

Industrial Automation Technology

A practical guide to industrial automation concepts, terminology, and applications Industrial Automation: Hands-On is a single source of essential information for those involved in the design and use of automated machinery. The book emphasizes control systems and offers full coverage of other relevant topics, including machine building, mechanical engineering and devices, manufacturing business systems, and job functions in an industrial environment. Detailed charts and tables serve as handy design aids. This is an invaluable reference for novices and seasoned automation professionals alike. **COVERAGE INCLUDES:** * Automation and manufacturing * Key concepts used in automation, controls, machinery design, and documentation * Components and hardware * Machine systems * Process systems and automated machinery * Software * Occupations and trades * Industrial and factory business systems, including Lean manufacturing * Machine and system design * Applications

The process control industry has seen generations of technology advancement, from pneumatic communication to electrical communication to electronic communication, from centralized control to distributed control. At the center of today's distributed control systems are operator workstations. These operator workstations provide the connection between those overseeing and running plant operations to the process itself. With each new generation of products the operator workstation has become increasingly more intelligent. Newer applications provide advanced alarming, control, and diagnostics. Behind all of these applications are smarter devices. These smart devices provide greater process insight, reduce engineering costs, and contribute to improving the overall operational performance of the plant. Smart devices include advanced diagnostics that can report the health of the device and in many cases, the health of the process that the device is connected to. It is not uncommon for smart devices to include diagnostics that can detect plugged lines, burner flame instability, agitator loss, wet gas, orifice wear, leaks, and cavitations. These devices tell the user how well they are operating and when they need maintenance. Improvements in sensor technology and diagnostics have lead to a large variety of smart devices. So how do users connect the capabilities of these smart devices to their existing control system infrastructures? The answer is wireless. Wireless technology has matured to the point that it now can be safely applied in industrial control, monitor, and asset management applications.

Control engineering seeks to understand physical systems, using mathematical modeling, in terms of inputs, outputs and various components with different behaviors. It has an essential role in a wide range of control systems, from household appliances to space flight. This book provides an in-depth view of the technologies that are implemented in most varieties of modern industrial control engineering. A solid grounding is provided in traditional control techniques, followed by detailed examination of modern control techniques such as real-time, distributed, robotic, embedded, computer and wireless control technologies. For each technology, the book discusses its full profile, from the field layer and the control layer to the operator layer. It also includes all the interfaces in industrial control systems: between controllers and systems; between different layers; and between operators and systems. It not only describes the details of both real-time operating systems and distributed operating systems, but also provides coverage of the microprocessor boot code, which other books lack. In addition to working principles and operation mechanisms, this book emphasizes the practical issues of components, devices and hardware circuits, giving the specification parameters, install procedures, calibration and configuration methodologies needed for engineers to put the theory into practice. Documents all the key technologies of a wide range of industrial control systems Emphasizes practical application and methods alongside theory and principles An ideal reference for practicing engineers needing to further their understanding of the latest industrial control concepts and techniques

Modern Industrial Automation Software Design

Technological Developments in Education and Automation

Autotech Asia '89 : Industrial Automation Technology Conference

Teaching Package Student Activity Manual

The Industrial Information Technology Handbook

Overview of Industrial Process Automation

In 1987 the Swedish National Board for Technical Development (STU, later becoming the Swedish National Board for Industrial and Technical Development, NUTEK) initiated a study of Sweden's Technological Systems and Future Development Potential. A comprehensive, interdisciplinary study was envisioned, yielding not only useful insight but also a permanent competence base for future analyses of technological systems and technology policy in Sweden. Three leading Swedish research institutes were invited to participate: the Industrial Institute for Economic and Social Research in Stockholm, the Department of Industrial Management and Economics at Chalmers University of Technology in Gothenburg, and the Research Policy Institute at the University of Lund. I was invited to direct the project. The project group decided to focus initially on a particular technological system, namely factory automation, to be followed by similar studies of other systems. Numerous publications have resulted from the project thus far. The current volume represents a summary of our work on factory automation. It consists of several original essays and of some previously published papers which have been edited, in some cases substantially, in order to form a comprehensive and coherent picture of a technological system. To our knowledge, this is the first in-depth analysis of a technological system designed as a component of a systematic study of technological systems more generally. At the time of this writing, three further studies on electronics and computers, pharmaceuticals, and powder technology are under way, to be published in a later volume.

- Academic Links relate chapter content to math, science, social studies, and language arts.- Technology Links between manufacturing and other technologies, such

as Agriculture, Communications, Construction, Transportation, and Energy and Power.- Career Links to manufacturing-related careers. How the history of technological revolutions can help us better understand economic and political polarization in the age of automation The Technology Trap is a sweeping account of the history of technological progress and how it has radically shifted the distribution of economic and political power among society's members. As Carl Benedikt Frey shows, the Industrial Revolution created unprecedented wealth and prosperity over the long run, but the immediate consequences of mechanization were devastating. Middle-income jobs withered, wages stagnated, the labor share of income fell, profits surged, and economic inequality skyrocketed. These trends broadly mirror those in our current age of automation. But, just as the Industrial Revolution eventually brought about extraordinary benefits for society, artificial intelligence systems have the potential to do the same. The Technology Trap demonstrates that in the midst of another technological revolution, the lessons of the past can help us to more effectively face the present.

Industrial Automation Technologies

Security and Privacy Issues in Sensor Networks and IoT

Detection of Anomalous Values in Industrial Automation Technology Infrastructures

Control Engineering in Robotics and Industrial Automation

Manufacturing and Automation Systems: Techniques and Technologies, Part 5 of 5

Industrial Automation and Robotics

The book begins with an overview of automation history and followed by chapters on PLC, DCS, and SCADA –describing how such technologies have become synonymous in process instrumentation control. The book then introduces the niche of Fieldbuses in process industries. It then goes on to discuss wireless communication in the automation sector and its applications in the industrial automation. The book also discusses the all-pervading IoT and its industrial cousin, IIoT, which is finding increasing applications in process automation and control domain. The last chapter introduces OPC technology which has strongly emerged as a defacto standard for interoperable data exchange between multi-vendor software applications and bridges the divide between heterogeneous automation worlds in a very easy way. Key features: Presents an overall industrial automation scenario as it evolved over the years Discusses the already established PLC, DCS, and SCADA in a thorough and lucid manner and their recent advancements Provides an insight into today's industrial automation field Reviews Fieldbus communication and WSNs in the context of industrial communication Explores IIoT in process automation and control fields Introduces OPC which has already carved out a niche among industrial communication technologies with its seamless connectivity in a heterogeneous automation world Dr. Chanchal Kumar Sen is an Associate Professor in the Department of Applied Physics, Instrumentation Engineering Section, University of Calcutta. He is a reviewer of IEEE, Elsevier, Springer, Acta Press, Sage, and Taylor & Francis Publishers. He has more than 80 papers in international journals and conference publications. His research interests include intelligent process control using conventional, fuzzy, and neuro-fuzzy techniques. Dr. Sunit Kumar Sen is an ex-professor, Department of Applied Physics, Instrumentation Engineering Section, University of Calcutta. He was a coordinator of two projects sponsored by AICTE and Government of India. He has published around 70 papers in international and national journals and conferences and has published three books – the last one was published by CRC Press in 2014. He is a reviewer of Measurement, Elsevier. His field of interest is new designs of ADCs and DACs.

Automation is a well-known technology which is widespread and used across the world. With the help of this technology, a lot can be achieved which seems to be a difficult task. It is an overwhelming technology which has a lot to offer to the human race. Automation is popular everywhere and is used in several industries. These industries are also responsible for making the efficient use of this technology. It is fascinating to understand and know more about this tremendous technology which has not only evolved in the past but has also emerged and enhanced so that it can be a feasible, accessible and useful for everyone. The automation or the automatic system is responsible for making a lot of things easier. The use of automation in the various sectors helps in maintaining the data, finances etc of an industry. It is a high-profile technique which is responsible for decreasing the need for Manpower. There is a lot more to know and understand about this technology so go ahead and explore it. Almost every industry that use liquids and gas in any form has a need to measure flow, temperature and pressure. This text is a practical guide on how to accurately use these measuring instruments in control processes in manufacturing industries for food, beverages, chemicals, pharmaceuticals, oil, water and waste water, power, etc. With higher prices of raw materials and more severe requirements for safety and environmental issues, there is a growing demand to measure with higher precision. The book includes a number of practical examples from various industries. It discusses how to comply with safety standards regarding measurements and explains how legal control systems apply to measurements. The aim is to help any process industry reduce the risk of high costs and damage to both personnel and equipment.

Real-Time Mesh Network for Industrial Automation

Technological Systems and Economic Performance: The Case of Factory Automation

Forces of Production

Practical Aspects of Industrial Automation Technology

Integration Technologies for Industrial Automated Systems

The Status of Automation Technology Being Utilized in Manufacturing in the State of Utah

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Industrial Process Automation Systems: Design and Implementation is a clear guide to the practicalities of modern industrial automation systems. Bridging the gap between theory and practice, its comprehensive coverage, it offers a pragmatic approach to the subject based on industrial experience, taking in the latest technologies and professional practices. Its comprehensive coverage of the subject provides engineers with the knowledge they need before referring to vendor documentation, while clear guidelines for implementing process control options and worked examples of

into practice with ease. This book is an ideal introduction to the subject for junior level professionals as well as being an essential reference for more experienced practitioners. Provides information on different systems available and their applications, enabling engineers to design automation solutions to solve real industry problems. Includes case studies and practical information to be considered when procuring automation systems. Written by an experienced practitioner from a leading technology company

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 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 problems. A useful reference book for practicing engineers as well as an updated resource book for researchers

Advances in Theory and Applications

Robotics, Automation, and Control in Industrial and Service Settings

Progress in Manufacturing Automation Technology and Application

Performance Analysis and Applications

Capital, Labor, and Power in the Age of Automation

Manufacturing Automation Technology and System I

This book is the first research collection by the Malaysian Society for Automatic Control Engineers (MACE). Numerous applications of control engineering, sensor, and instrumentation technology in robotics, industrial automation, and other mechatronic systems are presented in this book. The book begins by introducing control engineering in robotics and industrial automation. It progresses through a series of chapters, discussing the application of control engineering in various areas such as: brake-by-wire technology; web scrubber systems; robot localization; and, autonomous navigation systems. Coverage of swarm robotics behaviors and applications of sensor technology in the field of music, biomedical technology, and structural analysis takes the book beyond its core of mechatronic systems and demonstrates a more diverse application of the ideas it presents. Each chapter provides comprehensive and detailed coverage of the main ideas, design methods, and practical needs of its chosen topic, making this book accessible and useful to researchers, engineers, postgraduates, and undergraduate students.

This comprehensive textbook covers in detail the principal programmable automation technologies used in industry - the building blocks from which all automated manufacturing is developed. It is a one-stop source for developing CNC, robotics, and PLC programming skills, is replete with numerous examples, and it identifies and discusses readily available simulation software to experiment with. The text is primarily intended for undergraduate engineering technology students. Besides, anyone with a technical background and a general understanding of manufacturing and manufacturing processes will find this text useful, as well as to those who wish, simply, to study and understand the use of these technologies. The text is organized into four sections. Section One is introductory: Chapter 1 provides some background on manufacturing and defines programmable automation. Chapter 2 explains calculation methods used to justify automation expenditures, as motivated by productivity concepts. Section Two covers computer numerical control: Chapter 3 introduces CNC technology, Chapter 4 discusses CNC programming, and Chapter 5 addresses CNC simulation. Robotics is covered in Section Three: Chapter 6 introduces robotics technology and Chapter 7 goes over both robotics programming and simulation. Section Four addresses PLCs: Chapter 8 introduces PLCs and Chapter 9 covers programming and simulation of PLCs. Finally, Chapter 10 concludes the text with a discussion of how all three technologies are brought together to create programmable automated workstations and work cells.

Focusing on the design and implementation of computer-based automatic machine tools, David F. Noble challenges the idea that technology has a life of its own. Technology has been both a convenient scapegoat and a universal solution, serving to disarm critics, divert attention, depoliticize debate, and dismiss discussion of the fundamental antagonisms and inequalities that continue to beset America. This provocative study of the postwar automation of the American metal-working industry—the heart of a modern industrial economy—explains how dominant institutions like the great corporations, the universities, and the military, along with the ideology of modern engineering shape, the development of technology. Noble shows how the system of "numerical control," perfected at the Massachusetts Institute of Technology (MIT) and put into general industrial use, was chosen over competing systems for reasons other than the technical and economic superiority typically advanced by its promoters. Numerical control took shape at an MIT laboratory rather than in a manufacturing setting, and a market for the new technology was created, not by cost-minded producers, but instead by the U. S. Air Force. Competing methods, equally promising, were rejected because they

left control of production in the hands of skilled workers, rather than in those of management or programmers. Noble demonstrates that engineering design is influenced by political, economic, managerial, and sociological considerations, while the deployment of equipment—illustrated by a detailed case history of a large General Electric plant in Massachusetts—can become entangled with such matters as labor classification, shop organization, managerial responsibility, and patterns of authority. In its examination of technology as a human, social process, *Forces of Production* is a path-breaking contribution to the understanding of this phenomenon in American society.

The Technology Trap

Information Security for Industrial Applications

Industrial Automation: Hands On

Industrial Process Automation Systems

Conference Proceedings, Held October 5–6, 1989, Hong Kong Convention and Exhibition Centre ; Organizer: Hong Kong Productivity Council, Sponsor: Society of Manufacturing Engineers

Manufacturing Automation Technology

Manufacturing and Automation Systems: Techniques and Technologies, Part 5 of 5

Technological Developments in Education and Automation includes set of rigorously reviewed world-class manuscripts dealing with the increasing role of technology in daily lives including education and industrial automation. *Technological Developments in Education and Automation* contains papers presented at the International Conference on Industrial Electronics, Technology & Automation and the International Conference on Engineering Education, Instructional Technology, Assessment, and E-learning which were part of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering.

If there exists a single term that summarizes the key to success in modern industrial automation, the obvious choice would be integration. Integration is critical to aligning all levels of an industrial enterprise and to optimizing each stratum in the hierarchy. While many books focus on the technological components of enterprise information systems, *Integration Technologies for Industrial Automated Systems* is the first book to present a comprehensive picture of the technologies, methodologies, and knowledge used to integrate seamlessly the various technologies underlying modern industrial automation and information systems. In chapters drawn from two of Zurawski's popular works, *The Industrial Communication Technology Handbook* and *The Industrial Information Technology Handbook*, this practical guide offers tutorials, surveys, and technology overviews contributed by experts from leading industrial and research institutions from around the world. The book is organized into sections for cohesive and comprehensive treatment. It examines e-technologies, software and IT technologies, communication network-based technologies, agent-based technologies, and security in detail as well as their role in the integration of industrial automated systems. For each of these areas, the contributors discuss emerging trends, novel solutions, and relevant standards. Charting the course toward more responsive and agile enterprise, *Integration Technologies for Industrial Automated Systems* gives you the tools to make better decisions and develop more integrated systems.

Robotics and Automation in the Food Industry

Automation Technology

Current and Future Technologies

Manufacturing and Automation Technology

Manufacturing Automation Technology and System II

An Introduction

Volume is indexed by Thomson Reuters CPCI-S (WoS). The present volume comprises a collection of peer-reviewed papers covering innovations and practical experience regarding manufacturing automation education; current and developing manufacturing automation; advanced manufacturing technology including flexible manufacturing, virtual manufacturing, Green manufacturing and re-manufacturing, and web-based manufacturing; computer-integrated manufacturing systems; CAD/CAE/CAPP/CAM; product life-cycle management (PLM); computerized numerical control systems and flexible manufacturing systems; industrial robotics; process monitoring and quality control of manufacturing systems; group technology (GT); PDM, ERP, logistics and supply chains.

The Industrial Information Technology Handbook focuses on existing and emerging industrial applications of IT, and on evolving trends that are driven by the needs of companies and by industry-led consortia and organizations. Emphasizing fast growing areas that have major impacts on industrial automation and enterprise integration, the Handbook covers topics such as industrial communication technology, sensors, and embedded systems. The book is organized into two parts. Part 1 presents material covering new and quickly evolving aspects of IT. Part 2 introduces cutting-edge areas of industrial IT. The Handbook presents material in the form of tutorials, surveys, and technology overviews, combining fundamentals and advanced issues, with articles grouped into sections for a cohesive and comprehensive presentation. The text contains 112 contributed reports by

industry experts from government, companies at the forefront of development, and some of the most renowned academic and research institutions worldwide. Several of the reports on recent developments, actual deployments, and trends cover subject matter presented to the public for the first time.

The purpose of this book is to present an introduction to the multidisciplinary field of automation and robotics for industrial applications. The companion files include numerous video tutorial projects and a chapter on the history and modern applications of robotics. The book initially covers the important concepts of hydraulics and pneumatics and how they are used for automation in an industrial setting. It then moves to a discussion of circuits and using them in hydraulic, pneumatic, and fluidic design. The latter part of the book deals with electric and electronic controls in automation and final chapters are devoted to robotics, robotic programming, and applications of robotics in industry. eBook

Customers: Companion files are available for downloading with order number/proof of purchase by writing to the publisher at info@merclearning.com. Features: * Begins with introductory concepts on automation, hydraulics, and pneumatics * Covers sensors, PLC's, microprocessors, transfer devices and feeders, robotic sensors, robotic grippers, and robot programming

Measurement Technology for Process Automation

WirelessHARTTM

Automation Technology and Industrial Renewal

An Introduction to CNC, Robotics and PLCs

Industrial Automation Technology Conference : Papers

Programmable Automation Technologies

INDUSTRIAL AUTOMATED SYSTEMS: INSTRUMENTATION AND MOTION CONTROL, is the ideal book to provide readers with state-of-the art coverage of the full spectrum of industrial maintenance and control, from servomechanisms to instrumentation. Readers will learn about components, circuits, instruments, control techniques, calibration, tuning and programming associated with industrial automated systems. *INDUSTRIAL AUTOMATED SYSTEMS: INSTRUMENTATION AND MOTION CONTROL*, focuses on operation, rather than mathematical design concepts. It is formatted into sections so that it can be used for a variety of courses, such as electrical motors, sensors, variable speed drives, programmable logic controllers, servomechanisms, and various instrumentation and process classes. This book also offers readers a broader coverage of industrial maintenance and automation information than other books and provides them with a more extensive collection of supplements, including a lab manual and two hundred animated multimedia lessons on a CD. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The implementation of robotics and automation in the food sector offers great potential for improved safety, quality and profitability by optimising process monitoring and control. Robotics and automation in the food industry provides a comprehensive overview of current and emerging technologies and their applications in different industry sectors. Part one introduces key technologies and significant areas of development, including automatic process control and robotics in the food industry, sensors for automated quality and safety control, and the development of machine vision systems. Optical sensors and online spectroscopy, gripper technologies, wireless sensor networks (WSN) and supervisory control and data acquisition (SCADA) systems are discussed, with consideration of intelligent quality control systems based on fuzzy logic. Part two goes on to investigate robotics and automation in particular unit operations and industry sectors. The automation of bulk sorting and control of food chilling and freezing is considered, followed by chapters on the use of robotics and automation in the processing and packaging of meat, seafood, fresh produce and confectionery. Automatic control of batch thermal processing of canned foods is explored, before a final discussion on automation for a sustainable food industry. With its distinguished editor and international team of expert contributors, *Robotics and automation in the food industry* is an indispensable guide for engineering professionals in the food industry, and a key introduction for professionals and academics interested in food production, robotics and automation. Provides a comprehensive overview of current and emerging robotics and automation technologies and their applications in different industry sectors Chapters in part one cover key technologies and significant areas of development, including automatic process control and robotics in the food industry and sensors for automated quality and safety control Part two investigates robotics and automation in particular unit operations and industry sectors, including the automation of bulk sorting and the use of robotics and automation in the processing and packaging of meat, seafood, fresh produce and confectionery

The first part is devoted to digital automation platforms, including an introduction to Industry 4.0 and digital automation platforms The second part focuses on the presentation of digital simulation and functionalities The third part provides information about assets and services that boost the adoption of digital automation functionalities

Industrial Automated Systems: Instrumentation and Motion Control

Adjustment Dynamics in the U.S. Metalworking Sector

Malaysian Society for Automatic Control Engineers (MACE) Technical Series 2018

Autotech Asia '89

Manufacturing Automation Technology Development

Robotics and the Factory of the Future

Volume is indexed by Thomson Reuters CPCI-S (WoS). The goal of "Manufacturing Automation Technology Development" is to exchange

experiences and information in teaching and research, to explore the development of the subject, to maintain the standards of the subject, to raise the levels of teaching and research and to promote the development of manufacturing automation technology. As technology continues to expand and develop, the internet of things (IoT) is playing a progressive role in the infrastructure of electronics. The increasing amount of IoT devices, however, has led to the emergence of significant privacy and security challenges. Security and Privacy Issues in Sensor Networks and IoT is a collection of innovative research on the methods and applications of protection disputes in the internet of things and other computing structures. While highlighting topics that include cyber defense, digital forensics, and intrusion detection, this book is ideally designed for security analysts, IT specialists, software developers, computer engineers, industry professionals, academicians, students, and researchers seeking current research on defense concerns in cyber physical systems.

Volume is indexed by Thomson Reuters BCI (WoS). The special topic volume is not only to communicate the latest research and progress of the new technology, theory, method, equipment in the field of materials processing and manufacturing automation technology, but also to master cutting-edge technology and research trends on a global scale, which can promote international cooperation and communication of production and research in this field. The main themes covered by the special issue include Industrial Robot Technology, Process Monitoring and Quality Control of Manufacturing Systems, Agile Manufacturing, Intelligent Manufacturing, Green Manufacturing, Virtual Manufacturing, Networked Manufacturing, Computer Integrated Manufacturing System Product Lifecycle Management and Contemporary Integrated Manufacturing System, Computerized Numerical Control System and Flexible Manufacturing System, CAD/CAE/CAPP/CAM and Application of Product Data Management, Precision Machining Technology, Logistics Engineering and Equipment and Other Related Topics.

Advanced Industrial Control Technology

A Social History of Industrial Automation

Innovations in the Industrial Internet of Things (IIoT) and Smart Factory

Design and Implementation

The Digital Shopfloor - Industrial Automation in the Industry 4.0 Era

This special issue of Key Engineering Materials journal is to communicate the latest progress and research of new theory, technology, method, equipment in materials processing and manufacturing automation technology field, and to grasp the forefront technological and research trends worldwide, which will drive international communication and cooperation of production, education and research in this field. The major topics covered by the special issue include Experience and Paper of Education in Special Machining Technology, Process Monitoring and Quality Control of Manufacturing Systems, Industrial Robot Technology, Agile Manufacturing, Intelligent Manufacturing, Green Manufacturing, Virtual Manufacturing, Networked Manufacturing, Computer Integrated Manufacturing System and Contemporary Integrated Manufacturing System, Product Lifecycle Management, Computerized Numerical Control System and Flexible Manufacturing System, Precision Machining Technology, CAD/CAE/CAPP/CAM and Application of Product Data Management, Logistics Engineering and Equipment and Other Related Topics and so on. The guest editors would like to thank the contributors of papers, the reviewers and the Key Engineering Materials journal for helping put together this special issue.

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

Industrial internet of things (IIoT) is changing the face of industry by completely redefining the way stakeholders, enterprises, and machines connect and interact with each other in the industrial digital ecosystem. Smart and connected factories, in which all the machinery

transmits real-time data, enable industrial data analytics for improving operational efficiency, productivity, and industrial processes, thus creating new business opportunities, asset utilization, and connected services. IIoT leads factories to step out of legacy environments and arcane processes towards open digital industrial ecosystems. Innovations in the Industrial Internet of Things (IIoT) and Smart Factory is a pivotal reference source that discusses the development of models and algorithms for predictive control of industrial operations and focuses on optimization of industrial operational efficiency, rationalization, automation, and maintenance. While highlighting topics such as artificial intelligence, cyber security, and data collection, this book is ideally designed for engineers, manufacturers, industrialists, managers, IT consultants, practitioners, students, researchers, and industrial industry professionals.