

## Wincc Oa Manual

This book provides a comprehensive overview of the fundamental security of Industrial Control Systems (ICSs), including Supervisory Control and Data Acquisition (SCADA) systems and touching on cyber-physical systems in general. Careful attention is given to providing the reader with clear and comprehensive background and reference material for each topic pertinent to ICS security. This book offers answers to such questions as: Which specific operating and security issues may lead to a loss of efficiency and operation? What methods can be used to monitor and protect my system? How can I design my system to reduce threats? This book offers chapters on ICS cyber threats, attacks, metrics, risk, situational awareness, intrusion detection, and security testing, providing an advantageous reference set for current system owners who wish to securely configure and operate their ICSs. This book is appropriate for non-specialists as well. Tutorial information is provided in two initial chapters and in the beginnings of other chapters as needed. The book concludes with advanced topics on ICS governance, responses to attacks on ICS, and

future security of the Internet of Things.

Hardly any other discovery of the nineteenth century did have such an impact on science and technology as Wilhelm Conrad Röntgen's seminal find of the X-rays. X-ray tubes soon made their way as excellent instruments for numerous applications in medicine, biology, materials science and testing, chemistry and public security.

Developing new radiation sources with higher brilliance and much extended spectral range resulted in stunning developments like the electron synchrotron and electron storage ring and the freeelectron laser. This handbook highlights these developments in fifty chapters. The reader is given not only an inside view of exciting science areas but also of design concepts for the most advanced light sources. The theory of synchrotron radiation and of the freeelectron laser, design examples and the technology basis are presented. The handbook presents advanced concepts like seeding and harmonic generation, the booming field of Terahertz radiation sources and upcoming brilliant light sources driven by laser-plasma accelerators. The applications of the most advanced light sources and the advent of nanobeams and fully coherent x-rays allow experiments from which scientists in the

past could not even dream. Examples are the diffraction with nanometer resolution, imaging with a full 3D reconstruction of the object from a diffraction pattern, measuring the disorder in liquids with high spatial and temporal resolution. The 20th century was dedicated to the development and improvement of synchrotron light sources with an ever ongoing increase of brilliance. With ultrahigh brilliance sources, the 21st century will be the century of x-ray lasers and their applications. Thus, we are already close to the dream of condensed matter and biophysics: imaging single (macro)molecules and measuring their dynamics on the femtosecond timescale to produce movies with atomic resolution.

B Factories are particle colliders at which specific subatomic particles - B mesons - are produced abundantly. The purpose is to study the properties of their decays in great detail in order to shed light on a mystery of eminently larger scale: why do we live in a universe composed of anti-matter? This book introduces readers to the physics laws of the CP asymmetry, touching on experimental requirements needed to perform such measurements at the subatomic level, and illustrating the main findings of the contemporary B Factories.

For beginning and intermediate LabVIEW programmers, this introductory guide assumes no prior knowledge of LabVIEW. There are in-depth examples in every chapter, and all the answers and source code is provided on the accompanying CD-ROM.

Effective Console Operator HMI Design 2013

A Comprehensive Guide to Designing, Implementing and Maintaining Effective HMIs for Industrial Plant Operations

International Conference, CESM 2011, Wuhan, China, June 18-19, 2011. Proceedings, Part II

Foundations of the Research and Innovation Ecosystem

Definitions and Concepts

Synchrotron Light Sources and Free-Electron Lasers

**Identify and Solve Key Electric-Power-Quality Problems and Ensure Reliable Power Delivery to All Customers** Power Quality in Electrical Systems equips you with the latest engineering techniques for providing power quality to all customers, and includes vital information on manufacturing, data processing, and healthcare facilities. Based on an IEEE Professional Education course, the book is a practice-oriented engineering tutorial for solving key electric-power-quality problems. This skills-building resource is designed to improve job performance by taking you step-by-step through voltage distortion...harmonic current sources...power capacitors...corrections for power-quality

problems ...switched-mode power supplies...uninterruptible power supplies...standby power systems...power-quality measurements...and more. Filled with 100 detailed illustrations, Power Quality in Electrical Systems enables you to: Spot and correct key electric-power-quality problems Achieve full compliance with IEEE standards Examine switched-mode power supplies, rectifiers, and other loads that produce interference Catch up on the latest standby power systems Get vital information on power quality for manufacturing, data processing, and healthcare facilities Explore power-quality case studies with problems and worked solutions Inside This Comprehensive Power-Quality Guide • Power-quality standards • Voltage distortion • Harmonics • Harmonic current sources • Power harmonic filters • Switched-mode power supplies • Corrections for power-quality problems • Uninterruptible power supplies • Power-quality events • Standby power systems • Power-quality measurements

Featuring contributions from worldwide leaders in the field, the carefully crafted Electric Power Generation, Transmission, and Distribution, Third Edition (part of the five-volume set, The Electric Power Engineering Handbook) provides convenient access to detailed information on a diverse array of power engineering topics. Updates to nearly every chapter keep this book at the forefront of developments in modern power systems, reflecting international standards, practices, and technologies. Topics covered include: Electric power generation: nonconventional methods Electric power generation: conventional methods Transmission system Distribution systems Electric power utilization Power quality L.L. Grigsby, a respected and accomplished authority in power engineering, and section editors Saifur Rahman, Rama Ramakumar, George Karady, Bill Kersting, Andrew

Hanson, and Mark Halpin present substantially new and revised material, giving readers up-to-date information on core areas. These include advanced energy technologies, distributed utilities, load characterization and modeling, and power quality issues such as power system harmonics, voltage sags, and power quality monitoring. With six new and 16 fully revised chapters, the book supplies a high level of detail and, more importantly, a tutorial style of writing and use of photographs and graphics to help the reader understand the material. New chapters cover: Water Transmission Line Reliability Methods High Voltage Direct Current Transmission System Advanced Technology High-Temperature Conduction Distribution Short-Circuit Protection Linear Electric Motors A volume in the Electric Power Engineering Handbook, Third Edition. Other volumes in the set: K12648 Power Systems, Third Edition (ISBN: 9781439856338) K13917 Power System Stability and Control, Third Edition (ISBN: 9781439883204) K12650 Electric Power Substations Engineering, Third Edition (ISBN: 9781439856383) K12643 Electric Power Transformer Engineering, Third Edition (ISBN: 9781439856291)

Enhancing Situation Awareness (SA) is a major design goal for projects in many fields, including aviation, ground transportation, air traffic control, nuclear power, and medicine, but little information exists in an integral format to support this goal. Designing for Situation Awareness helps designers understand how people acquire and interpret information in complex settings and recognize the factors that undermine this process. Designing to support operator SA reduces the incidence of human error, which has been found to occur largely due to failures in SA. Whereas many previous human factors efforts have focused on design at the perceptual and surface feature

level, SA-oriented design focuses on the operator's information needs and cognitive processes as they juggle to integrate information from many sources and achieve multiple competing goals. Thus it addresses design from a system's perspective. By applying theoretical and empirical information on SA to the system design process, human factors practitioners can create designs to support SA across a wide variety of domains and design issues. This book serves as a helpful reference to that end. The main subjects in this book relate to software development using cutting-edge technologies for real-world industrial automation applications. A hands-on approach to applying a wide variety of emerging technologies to modern industrial practice problems. Explains key concepts through clear examples, ranging from simple to more complex problem domains, and all based on real-world industrial problems. A useful reference book for practicing engineers as well as an updated resource book for researchers.

Electric Power Generation, Transmission, and Distribution

From the Dawn of Computing to Digital Consciousness

The PERFoRM Approach

Proceedings of the 7th International Conference on Industrial Engineering (ICIE 2021)

Critical Infrastructure Protection

A Risk-based Approach to Compliant GxP Computerized Systems

**This book presents cutting-edge emerging technologies and approaches in the areas of service-oriented architectures, intelligent devices and cloud-based cyber-physical systems. It provides a clear**

**view on their applicability to the management and automation of manufacturing and process industries. It offers a holistic view of future industrial cyber-physical systems and their industrial usage and also depicts technologies and architectures as well as a migration approach and engineering tools based on these. By providing a careful balance between the theory and the practical aspects, this book has been authored by several experts from academia and industry, thereby offering a valuable understanding of the vision, the domain, the processes and the results of the research. It has several illustrations and tables to clearly exemplify the concepts and results examined in the text and these are supported by four real-life case-studies. We are witnessing rapid advances in the industrial automation, mainly driven by business needs towards agility and supported by new disruptive advances both on the software and hardware side, as well as the cross-fertilization of concepts and the amalgamation of information and communication technology-driven approaches in traditional industrial automation and control systems. This book is intended for technology managers, application designers, solution developers, engineers working in industry, as well as**

**researchers, undergraduate and graduate students of industrial automation, industrial informatics and production engineering. The computer unlike other inventions is universal; you can use a computer for many tasks: writing, composing music, designing buildings, creating movies, inhabiting virtual worlds, communicating... This popular science history isn't just about technology but introduces the pioneers: Babbage, Turing, Apple's Wozniak and Jobs, Bill Gates, Tim Berners-Lee, Mark Zuckerberg. This story is about people and the changes computers have caused. In the future ubiquitous computing, AI, quantum and molecular computing could even make us immortal. The computer has been a radical invention. In less than a single human life computers are transforming economies and societies like no human invention before. This open access book presents the foundations of the Big Data research and innovation ecosystem and the associated enablers that facilitate delivering value from data for business and society. It provides insights into the key elements for research and innovation, technical architectures, business models, skills, and best practices to support the creation of data-driven solutions and organizations. The**

**book is a compilation of selected high-quality chapters covering best practices, technologies, experiences, and practical recommendations on research and innovation for big data. The contributions are grouped into four parts:**

- Part I: Ecosystem Elements of Big Data Value focuses on establishing the big data value ecosystem using a holistic approach to make it attractive and valuable to all stakeholders.**
- Part II: Research and Innovation Elements of Big Data Value details the key technical and capability challenges to be addressed for delivering big data value.**
- Part III: Business, Policy, and Societal Elements of Big Data Value investigates the need to make more efficient use of big data and understanding that data is an asset that has significant potential for the economy and society.**
- Part IV: Emerging Elements of Big Data Value explores the critical elements to maximizing the future potential of big data value.**

**Overall, readers are provided with insights which can support them in creating data-driven solutions, organizations, and productive data ecosystems. The material represents the results of a collective effort undertaken by the European data community as part of the Big Data Value Public-Private Partnership (PPP) between the European**

**Commission and the Big Data Value Association (BDVA) to boost data-driven digital transformation.**

**This book constitutes the refereed proceedings of the 4th International Symposium on Ubiquitous Networking, UNet 2018, held in Hammamet, Morocco, in May 2018. The 35 full papers presented together with 5 short papers in this volume were carefully reviewed and selected from 87 submissions. The focus of UNet is on technical challenges and solutions related to such a widespread adoption of networking technologies, including broadband multimedia, machine-to-machine applications, Internet of things, security and privacy, data engineering, sensor networks and RFID technologies.**

**Pharmaceutical Quality by Design**

**More Food: Road to Survival**

**Report of the Secretary**

**ASM Consortium Guidelines**

**Super-calender**

**Technical Manual on Respiration Chamber Designs**

Second Edition of the ASM Consortium developed guidelines for planning, designing and implementing effective operator

displays.

Software Engineering for Resilient Systems7th International Workshop, SERENE 2015, Paris, France, September 7-8, 2015.

ProceedingsSpringer

This handbook offers comprehensive coverage of recent advancements in Big Data technologies and related paradigms. Chapters are authored by international leading experts in the field, and have been reviewed and revised for maximum reader value. The volume consists of twenty-five chapters organized into four main parts. Part one covers the fundamental concepts of Big Data technologies including data curation mechanisms, data models, storage models, programming models and programming platforms. It also dives into the details of implementing Big SQL query engines and big stream processing systems. Part Two focuses on the semantic aspects of Big Data management including data integration and exploratory ad hoc analysis in addition to structured querying and pattern matching techniques. Part Three presents a comprehensive overview of large scale graph

processing. It covers the most recent research in large scale graph processing platforms, introducing several scalable graph querying and mining mechanisms in domains such as social networks. Part Four details novel applications that have been made possible by the rapid emergence of Big Data technologies such as Internet-of-Things (IOT), Cognitive Computing and SCADA Systems. All parts of the book discuss open research problems, including potential opportunities, that have arisen from the rapid progress of Big Data technologies and the associated increasing requirements of application domains. Designed for researchers, IT professionals and graduate students, this book is a timely contribution to the growing Big Data field. Big Data has been recognized as one of leading emerging technologies that will have a major contribution and impact on the various fields of science and various aspect of the human society over the coming decades. Therefore, the content in this book will be an essential tool to help readers understand the development and future of the field.

More Food: Road to Survival is a comprehensive analysis of agricultural improvements which can be achieved through scientific methods. This reference book gives information about strategies for increasing plant productivity, comparisons of agricultural models, the role of epigenetic events on crop production, yield enhancing physiological events (photosynthesis, germination, seedling emergence, seed properties, etc.), tools enabling efficient exploration of genetic variability, domestication of new species, the detection or induction of drought resistance and apomixes and plant breeding enhancement (through molecularly assisted breeding, genetic engineering, genome editing and next generation sequencing). The book concludes with a case study for the improvement of small grain cereals. Readers will gain an understanding of the biotechnological tools and concepts central to sustainable agriculture More Food: Road to Survival is, therefore, an ideal reference for agriculture students and researchers as well as professionals involved sustainability studies.

Advanced Research on Computer Education, Simulation and Modeling

Handbook of Research on Cyber Crime and Information Privacy

Industrial Cloud-Based Cyber-Physical Systems

The High Performance HMI Handbook

4th International Symposium, UNet 2018, Hammamet, Tunisia,

May 2 - 5, 2018, Revised Selected Papers

Power Quality in Electrical Systems

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

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 user 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 to real industrial use cases, explained for a broad audience of researchers, practitioners, and industrialists.

The information infrastructure--comprising computers, embedded devices, networks, and software systems--is vital to operations in every sector. Global business and industry, governments, and society itself, cannot function effectively if major components of the critical information infrastructure are degraded, disabled or destroyed. This book contains a selection of 27 edited papers from the First Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection. The monograph provides the results of theoretical and experimental research conducted in primary metals establishment in the framework of A-3-82 project "Methods of increasing efficiency of application of energy sources at electroste

smelting ovens of ferrous metallurgy establishments”.

Pharmaceutical Quality by Design: Principles and Applications discusses the Quality by Design (QbD) concept implemented by regulatory agencies to ensure the development of a consistent and high-quality pharmaceutical product that safely provides the maximum therapeutic benefit to patients. The book walks readers through the QbD framework by covering the fundamental principles of QbD, the current regulatory requirements, and the applications of QbD at various stages of pharmaceutical product development, including drug substance and excipient development, analytical development, formulation development, dissolution testing, manufacturing, stability studies, bioequivalence testing, risk and assessment, and clinical trials. Contributions from global leaders in QbD provide specific insight into application in a diversity of pharmaceutical products, including nanopharmaceuticals, biopharmaceuticals, and vaccines. The inclusion of illustrations, practical examples, and case studies makes this book a useful reference guide to pharmaceutical scientists and researchers who are engaged in the formulation of various delivery systems. The analysis of pharmaceutical product development and drug manufacturing processes. Discusses vital QbD precepts and fundamental aspects of QbD implementation in pharmaceutical, biopharmaceutical, and biotechnology industries. Provides helpful illustrations, practical examples and research case studies to explain QbD concepts to readers.

Includes contributions from global leaders and experts from academia, industry and regulatory agencies

Proceedings of the AHFE 2019 International Conference on Human Factors and Systems Interaction, July 24-28, 2019, Washington D.C., USA

PLC And SCADA

The current state of electrometallurgy in Uzbekistan

OPC Unified Architecture

The Emerging Domain of Cooperating Objects

GAMP 5

Combining select chapters from Grigsby's standard-setting The Electric Power Engineering Handbook with several chapters not found in the original work, Electric Power Substations Engineering became widely popular for its comprehensive, tutorial-style treatment of the theory, design, analysis, operation, and protection of power substations. For its

This book highlights recent findings in industrial, manufacturing and mechanical engineering, and provides an overview of the state of the art in these fields, mainly in Russia and Eastern Europe. A broad range of topics and issues in modern engineering is discussed, including the dynamics of machines and working processes, friction, wear and lubrication in machines, surface

transport and technological machines, manufacturing engineering of industrial facilities, materials engineering, metallurgy, control systems and their industrial applications, industrial mechatronics, automation and robotics. The book gathers selected papers presented at the 7th International Conference on Industrial Engineering (ICIE), held in Sochi, Russia, in May 2021. The authors are experts in various fields of engineering, and all papers have been carefully reviewed. Given its scope, the book will be of interest to a wide readership, including mechanical and production engineers, lecturers in engineering disciplines, and engineering graduates.

PID Control for Industrial Processes presents a clear, multidimensional representation of proportional - integral - derivative (PID) control for both students and specialists working in the area of PID control. It mainly focuses on the theory and application of PID control in industrial processes. It incorporates recent developments in PID control technology in industrial practice. Emphasis has been given to finding the best possible approach to develop a simple and optimal solution for industrial users. This book includes several chapters that cover a broad range of topics and priority has been given to subjects that cover real-world examples and case studies. The book is focused on approaches for controller tuning, i.e., method bases on open-loop plant tests and closed-loop

experiments.

Motivation for This Book The OPC Foundation provides specifications for data exchange in industrial automation. There is a long history of COM/DCOM-based specifications, most prominent OPC Data Access (DA), OPC Alarms and Events (A&E), and OPC Historical Data Access (HDA), which are widely accepted in the industry and implemented by almost every system targeting industrial automation. Now the OPC Foundation has released a new generation of OPC specifications called OPC Unified Architecture (OPC UA). With OPC UA, the OPC Foundation fulfills a technology shift from the retiring COM/DCOM technology to a service-oriented architecture providing data in a platform-independent manner via Web Services or its own optimized TCP-based protocol. OPC UA unifies the previous specifications into one single address space capable of dealing with current data, alarms and events and the history of current data as well as the event history. A remarkable enhancement of OPC UA is the Address Space Model by which vendors can expose a rich and extensible information model using object-oriented techniques. OPC UA scales well from intelligent devices, controllers, DCS, and SCADA systems up to MES and ERP systems. It also scales well in its ability to provide information; on the lower end, a model similar to Classic OPC can be used, providing only base information, while at

the upper end, highly sophisticated models can be described, providing a large amount of metadata including complex type hierarchies.

LabVIEW for Everyone

Advances in Human Factors and Systems Interaction

A Guide to Design, Management and Procurement

B Factories

The IMC-AESOP Approach

The Universal Machine

In the race to compete in today's fast-moving markets, large enterprises are busy adopting new technologies for creating new products, processes, and business models. But one obstacle on the road to digital transformation is placing too much emphasis on technology, and not enough on the types of processes technology enables. What if different lines of business could build their own services and applications—and decision-making was distributed rather than centralized? This report explores the concept of a digital business platform as a way of empowering individual business sectors to act on data in real time. Much innovation in a digital enterprise will increasingly happen at the edge, whether it involves business users (from marketers to data scientists) or IoT devices. To facilitate the process, your core IT team can provide these sectors with the digital tools they need to innovate quickly. This report explores: Key cultural and organizational

changes for developing business capabilities through cross-functional product teams A platform for integrating applications, data sources, business partners, clients, mobile apps, social networks, and IoT devices Creating internal API programs for building innovative edge services in low-code or no-code environments Tools including Integration Platform as a Service, Application Platform as a Service, and Integration Software as a Service The challenge of integrating microservices and serverless architectures Event-driven architectures for processing and reacting to events in real time You'll also learn about a complete pervasive integration solution as a core component of a digital business platform to serve every audience in your organization.

This book provides a classification of current and future applications for the domain of Cooperating Objects. The book has been created with a very strong participation of the industry and taking into account current research trends and industrial roadmaps

In recent years, industries have transitioned into the digital realm, as companies and organizations are adopting certain forms of technology to assist in information storage and efficient methods of production. This dependence has significantly increased the risk of cyber crime and breaches in data security. Fortunately, research in the area of cyber security and information protection is flourishing; however, it is the responsibility of industry professionals to keep pace with the current trends within this field. The Handbook of Research on Cyber Crime and Information Privacy is a collection of innovative research on the

modern methods of crime and misconduct within cyber space. It presents novel solutions to securing and preserving digital information through practical examples and case studies. While highlighting topics including virus detection, surveillance technology, and social networks, this book is ideally designed for cybersecurity professionals, researchers, developers, practitioners, programmers, computer scientists, academicians, security analysts, educators, and students seeking up-to-date research on advanced approaches and developments in cyber security and information protection.

Held in Wuhan of China from August 20-21, 2016, the 2016 International Conference on Mechatronics and Manufacturing Technologies (MMT2016) provides an excellent international academic forum for all the researchers and practitioners to share resources, exchange opinions and inspire studying. The conference enjoys a wide spread participation among all over the universities and research institutes. It provides a broad overview of the latest research results on related fields and also a significant platform for academic connection and exchange. MMT2016 proceedings collects together 96 articles, after peer-review, to report on state-of-art developments of mechanical engineering based on originality, significance and clarity for the purpose of the Conference.

Handbook of Big Data Technologies

An Approach to User-Centered Design

Patterns and Paradigms for Scalable, Reliable Services

Designing for Situation Awareness

Graphical Programming Made Easy and Fun  
Mechatronics And Manufacturing Technologies - Proceedings Of The  
International Conference (Mmt 2016)

*This book reports on cutting-edge research into innovative system interfaces, highlighting both lifecycle development and human-technology interaction, especially in virtual, augmented and mixed-reality systems. It describes advanced methodologies and tools for evaluating and improving interface usability and discusses new models, as well as case studies and good practices. The book addresses the human, hardware, and software factors in the process of developing interfaces for optimizing total system performance, while minimizing their costs. It also highlights the forces currently shaping the nature of computing and systems, such as: the importance of portability and technologies for reducing power requirements; the necessity of a better assimilation of computation in the environment; as well as solutions to promote accessibility to computers and systems for people with special needs. The book, which is based on the AHFE 2019 International Conference on Human Factors and Systems Interaction, held on July 24-28, 2019, in Washington D.C., USA, offers a timely survey and practice-oriented guide for systems interface users and developers alike.*

*Overview of Industrial Process Automation, Second Edition, introduces the basics of philosophy, technology, terminology, and practices of modern automation systems*

*through the presentation of updated examples, illustrations, case studies, and images. This updated edition adds new developments in the automation domain, and its reorganization of chapters and appendixes provides better continuity and seamless knowledge transfer. Manufacturing and chemical engineers involved in factory and process automation, and students studying industrial automation will find this book to be a great, comprehensive resource for further explanation and study. Presents a ready made reference that introduces all aspects of automation technology in a single place with day-to-day examples Provides a basic platform for the understanding of industry literature on automation products, systems, and solutions Contains a guided tour of the subject without the requirement of any previous knowledge on automation Includes new topics, such as factory and process automation, IT/OT Integration, ISA 95, Industry 4.0, IoT, etc., along with safety systems in process plants and machines*

*This book constitutes the refereed proceedings of the 7th International Workshop on Software Engineering for Resilient Systems, SERENE 2015, held in Paris, France, in September 2015. The 10 revised technical papers presented were carefully reviewed and selected from 18 submissions. The papers are organized in topical sections on development of resilient systems, verification, validation and evaluation of resilience, case studies and applications.*

*This two-volume set (CCIS 175 and CCIS 176) constitutes the refereed proceedings*

*of the International Conference on Computer Education, Simulation and Modeling, CSEM 2011, held in Wuhan, China, in June 2011. The 148 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. The papers cover issues such as multimedia and its application, robotization and automation, mechatronics, computer education, modern education research, control systems, data mining, knowledge management, image processing, communication software, database technology, artificial intelligence, computational intelligence, simulation and modeling, agent based simulation, biomedical visualization, device simulation & modeling, object-oriented simulation, Web and security visualization, vision and visualization, coupling dynamic modeling theory, discretization method , and modeling method research.*

*Accelerator Physics, Instrumentation and Science Applications*  
*Modern Industrial Automation Software Design*  
*Cyber-security of SCADA and Other Industrial Control Systems*  
*Volume I*  
*The Elements of Big Data Value*  
*Software Engineering for Resilient Systems*