerns inherent in properly optimizing advanced systems, demonstrating applications in areas such as bio-engineering, space exploration, industrial informatics, information security, and nuclear and renewable energies"--Provided by publisher.