Journal Of Intelligent Manufacturing

This book provides a comprehensive exchange of information on current developments in the management of manufacturing systems and Industry 4.0. The book's contributions establish channels of communication and disseminate knowledge among professionals working in manufacturing and related institutions. It features submissions from experts, researchers, academicians and practitioners in relevant fields, who share their knowledge from the field of management of manufacturing systems. The book's main theme is Management of Manufacturing Systems with support for Industry 4.0, Logistics and Intelligent Manufacturing Systems and Applications, Cooperation management and its effective applications. Topics include Logistics, RFID Applications, Industrial and Smart Logistics, Intelligent Manufacturing Systems and Applications, New Materials and Smart Technologies for Industry 4.0, Enterprise Information Systems, Innovation and Knowledge Management, and Sequencing solutions for Lean Manufacturing.

This book shows how Industry 4.0 is a strategic approach for integrating advanced control systems with Internet technology enabling communication between people, products and complex systems. It includes processes such as machining features, machining knowledge, execution control, operation planning, machine tool selection and cutting tool. This book focuses on different articles related to advanced technologies, and their integration to foster Industry 4.0, being useful for researchers as well as industrialists to refer and utilize the information in production control.

The introduction of artificial intelligence, neural networks, and fuzzy logic into industry has given a new perspective to manufacturing processes in the U.S. and abroad. To help readers keep pace, this book addresses topics of intelligent manufacturing from a variety of theoretical, empirical, design, and implementation perspectives.

Issues in Artificial Intelligence, Robotics and Machine Learning: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Expert Systems. The editors have built Issues in Artificial Intelligence, Robotics and Machine Learning: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Expert Systems in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Artificial Intelligence, Robotics and Machine Learning: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Quality control is changing along with the manufacturing environment. A series of revolutionary changes will occur in management contents, methods, capabilities, and real-time effectiveness and efficiency of management. As an essential factor in intelligent manufacturing, quality control systems require real and comprehensive innovation. Focused on new trends and developments in

quality control from a worldwide perspective, this book presents the latest information on novel approaches in quality control. Its thirteen chapters cover three topics: intelligent manufacturing, robust design, and control charts.

This book gathers selected papers presented at the Second International Conference on Intelligent Manufacturing and Automation (ICIMA 2020), which was jointly organized by the Departments of Mechanical Engineering and Production Engineering at Dwarkadas J. Sanghvi College of Engineering (DJSCE), Mumbai, and by the Indian Society of Manufacturing Engineers (ISME). Covering a range of topics in intelligent manufacturing, automation, advanced materials and design, it focuses on the latest advances in e.g. CAD/CAM/CAE/CIM/FMS in manufacturing, artificial intelligence in manufacturing, IoT in manufacturing, product design & development, DFM/DFA/FMEA, MEMS & nanotechnology, rapid prototyping, computational techniques, nano- & micro-machining, sustainable manufacturing, industrial engineering, manufacturing process management, modelling & optimization techniques, CRM, MRP & ERP, green, lean & agile manufacturing, logistics & supply chain management, quality assurance & environmental protection, advanced material processing & characterization of composite & smart materials. The book is intended as a reference guide for future researchers, and as a valuable resource for students in graduate and doctoral programmes.

This book provides a thorough overview of the applications of 3D printing technologies to ubiquitous manufacturing (UM). UM itself represents an application of ubiquitous computing in the manufacturing sector, and this book reveals how it offers convenient, on-demand network access to a shared pool of configurable manufacturing resources, including software tools, equipment, and capabilities. Given its scope, the book will be of considerable interest to researchers in the areas of manufacturing, mechanical engineering, operations management, production control, ubiquitous computing, and sensor technologies, as well as practicing managers and engineers.

Manufacturing, like other industries, is rising to the challenges imposed by aggressive consumer demands and the need for cost-effective processing that delivers quality in the fastest possible time. Fierce competition means that keeping abreast of new developments and applications in technology is essential if companies are to meet demands profitably and keep ahead of competitors. This book investigates the design and management of digital manufacturing and assembly systems for an efficient, flexible, and modular production of customized products using the I40 (industry 4.0)-enabling technologies. This book will also provide case studies covering modeling, simulation, and optimization. eBook includes color figures. Discusses how the advancement of data communication and storage through the Internet of Things (IoT) opens the possibilities of connecting sensors, robots, and devices Sheds light on how the human role in industry is decreasing due to the development of connected manufacturing floors, allowing them to take more control over the manufacturing processes, decisions, and even maintenance Covers the benefits from exploiting digital manufacturing, manufacturing enterprises, and what they expect to achieve Explains the important roles that modeling, simulation, and optimization play Investigates the design and management of digital manufacturing and assembly systems for an efficient, flexible, and modular production of customized products exploiting the I40 (industry 4.0)-enabling technologies

Direct Engineering (DE) is the creation of a product development cycle into a single, unified process. The design process in most industries is an evolutionary one (i.e., incremental changes to some existing design). DE is a manufacturing process that seeks to improve the design processes by providing complete archival documentation of existing designs. It uses three-dimensional geometric models with integrated manufacturing information throughout the design process. DE reduces the design cycle, and the variety and number of engineering changes. This process decreases the design cycle time, increases productivity, and provides a higher quality product. The required technologies and methodologies that will support the development of the DE environment are: (1) product representation using feature-based modeling; (2) knowledge-based applications that will support the entire product development cycle; (3) an engineering environment implemented around distributed computing and object-oriented systems; (4) direct manufacturing techniques using rapid prototyping. Direct Engineering: Toward Intelligent Manufacturing addresses the following recent topics related to the development, implementation, and integration of the DE environment: (1) the current scope of the research in intelligent manufacturing; (2) the results of the technologies and tools developed for integrated product and process designs, and (3) examination of the methodologies and algorithms used for the implementation of direct engineering.

This book introduces the concept of sensing, smart and sustainable systems (S3 systems) to support the design and redesign of products, services, business and manufacturing processes, manufacturing systems, and enterprises. The concept of S3 systems theory is introduced and explained in detail to support designers and engineers in their development task. This approach is embraced in the implementation of emergent Information and communication technologies and artificial intelligence techniques. The text helps the reader to understand the relationship between intelligent manufacturing, S3 systems and Industry 4.0. It presents a review of current approaches to design and development of technology-based products. Finally, it enlarges on the sensing, smart and sustainable systems theory to give examples of S3 systems as case studies.

"This book presents the most innovative systematic and practical facets of fuzzy computing technologies to students, scholars, and academicians, as well as practitioners, engineers, and professionals"--

This book is a collection of articles aimed at finding new ways of manufacturing systems developments. The articles included in this volume comprise of current and new directions of manufacturing systems which I believe can lead to the development of more comprehensive and efficient future manufacturing systems. People from diverse background like academia, industry, research and others can take advantage of this volume and can shape future directions of manufacturing systems.

Special Issue: Intelligent Manufacturing System and Security and AssuranceSpecial Issue: Intelligent Manufacturing Systems: Vision for the

FutureSpecial Issue on Ubiquitous Computing, Data Management and Intelligent ManufacturingControl of Manufacturing SystemsSpecial IssueIntelligent Heuristics for the Design of Manufacturing SystemsSpecial IssueFuturistic Trends in Intelligent ManufacturingOptimization and Intelligence in ManufacturingSpringer Nature

"This book analyzes the need for a holistic approach for the construction and engineering of cities and societies"--Provided by publisher.

The manufacturing industry has been optimized in recent years due to the rise of new technologies. These advances have paved the way for the development of intelligent vehicles. Intelligent Vehicles and Materials Transportation in the Manufacturing Sector: Emerging Research and Opportunities is a pivotal source of scholarly research on the various aspects of manufacturing vehicles with intelligent technology components. Including a range of perspectives on topics such as material handling, automated guided vehicles, and industrial robots, this book is ideally designed for engineers, academics, professionals, and practitioners actively involved in the manufacturing sector.

Condition modelling and control is a technique used to enable decision-making in manufacturing processes of interest to researchers and practising engineering. Condition Monitoring and Control for Intelligent Manufacturing will be bought by researchers and graduate students in manufacturing and control and engineering, as well as practising engineers in industries such as automotive and packaging manufacturing.

Defining structure and functions of knowledge-based systems, this book presents hardware and software components of flexible machining, flexible assembly and computer-integrated manufacturing systems. Discussed are such areas as process planning, group technology and lay-out design.

Intelligent Manufacturing is a new disciplinary field which applies computer science, artificial intelligence, mechanical engineering and systems science to industrial manufacturing processes. This book presents a new integration architecture for implementing real-time distributed intelligent manufacturing systems.

This book consists of select proceedings of the International Conference on Functional Material, Manufacturing and Performances (ICFMMP) 2019, and presents latest research on using the combined intelligence of people, processes, and machines to impact the overall economics of manufacturing. The book focuses on optimizing manufacturing resources, improving business value and safety, and reducing waste – both on the floor and in back-office operations. It highlights the applications of the latest manufacturing execution system (MES), intelligent devices, machine-to-machine communication, and data analysis for the production lines and facilities. This book will be useful to manufacturers of finished goods and of sub-assemblies in the automotive, agriculture, and construction equipment sector. It will also provide solutions to make production strategies exceptional and can be a useful reference for beginners, researchers, and professionals interested in intelligent manufacturing technologies.