

# Cloud Manufacturing Distributed Computing Technologies For Global And Sustainable Manufacturing Springer Series In Advanced Manufacturing

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**Distributed and Cloud Computing** - Kai Hwang 2013-12-18  
Distributed and Cloud Computing: From Parallel Processing to the Internet of Things offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include: facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online

[Pervasive Cloud Computing Technologies: Future Outlooks and Interdisciplinary Perspectives](#) - Grandinetti, Lucio 2013-10-31  
Technology trends may come and go, but cloud computing technologies have been gaining consideration in the commercial world due to its ability to provide on-demand access to resources, control the software environment, and supplement existing systems. Pervasive Cloud Computing Technologies: Future Outlooks and Interdisciplinary Perspectives explores the latest innovations with cloud computing and the impact of these new models and technologies. This book will present case studies and research on the future of cloud computing technologies and its ability to increase connectivity of various entities of the world. It is an essential resource for technology practitioners, engineers, managers, and academics aiming to gain the knowledge of these novel and pervasive technologies.

[Network and Traffic Engineering in Emerging Distributed Computing Applications](#) - Abawajy, Jemal H. 2012-07-31

"This book focuses on network management and traffic engineering for Internet and distributed computing technologies, as well as present emerging technology trends and advanced platforms"--Provided by publisher.

**Parallel Computing Technologies** - Victor Malyshev 2013-09-24  
This book constitutes the proceedings of the 12th International Conference on Parallel Computing Technologies, PaCT 2013, held in St. Petersburg, Russia, during September 30-October 4, 2013. The 41 full papers presented together with 2 invited papers were carefully reviewed and selected from 83 submissions. The papers are organized in topical sections on all technological aspects of the applications of parallel computer systems High level parallel programming languages and

systems, methods and tools for parallel solution of large-scale problems, languages, environments and software tools supporting parallel processing, operating systems, scheduling, mapping, load balancing, general architectural concepts, cellular automata, performance measurement and analysis tools, teaching parallel processing, software for grid and cloud computing, scalable computing, fragmentation and aggregation of algorithms and programs as well as programs assembling and reuse.

[Pervasive Cloud Computing Technologies](#) - Lucio Grandinetti 2013  
Technology trends may come and go, but cloud computing technologies have been gaining consideration in the commercial world due to its ability to provide on-demand access to resources, control the software environment, and supplement existing systems. Pervasive Cloud Computing Technologies: Future Outlooks and Interdisciplinary Perspectives explores the latest innovations with cloud computing and the impact of these new models and technologies. This book will present case studies and research on the future of cloud computing technologies and its ability to increase connectivity of various entities of the world. It is an essential resource for technology practitioners, engineers, managers, and academics aiming to gain the knowledge of these novel and pervasive technologies.

[Autonomic Computing in Cloud Resource Management in Industry 4.0](#) - Tanupriya Choudhury 2021-09-05

This book describes the next generation of industry—Industry 4.0—and how it holds the promise of increased flexibility in manufacturing, along with automation, better quality, and improved productivity. The authors discuss how it thus enables companies to cope with the challenges of producing increasingly individualized products with a short lead-time to market and higher quality. The authors posit that intelligent cloud services and resource sharing play an important role in Industry 4.0 anticipated Fourth Industrial Revolution. This book serves the different issues and challenges in cloud resource management CRM techniques with proper propped solution for IT organizations. The book features chapters based on the characteristics of autonomic computing with its applicability in CRM. Each chapter features the techniques and analysis of each mechanism to make better resource management in cloud.

**Proceedings of the 4th International Conference on the Industry 4.0 Model for Advanced Manufacturing** - Laszlo Monostori 2019-04-30

This book gathers the proceedings of the 4th International Conference on the Industry 4.0 Model for Advanced Manufacturing (AMP 2019), held in Belgrade, Serbia, on 3–6 June 2019. The event marks the latest in a series of high-level conferences that bring together experts from academia and industry to exchange knowledge, ideas, experiences, research findings, and information in the field of manufacturing. The book addresses a wide range of topics, including: design of smart and intelligent products, developments in CAD/CAM technologies, rapid prototyping and reverse engineering, multistage manufacturing processes, manufacturing automation in the Industry 4.0 model, cloud-based products, and cyber-physical and reconfigurable manufacturing systems. By providing updates on key issues and highlighting recent advances in manufacturing engineering and technologies, the book supports the transfer of vital knowledge to the next generation of academics and practitioners. Further, it will appeal to anyone working or conducting research in this rapidly evolving field.

[Proceedings of the 2012 International Conference on Cybernetics and Informatics](#) - Shaobo Zhong 2013-08-23

Proceedings of the International Conference on Cybernetics and

Informatics (ICCI 2012) covers the hybridization in control, computer, information, communications and applications. ICCI 2012 held on September 21-23, 2012, in Chongqing, China, is organized by Chongqing Normal University, Chongqing University, Nanyang Technological University, Shanghai Jiao Tong University, Hunan Institute of Engineering, Beijing University, and sponsored by National Natural Science Foundation of China (NSFC). This two volume publication includes selected papers from the ICCI 2012. Covering the latest research advances in the area of computer, informatics, cybernetics and applications, which mainly includes the computer, information, control, communications technologies and applications.

The 19th International Conference on Industrial Engineering and Engineering Management - Ershi Qi 2013-06-03

The International Conference on Industrial Engineering and Engineering Management is sponsored by the Chinese Industrial Engineering Institution, CMES, which is the only national-level academic society for Industrial Engineering. The conference is held annually as the major event in this arena. Being the largest and the most authoritative international academic conference held in China, it provides an academic platform for experts and entrepreneurs in the areas of international industrial engineering and management to exchange their research findings. Many experts in various fields from China and around the world gather together at the conference to review, exchange, summarize and promote their achievements in the fields of industrial engineering and engineering management. For example, some experts pay special attention to the current state of the application of related techniques in China as well as their future prospects, such as green product design, quality control and management, supply chain and logistics management to address the need for, amongst other things low-carbon, energy-saving and emission-reduction. They also offer opinions on the outlook for the development of related techniques. The proceedings offers impressive methods and concrete applications for experts from colleges and universities, research institutions and enterprises who are engaged in theoretical research into industrial engineering and engineering management and its applications. As all the papers are of great value from both an academic and a practical point of view, they also provide research data for international scholars who are investigating Chinese style enterprises and engineering management.

**Foundations & Principles of Distributed Manufacturing** - Hermann Kühnle 2015-04-16

The book presents a coherent description of distributed manufacturing, providing a solid base for further research on the subject as well as smart implementations in companies. It provides a guide for those researching and working in a range of fields, such as smart manufacturing, cloud computing, RFID tracking, distributed automation, cyber physical production and global design anywhere, manufacture anywhere solutions. Foundations & Principles of Distributed Manufacturing anticipates future advances in the fields of embedded systems, the Internet of Things and cyber physical systems, outlining how adopting these innovations could rapidly bring about improvements in key performance indicators, which could in turn generate competition pressure by rendering successful business models obsolete. In laying the groundwork for powerful theoretical models, high standards for the homogeneity and soundness of the suggested setups are applied. The book especially elaborates on the upcoming competition in online manufacturing operations and respective control procedures. By outlining encapsulation and evolving decision-making principles, Foundations & Principles of Distributed Manufacturing fully conceptualizes the view of manufacturing networks as sets of loosely coupled interacting smart factory objects. Moreover, the book provides concrete approaches to a number of future fields, where distributed manufacturing might be applied. Both researchers and professionals will profit from the authors' broad experience in Distributed Manufacturing and Fractal Enterprise implementations, where they initiated and completed a number of successful research projects: within the global Intelligent Manufacturing Systems (IMS) scheme, within the European Research Area frameworks as well as national contexts, and both in industry and at leading research institutions. This background ensures well-founded theory on one hand and valuable practical results on the other in a fascinating area that is still under intensive research. Readers will acquire essential insights as well as useful guidance for categorizing and specifying extended distributed manufacturing solutions and their professional implementations.

Applying Integration Techniques and Methods in Distributed Systems and Technologies - Kecskemeti, Gabor 2019-04-12

Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. Applying Integration Techniques and Methods in Distributed Systems is a critical scholarly publication that defines the current state of distributed systems, determines further goals, and presents architectures and service frameworks to achieve highly integrated distributed systems and presents solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting topics such as multimedia, programming languages, and smart environments, this book is ideal for system administrators, integrators, designers, developers, researchers, and academicians.

**Advances in Sustainable and Competitive Manufacturing Systems** - Américo Azevedo 2013-06-25

The proceedings includes the set of revised papers from the 23rd International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2013). This conference aims to provide an international forum for the exchange of leading edge scientific knowledge and industrial experience regarding the development and integration of the various aspects of Flexible Automation and Intelligent Manufacturing Systems covering the complete life-cycle of a company's Products and Processes. Contents will include topics such as: Product, Process and Factory Integrated Design, Manufacturing Technology and Intelligent Systems, Manufacturing Operations Management and Optimization and Manufacturing Networks and MicroFactories.

**Blockchain and AI Technology in the Industrial Internet of Things** - Pani, Subhendu Kumar 2021-01-08

Blockchain and artificial intelligence (AI) in industrial internet of things is an emerging field of research at the intersection of information science, computer science, and electronics engineering. The radical digitization of industry coupled with the explosion of the internet of things (IoT) has set up a paradigm shift for industrial and manufacturing companies. There exists a need for a comprehensive collection of original research of the best performing methods and state-of-the-art approaches in this area of blockchain, AI, and the industrial internet of things in this new era for industrial and manufacturing companies. Blockchain and AI Technology in the Industrial Internet of Things compares different approaches to the industrial internet of things and explores the direct impact blockchain and AI technology have on the betterment of the human life. The chapters provide the latest advances in the field and provide insights and concerns on the concept and growth of the industrial internet of things. While including research on security and privacy, supply chain management systems, performance analysis, and a variety of industries, this book is ideal for professionals, researchers, managers, technologists, security analysts, executives, practitioners, researchers, academicians, and students looking for advanced research and information on the newest technologies, advances, and approaches for blockchain and AI in the industrial internet of things.

*Handbook of Cloud Computing* - Borko Furht 2010-09-11

Cloud computing has become a significant technology trend. Experts believe cloud computing is currently reshaping information technology and the IT marketplace. The advantages of using cloud computing include cost savings, speed to market, access to greater computing resources, high availability, and scalability. Handbook of Cloud Computing includes contributions from world experts in the field of cloud computing from academia, research laboratories and private industry. This book presents the systems, tools, and services of the leading providers of cloud computing; including Google, Yahoo, Amazon, IBM, and Microsoft. The basic concepts of cloud computing and cloud computing applications are also introduced. Current and future technologies applied in cloud computing are also discussed. Case studies, examples, and exercises are provided throughout. Handbook of Cloud Computing is intended for advanced-level students and researchers in computer science and electrical engineering as a reference book. This handbook is also beneficial to computer and system infrastructure designers, developers, business managers, entrepreneurs and investors within the cloud computing related industry.

**Ambient Assisted Living** - Reiner Wichert 2016-01-16

In this book, leading authors in the field discuss developments of Ambient Assisted Living. The contributions have been chosen and invited at the 8th AAL Congress, Frankfurt/M. The meeting presents new

technological developments which support the autonomy and independence of individuals with special needs. The 8th AAL Congress focusses its attention on technical assistance systems and their applications in homecare, health and care.

**Service management and scheduling in cloud manufacturing** - Yongkui Liu 2022-08-01

The book establishes the concept of cloud manufacturing and describes the technological system behind it. The authors discuss key technologies such as resources sensation and access, service-oriented architecture, cloud service management and evaluation, and interface visualization. With abundant case studies, the book is an essential reference for researchers and engineers in manufacturing and information management.

*Moving Integrated Product Development to Service Clouds in the Global Economy* - J. Stjepandić 2014-09-23

The theory of concurrent engineering is based on the concept that the different phases of a product lifecycle should be conducted concurrently and initiated as early as possible within the product creation process. Concurrent engineering is important in many industries, including automotive, aerospace, shipbuilding, consumer goods and environmental engineering, as well as in the development of new services and service support. This book presents the proceedings of the 21st ISPE Inc. International Conference on Concurrent Engineering, held at Beijing Jiaotong University, China, in September 2014. It is the first volume of a new book series: 'Advances in Transdisciplinary Engineering'. The title of the CE2014 conference is: 'Moving Integrated Product Development to Service Clouds in the Global Economy', which reflects the variety of processes and methods which influence modern product creation. After an initial first section presenting the keynote papers, the remainder of the book is divided into 11 further sections with peer-reviewed papers: product lifecycle management (PLM); knowledge-based engineering (KBE); cloud approaches; 3-D printing applications; design methods; educational methods and achievements; simulation of complex systems; systems engineering; services as innovation and science; sustainability; and recent research on open innovation in concurrent engineering. The book will be of interest to CE researchers, practitioners from industry and public bodies, and educators alike.

**Robot Oriented Design** - Thomas Bock 2015-05-05

The Cambridge Handbooks on Construction Robotics series focuses on the implementation of automation and robot technology to renew the construction industry and to arrest its declining productivity. The series is intended to give professionals, researchers, lecturers, and students basic conceptual and technical skills and implementation strategies to manage, research, or teach the implementation of advanced automation and robot-technology-based processes and technologies in construction. Currently, the implementation of modern developments in product structures (modularity and design for manufacturing), organizational strategies (just in time, just in sequence, and pulling production), and informational aspects (computer-aided design/manufacturing or computer-integrated manufacturing) are lagging because of the lack of modern integrated machine technology in construction. The Cambridge Handbooks on Construction Robotics books discuss progress in robot systems theory and demonstrate their integration using real systematic applications and projections for off-site as well as on-site building production. Robot-Oriented Design and Management introduces the design, innovation, and management methodologies that are key to the realization and implementation of the advanced concepts and technologies presented in the subsequent volumes. This book describes the efficient deployment of advanced construction and building technology. It is concerned with the coadaptation of construction products, processes, organization, and management, and with automated/robotic technology, so that the implementation of modern technology becomes easier and more efficient. It is also concerned with technology and innovation management methodologies and the generation of life cycle-oriented views related to the use of advanced technologies in construction.

**Cloud Manufacturing** - Weidong Li 2013-03-01

Global networks, which are the primary pillars of the modern manufacturing industry and supply chains, can only cope with the new challenges, requirements and demands when supported by new computing and Internet-based technologies. Cloud Manufacturing: Distributed Computing Technologies for Global and Sustainable Manufacturing introduces a new paradigm for scalable service-oriented sustainable and globally distributed manufacturing systems. The eleven chapters in this book provide an updated overview of the latest

technological development and applications in relevant research areas. Following an introduction to the essential features of Cloud Computing, chapters cover a range of methods and applications such as the factors that actually affect adoption of the Cloud Computing technology in manufacturing companies and new geometrical simplification method to stream 3-Dimensional design and manufacturing data via the Internet. This is further supported case studies and real life data for Waste Electrical and Electronic Equipment (WEEE) remanufacturing. This compilation of up to date research and literature can be used as a textbook or reference for mechanical, manufacturing, and computer engineering graduate students and researchers for efficient utilization, deployment and development of distributed and Cloud manufacturing systems, services and applications.

**Cybersecurity for Industry 4.0** - Lane Thames 2017-04-03

This book introduces readers to cybersecurity and its impact on the realization of the Industry 4.0 vision. It covers the technological foundations of cybersecurity within the scope of the Industry 4.0 landscape and details the existing cybersecurity threats faced by Industry 4.0, as well as state-of-the-art solutions with regard to both academic research and practical implementations. Industry 4.0 and its associated technologies, such as the Industrial Internet of Things and cloud-based design and manufacturing systems are examined, along with their disruptive innovations. Further, the book analyzes how these phenomena capitalize on the economies of scale provided by the Internet. The book offers a valuable resource for practicing engineers and decision makers in industry, as well as researchers in the design and manufacturing communities and all those interested in Industry 4.0 and cybersecurity.

**Handbook of Research on Scalable Computing Technologies** - Li, Kuan-Ching 2009-07-31

"This book presents, discusses, shares ideas, results and experiences on the recent important advances and future challenges on enabling technologies for achieving higher performance"--Provided by publisher. **Global Virtual Enterprises in Cloud Computing Environments** - Rao, N. Raghavendra 2018-12-28

Modern businesses are on the lookout for ventures that boost their profits and marketability. Certain new and innovative technological advances can help enterprises accomplish their ambitious goals while providing detailed information to assess all aspects of the business. Global Virtual Enterprises in Cloud Computing Environments is a collection of innovative studies on business processes, procedures, methods, strategy, management thinking, and utilization of technology in cloud computing environments. While highlighting topics including international business strategy, virtual reality, and intellectual capital, this book is ideally designed for corporate executives, research scholars, and students pursuing courses in the areas of management and big data applications seeking current research on effective open innovation strategies in global business.

**Service management and scheduling in cloud manufacturing** - Yongkui Liu 2022-08-01

The book establishes the concept of cloud manufacturing and describes the technological system behind it. The authors discuss key technologies such as resources sensation and access, service-oriented architecture, cloud service management and evaluation, and interface visualization. With abundant case studies, the book is an essential reference for researchers and engineers in manufacturing and information management.

*Materials, Manufacturing Technology, Electronics and Information Science* - Xiaolong Li 2016-04-25

This proceedings consists of fifty one selected papers presented at the 2015 International Workshop on Materials, Manufacturing Technology, Electronics and Information Science (MMTEI2015), which was successfully held in Wuhan, China during October 9-11, 2015. MMTEI2015 covered a wide range of fundamental studies, technical innovations and industrial applications in the 4 areas, namely Material Science and Application, Mechanical Engineering and Mechatronics, Electronics Engineering and Microelectronics, and Information Science. This workshop aims to provide a forum for scientists, scholars, engineers and students from universities all around the world and the industry to present ongoing research activities, and hence to foster research relations between universities and the industry. All accepted papers were subjected to a strict peer-review process by 2-3 expert referees. Contents: Material Science and Application, Mechanical Engineering and Mechatronics, Electronics Engineering and Microelectronics, Information Science. Readership: Researchers and

professionals in electrical and electronics engineering, material engineering and computer networks.

#### **Digitalized and Harmonized Industrial Production Systems -**

Armando Walter Colombo 2019-10-28

On the one side, Industrial competitiveness today means shorter product lifecycles, increased product variety, and shorter times to market and customized tangible products and services. To face these challenges, the manufacturing industry is forced to move from traditional management, control, and automation approaches towards industrial cyber-physical systems. On the other side, several emergent engineering approaches and related Information-Communication-Control-Technologies, such as Multi-Agent-Systems, Service-Oriented Architecture, Plug-and-Produce Systems, Cloud and Fog Technologies, Big Data and Analytics, among others, have been researched during the last years. The confluence of those results with the latest developments in Industrial Digitalization, Systems-of-Cyber-Physical-Systems Engineering, Internet-of-Things, Internet-of-Services, and Industry 4.0 is opening a new broad spectrum of innovation possibilities. The PERFoRM (Production-harmonizEd-Reconfiguration of Flexible Robots and Machinery) approach is one of them. It teaches the reader what it means when production machines and systems are digitalized and migrated into Industrial Cyber-Physical Systems and what happens when they are networked and start collaborating with each other and with the human, using the internet. After a Technology Trend Screening and beyond a comprehensive state-of-the-art analysis about Industrial Digitalization and Industry 4.0-compliant solutions, the book introduces methods, architectures, and technologies applicable in real industrial use cases, explained for a broad audience of researchers, practitioners, and industrialists.

#### **Cloud Manufacturing -** Weidong Li 2015-04-04

Global networks, which are the primary pillars of the modern manufacturing industry and supply chains, can only cope with the new challenges, requirements and demands when supported by new computing and Internet-based technologies. Cloud Manufacturing: Distributed Computing Technologies for Global and Sustainable Manufacturing introduces a new paradigm for scalable service-oriented sustainable and globally distributed manufacturing systems. The eleven chapters in this book provide an updated overview of the latest technological development and applications in relevant research areas. Following an introduction to the essential features of Cloud Computing, chapters cover a range of methods and applications such as the factors that actually affect adoption of the Cloud Computing technology in manufacturing companies and new geometrical simplification method to stream 3-Dimensional design and manufacturing data via the Internet. This is further supported case studies and real life data for Waste Electrical and Electronic Equipment (WEEE) remanufacturing. This compilation of up to date research and literature can be used as a textbook or reference for mechanical, manufacturing, and computer engineering graduate students and researchers for efficient utilization, deployment and development of distributed and Cloud manufacturing systems, services and applications.

#### **Designing Distributed Systems -** Brendan Burns 2018-02-20

Without established design patterns to guide them, developers have had to build distributed systems from scratch, and most of these systems are very unique indeed. Today, the increasing use of containers has paved the way for core distributed system patterns and reusable containerized components. This practical guide presents a collection of repeatable, generic patterns to help make the development of reliable distributed systems far more approachable and efficient. Author Brendan Burns—Director of Engineering at Microsoft Azure—demonstrates how you can adapt existing software design patterns for designing and building reliable distributed applications. Systems engineers and application developers will learn how these long-established patterns provide a common language and framework for dramatically increasing the quality of your system. Understand how patterns and reusable components enable the rapid development of reliable distributed systems Use the side-car, adapter, and ambassador patterns to split your application into a group of containers on a single machine Explore loosely coupled multi-node distributed patterns for replication, scaling, and communication between the components Learn distributed system patterns for large-scale batch data processing covering work-queues, event-based processing, and coordinated workflows

#### **Cloud-Based Cyber-Physical Systems in Manufacturing -** Lihui Wang 2017-11-16

This book presents state-of-the-art research, challenges and solutions in the area of cloud-based cyber-physical systems (CPS) used in

manufacturing. It provides a comprehensive review of the literature and an in-depth treatment of novel methodologies, algorithms and systems in the area of architecture design, cyber security, process planning, monitoring and control. The book features detailed descriptions of how to derive solutions in a cloud environment where physical machines can be supported by cyber decision systems when engaged in real operations. It presents a range of novel ideas and is characterized by a balanced approach in terms of scope vs. depth and theory vs. applications. It also takes into account the need to present intellectual challenges while appealing to a broad readership, including academic researchers, practicing engineers and managers, and graduate students. Dedicated to the topic of cloud-based CPS and its practical applications in manufacturing, this book benefits readers from all manufacturing sectors, from system design to lifecycle engineering and from process planning to machine control. It also helps readers to understand the present challenges and future research directions towards factories of the future, helping them to position themselves strategically for career development.

#### **Advances in Production Management Systems: Innovative Production Management Towards Sustainable Growth -** Shigeki Umeda 2015-08-17

The two volumes IFIP AICT 459 and 460 constitute the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2015, held in Tokyo, Japan, in September 2015. The 163 revised full papers were carefully reviewed and selected from 185 submissions. They are organized in the following topical sections: collaborative networks; globalization and production management; knowledge based production management; project management, engineering management, and quality management; sustainability and production management; co-creating sustainable business processes and ecosystems; open cloud computing architecture for smart manufacturing and cyber physical production systems; the practitioner's view on "innovative production management towards sustainable growth"; the role of additive manufacturing in value chain reconfiguration and sustainability; operations management in engineer-to-order manufacturing; lean production; sustainable system design for green products; cloud-based manufacturing; ontology-aided production - towards open and knowledge-driven planning and control; product-service lifecycle management: knowledge-driven innovation and social implications; and service engineering.

#### **Internet and Distributed Computing Advancements: Theoretical Frameworks and Practical Applications -** Abawajy, Jemal H.

2012-02-29

"This book is a vital compendium of chapters on the latest research within the field of distributed computing, capturing trends in the design and development of Internet and distributed computing systems that leverage autonomic principles and techniques"--Provided by publisher.

#### **Transdisciplinary Lifecycle Analysis of Systems -** R. Curran 2015-07-15

Concurrent Engineering (CE) is based on the premise that different phases of a product's lifecycle should be conducted concurrently and initiated as early as possible within the Product Creation Process (PCP). It has become the substantive basic methodology in many industries, including automotive, aerospace, machinery, shipbuilding, consumer goods, process industry and environmental engineering. CE aims to increase the efficiency of the PCP and reduce errors in later phases while incorporating considerations for full lifecycle and through-life operations. This book presents the proceedings of the 22nd ISPE Inc. (International Society for Productivity Enhancement) International Conference on Concurrent Engineering (CE2015) entitled 'Transdisciplinary Lifecycle Analysis of Systems', and held in Delft, the Netherlands, in July 2015. It is the second in the series 'Advances in Transdisciplinary Engineering'. The book includes 63 peer reviewed papers and 2 keynote speeches arranged in 10 sections: keynote speeches; systems engineering; customization and variability management; production oriented design, maintenance and repair; design methods and knowledge-based engineering; multidisciplinary product management; sustainable product development; service oriented design; product lifecycle management; and trends in CE. Containing papers ranging from the theoretical and conceptual to the highly pragmatic, this book will be of interest to all engineering professionals and practitioners; researchers, designers and educators.

#### **Service Oriented, Holonic and Multi-agent Manufacturing Systems for Industry of the Future -** Theodor Borangiu 2019-08-02

This proceedings book presents selected peer-reviewed papers from the 9th International Workshop on 'Service Oriented, Holonic and Multi-

agent Manufacturing Systems for the Industry of the Future' organized by Universitat Politècnica de València, Spain, and held on October 3-4, 2019. The SOHOMA 2019 Workshop aimed to foster innovation in the digital transformation of manufacturing and logistics by promoting new concepts and methods and solutions through service orientation in holonic and agent-based control with distributed intelligence. The book provides insights into the theme of the SOHOMA'19 Workshop - 'Smart anything everywhere - the vertical and horizontal manufacturing integration, ' addressing 'Industry of the Future' (IoF), a term used to describe the 4th industrial revolution initiated by a new generation of adaptive, fully connected, analytical and highly efficient robotized manufacturing systems. This global IoF model describes a new stage of manufacturing, that is fully automatized and uses advanced information, communication and control technologies such as industrial IoT, cyber-physical production systems, cloud manufacturing, resource virtualization, product intelligence, and digital twin, edge and fog computing. It presents the IoF interconnection of distributed manufacturing entities using a 'system-of-systems' approach, discussing new types of highly interconnected and self-organizing production resources in the entire value chain; and new types of intelligent decision-making support based on from real-time production data collected from resources, products and machine learning processing. This book is intended for researchers and engineers working in the manufacturing value chain, and specialists developing computer-based control and robotics solutions for the 'Industry of the Future'. It is also a valuable resource for master's and Ph.D. students in engineering sciences programs.

**20th ISPE International Conference on Concurrent Engineering - C. Bil 2013-09-12**

As a concept, Concurrent Engineering (CE) initiates processes with the goal of improving product quality, production efficiency and overall customer satisfaction. Services are becoming increasingly important to the economy, with more than 60% of the GDP in Japan, the USA, Germany and Russia deriving from service-based activities. The definition of a product has evolved from the manufacturing and supplying of goods only, to providing goods with added value, to eventually promoting a complete service business solution, with support from introduction into service and from operations to decommissioning. This book presents the proceedings of the 20th ISPE International Conference on Concurrent Engineering, held in Melbourne, Australia, in September 2013. The conference had as its theme Product and Service Engineering in a Dynamic World, and the papers explore research results, new concepts and insights covering a number of topics, including service engineering, cloud computing and digital manufacturing, knowledge-based engineering and sustainability in concurrent engineering.

**Experiments and Simulations in Advanced Manufacturing - Panagiotis Kyratsis 2021-04-29**

This book presents the latest advances in manufacturing from both the experimental and simulation point of view. It covers most aspects of manufacturing engineering, i.e. theoretical, analytical, computational and experimental studies. Experimental studies on manufacturing processes require funds, time and expensive facilities, while numerical simulations and mathematical models can improve the efficiency of using the research results. It also provides high level of prediction accuracy and the basis for novel research directions.

**8th International Conference on Engineering, Project, and Product Management (EPPM 2017) - Sümer Şahin 2018-03-14**

This book presents the proceedings of the 8th International Conference on Engineering, Project, and Product Management (EPPM 2017), highlighting the importance of engineering, project and product management in a region of the world that is in need of transformation and rebuilding. The aim of the conference was to bring together the greatest minds in engineering and management and offer them a platform to share their innovative, and potentially transformational, findings. The proceedings are comprehensive, multidisciplinary, and advanced in their approach with an appeal not only for academicians and university students but also for professionals in various engineering fields, especially construction, manufacturing and production.

**Business Transformation and Sustainability through Cloud System Implementation - Soliman, Fawzy 2014-09-30**

Sustaining a competitive edge in today's business world requires innovative approaches to product, service, and management systems design and performance. Advances in computing technologies have presented managers with additional challenges as well as further

opportunities to enhance their business models. Business Transformation and Sustainability through Cloud System Implementation presents novel computing technologies designed for use in business and corporate environments, enabling managers and associates to make the most of the technologies at their disposal. This premier reference work seeks to alert firm management professionals and researchers to the potential risks and benefits associated with emerging technologies and guide firms on the proper selection, maintenance, and use of Web-based computing systems.

**Service Orientation in Holonic and Multi-agent Manufacturing - Theodor Borangiu 2016-10-06**

This volume gathers the peer reviewed papers presented at the 4th edition of the International Workshop "Service Orientation in Holonic and Multi-agent Manufacturing - SOHOMA'14" organized and hosted on November 5-6, 2014 by the University of Lorraine, France in collaboration with the CIMR Research Centre of the University Politehnica of Bucharest and the TEMPO Laboratory of the University of Valenciennes and Hainaut-Cambrésis. The book is structured in six parts, each one covering a specific research line which represents a trend in future manufacturing: (1) Holonic and Agent-based Industrial Automation Systems; (2) Service-oriented Management and Control of Manufacturing Systems; (3) Distributed Modelling for Safety and Security in Industrial Systems; (4) Complexity, Big Data and Virtualization in Computing-oriented Manufacturing; (5) Adaptive, Bio-inspired and Self-organizing Multi-Agent Systems for Manufacturing and (6) Physical Internet Simulation, Modelling and Control. There is a clear orientation of the SOHOMA'14 workshop towards complexity, which is a common view of all six parts. There is need for a framework allowing the development of manufacturing cyber physical systems including capabilities for complex event processing and data analytics which are expected to move the manufacturing domain closer towards cloud manufacturing within contextual enterprises. Recent advances in sensor, communication and intelligent computing technologies made possible the Internet connectivity of the physical world: the Physical Internet, where not only documents and images are created, shared, or modified in the cyberspace, but also the physical resources and products interact over Internet and make decisions based on shared communication.

**Manufacturing in Digital Industries - J. Paulo Davim 2020-07-06**

Digital Industry can provide the framework for examining the challenges of future production technology. This book describes some of the various aspects that can, and may, influence future manufacturing. Computational intelligence techniques, cyber-physical systems, virtual and cloud-based manufacturing and man-machine interaction are studied and some of the most recent research completed by international experts in industry and academia is considered. Case studies provide practical solutions.

**Cloud Computing Technologies for Green Enterprises - Munir, Kashif 2017-09-13**

Emerging developments in cloud computing have created novel opportunities and applications for businesses. These innovations not only have organizational benefits, but can be advantageous for green enterprises as well. Cloud Computing Technologies for Green Enterprises is a pivotal reference source for the latest scholarly research on the advancements, benefits, and challenges of cloud computing for green enterprise endeavors. Highlighting pertinent topics such as resource allocation, energy efficiency, and mobile computing, this book is a premier resource for academics, researchers, students, professionals, and managers interested in novel trends in cloud computing applications.

**Proceedings of the FISITA 2012 World Automotive Congress - SAE-China 2012-10-26**

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 focus on solutions for sustainable mobility in all areas of passenger car, truck and bus transportation. Volume 11: Advanced Vehicle Manufacturing Technology focuses on: •Applications of Aluminum, Magnesium and Zink Alloys , Composites •Advanced Body Manufacturing Technology •Body Corrosion Protection Technology •Welding, Joining and Fastening •Casting Technology •Stamping Technology •Paints, Polymers and Coatings •Exterior Body Panels •Advanced Process Management 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.