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Measuring Electronics and Sensors - Herbert Bernstein 2022

The book gives an insight into today's operational measurement technology including analysis technology, without claiming to be complete. For the student, the book is an introduction in addition to the relevant textbooks and manuals. It gives the engineer in the profession a quick overview of measurement methods and instruments not familiar to him. In this book not only the components of measurement technology are presented transparently, but also the analog components that are necessary for the construction of measurement and control systems. The theoretical basics and the measuring methods are as much a part of the book as the description of systems, devices and measuring equipment. By indicating measuring ranges and error limits, additional reference points for the application are given, whereby the values mentioned are to be regarded as minimum values due to the constant technical development.

This book is a translation of the original German 1st edition *Messelektronik und Sensoren* by Herbert Bernstein, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2014. The translation was done with the help of artificial intelligence

(machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors. The contents Fundamentals of measurement technology - components of electrical measurement value acquisition - dimensional scale - sensors - analog measurement signal processing - digital measurement signal processing - measurement signal processing with microcontroller The Author Dipl.-Ing. Herbert Bernstein taught the subjects Fundamentals of Electrical Engineering/Electronics and Measurement Technology at the Technikerschule München. He is the author of numerous textbooks in the field of electrical engineering/electronics.

Electro-optical Imaging System Performance - Gerald C. Holst 2006

Photovoltaics - Konrad Mertens 2018-07-23

A comprehensive tutorial on photovoltaic technology now fully updated

to include solar storage and the latest methods for on-site plant measurements Starting with the basic principles of solar energy, this fully updated, practical text explains the fundamentals of semiconductor physics and the structure and functioning of the solar cell. It describes the latest measurement techniques for solar modules, and the planning and operation of grid-connected and off-grid PV systems. It also looks at other thin film cells, hybrid wafer cells, and concentrator systems. Additionally, this Second Edition covers solar modules and solar generators; system technology of grid connected plants; the storage of solar energy; photovoltaic measurement technology; the planning and operation of grid-connected systems; economic efficiency of PV systems; and the future development of PV. Presents the latest advances in PV R&D and industry deployment Updated illustrations and tabular data reflect current state-of-the-art and PV technology efficiencies Offers expanded tutorial sections to aid teaching and self-study Includes a brand-new chapter on Solar Energy Storage Features two enlarged chapters—one on up-to-date photovoltaic metrology and the other on the future developments in photovoltaics Comes along with the accompanying website www.textbook-pv.org which offers free downloadable figures of the book, solutions of exercises, additional free PV software etc. Developed to prepare engineering students for the PV industry, this practical text is an essential PV primer.

Computational Reality - Bilen Emek Abali 2016-10-22

This book presents the theory of continuum mechanics for mechanical, thermodynamical, and electro-dynamical systems. It shows how to obtain governing equations and it applies them by computing the reality. It uses only open-source codes developed under the FEniCS project and includes codes for 20 engineering applications from mechanics, fluid dynamics, applied thermodynamics, and electromagnetism. Moreover, it derives and utilizes the constitutive equations including coupling terms, which allow to compute multiphysics problems by incorporating interactions between primitive variables, namely, motion, temperature, and electromagnetic fields. An engineering system is described by the primitive variables satisfying field equations that are partial differential

equations in space and time. The field equations are mostly coupled and nonlinear, in other words, difficult to solve. In order to solve the coupled, nonlinear system of partial differential equations, the book uses a novel collection of open-source packages developed under the FEniCS project. All primitive variables are solved at once in a fully coupled fashion by using finite difference method in time and finite element method in space.

Gasmesstechnik in Theorie und Praxis - Gerhard Wiegleb 2016-04-15

In dem Buch werden die physikalischen Eigenschaften der Gase beschrieben und die unterschiedlichen Messverfahren und Sensorprinzipien zur Analyse von Gasgemischen dargestellt. Die Anwendung von Gassensoren in den unterschiedlichen Applikationen wird anhand praxisnaher Beispiele dargestellt. Diese Anwendungsfälle der messtechnischen Erfassung von Gasen stammen aus vielen Bereichen der Technik, insbesondere der Energietechnik, Lebensmitteltechnik, Verfahrenstechnik, Biotechnik, Sicherheitstechnik, Medizintechnik und der Umwelttechnik.

Springer Handbook of Global Navigation Satellite Systems - Peter Teunissen 2017-06-16

This Handbook presents a complete and rigorous overview of the fundamentals, methods and applications of the multidisciplinary field of Global Navigation Satellite Systems (GNSS), providing an exhaustive, one-stop reference work and a state-of-the-art description of GNSS as a key technology for science and society at large. All global and regional satellite navigation systems, both those currently in operation and those under development (GPS, GLONASS, Galileo, BeiDou, QZSS, IRNSS/NAVIC, SBAS), are examined in detail. The functional principles of receivers and antennas, as well as the advanced algorithms and models for GNSS parameter estimation, are rigorously discussed. The book covers the broad and diverse range of land, marine, air and space applications, from everyday GNSS to high-precision scientific applications and provides detailed descriptions of the most widely used GNSS format standards, covering receiver formats as well as IGS product and meta-data formats. The full coverage of the field of GNSS is

presented in seven parts, from its fundamentals, through the treatment of global and regional navigation satellite systems, of receivers and antennas, and of algorithms and models, up to the broad and diverse range of applications in the areas of positioning and navigation, surveying, geodesy and geodynamics, and remote sensing and timing. Each chapter is written by international experts and amply illustrated with figures and photographs, making the book an invaluable resource for scientists, engineers, students and institutions alike.

Materials for High-Temperature Semiconductor Devices - National Research Council 1995-10-14

Major benefits to system architecture would result if cooling systems for components could be eliminated without compromising performance. This book surveys the state-of-the-art for the three major wide bandgap materials (silicon carbide, nitrides, and diamond), assesses the national and international efforts to develop these materials, identifies the technical barriers to their development and manufacture, determines the criteria for successfully packaging and integrating these devices into existing systems, and recommends future research priorities.

The Psychology of Driving - Graham J. Hole 2014-07-10

Road accidents are the major cause of death and injury among young people in the developing world, and the field of psychology can offer great insights into the many factors that are at play when we get behind the wheels of our cars. Based on data collected around the world on drivers of all age groups, Graham Hole provides an up to date picture of the realities of driving, including visual perception issues, cell phone distractions, fatigue, drugs, and the effects of aging. These insights can help explain why we crash, as well as how we achieve the amazing feat of not crashing more often than we do. In this jargon-free and very accessible book, Hole applies psychological methods and insights to this every-day experience with two audiences in mind. First, he speaks to accident investigators, who frequently rely on well-developed understandings of engineering and forensics and less insight into the psychology of the driver. Second, of course, this book will be of value to anyone interested in the application of cognitive psychology to real-world

behaviors, and to anyone who drives.

Untersuchung diffus spiegelnder Oberflaechen mittels

Infrarotdeflektometrie - Hoefer, Sebastian 2017-12-19

Multidisciplinary Research on Teaching and Learning - Wolfgang Schnotz 2015-04-07

Educational research encompasses different scientific cultures with different tools, practices, views, and languages, which frequently makes communication difficult. This collection indicates how research on teaching and learning from multiple scientific disciplines such as educational science, psychology, and various domain-specific instructional sciences can be successfully pursued by a co-operation between researchers and experienced school teachers. Each chapter aims at process-oriented rather than only outcome-oriented research. The contributors promote analyses from multiple perspectives and adopt different methodological approaches, ranging from field research to laboratory experiments.

A Flight Study of the Conversion Maneuver of a Tilt-wing VTOL

Aircraft - Lovic P. Thomas 1959

Technische Temperaturmessung - Frank Bernhard 2013-03-11

Das Handbuch für den praktischen Einsatz ermöglicht eine umfassende Einarbeitung in die technische Temperaturmessung. Die physikalischen und messtechnischen Grundlagen, Sensoren und Messverfahren, Messfehler und Kalibrierung, Kennwerte und Kennlinien der Messgeräte werden ebenso beschrieben und kommentiert wie anwendungsspezifische Probleme, Fehlermöglichkeiten und Einflussfaktoren. Das Buch geht auf die internationale Temperaturskala ITS-90 und die entsprechend genormten Standardkennlinien für Thermoelemente und Widerstandsthermometer der IEC ein. Der Herausgeber und zwölf namhafte Autoren führen hier Kenntnisse über die Temperaturmessung zu einem bislang einmaligen Handbuch zusammen, die rechnerische, modellgestützte Abschätzung von sensorbezogenen und anwendungsbedingten Messfehlern und ihrer

Korrektur.

Wärmebildkamera - Christof Linde 2013-11-30

Controller Area Network Projects - Dogan Ibrahim 2011

The Controller Area Network (CAN) was originally developed to be used as a vehicle data bus system in passenger cars. Today, CAN controllers are available from over 20 manufacturers, and CAN is finding applications in other fields, such as medical, aerospace, process control, automation, and so on. This book is written for students, for practising engineers, for hobbyists, and for everyone else who may be interested to learn more about the CAN bus and its applications. The aim of this book is to teach you the basic principles of CAN networks and in addition the development of microcontroller based projects using the CAN bus. In summary, this book enables the reader to: Learn the theory of the CAN bus used in automotive industry; Learn the principles, operation, and programming of microcontrollers; Design complete microcontroller based projects using the C language; Develop complete real CAN bus projects using microcontrollers; Learn the principles of OBD systems used to debug vehicle electronics. You will learn how to design microcontroller based CAN bus nodes, build a CAN bus, develop high-level programs, and then exchange data in real-time over the bus. You will also learn how to build microcontroller hardware and interface it to LEDs, LCDs, and A/D converters. The book assumes that the reader has some knowledge on basic electronics. Knowledge of the C programming language will be useful in later chapters of the book, and familiarity with at least one member of the PIC series of microcontrollers will be an advantage, especially if the reader intends to develop microcontroller based projects using the CAN bus. The CD contains a special demo version of the mikroC compiler which supports the key microcontrollers including: PIC, dsPIC, PIC24, PIC32 and AVR. This special version additionally features an advanced CAN library of intuitive and simple-to-use functions to encourage programming with easy and comfortable development of CAN networks.

Schülerlabore als interessefördernde authentische Lernorte für den

naturwissenschaftlichen Unterricht nutzen - Tobias Schüttler 2022-03-31
Schülerlabore wie die DLR_School_Labs des Deutschen Zentrums für Luft- und Raumfahrt haben das Ziel, das Interesse an und Verständnis für Naturwissenschaften zu fördern und den Schulunterricht durch Einblicke in die Welt der Hochtechnologieforschung zu ergänzen und zu bereichern. Als wichtiges Merkmal, welches den Erfolg dieser außerschulischen Lernorte maßgeblich mitbeeinflusst, wird häufig die dort in besonderer Weise erlebbare Authentizität genannt. Die Ergebnisse der hier beschriebenen quasiexperimentellen Feldstudie stützen diese Sichtweise: Jugendliche, die am authentischen Lernort Schülerlabor mit echten High-End-Laborgeräten experimentieren konnten, zeichneten sich im Vergleich zu solchen in weniger authentischen Lernsettings durch ein höheres situationales Interesse sowie stärker wahrgenommene inhaltliche Relevanz und Authentizität aus. Auch der Wunsch, später einmal einen Beruf mit Bezügen zur Physik zu ergreifen, wurde in dieser Gruppe am stärksten gefördert. Die authentischen Lernorte können zudem neue Themen für den Unterricht erschließen. Im Rahmen der Studie wurden Infrarotsensoren entwickelt, welche erstmals die Fernerkundung von Vegetation anhand des Normalisierten Differenzierten Vegetationsindex (NDVI) im Physikunterricht mit Messungen im eigenen Umfeld ermöglichen.

Understanding Flight, Second Edition - David W. Anderson
2009-05-01

Discover how planes get--and stay--airborne Now you can truly master an understanding of the phenomenon of flight. This practical guide is the most intuitive introduction to basic flight mechanics available. Understanding Flight, Second Edition, explains the principles of aeronautics in terms, descriptions, and illustrations that make sense--without complicated mathematics. Updated to include helicopter flight fundamentals and aircraft structures, this aviation classic is required reading for new pilots, students, engineers, and anyone fascinated with flight. Understanding Flight, Second Edition, covers: Physics of flight Wing design and configuration Stability and control Propulsion High-speed flight Performance and safety Aerodynamic testing Helicopters

and autogyros Aircraft structures and materials

Sound-Engineering im Automobilbereich - Klaus Genuit 2010-12-17

Mit steigenden Kundenansprüchen gewinnen die Fragen unerwünschter Geräusche im Kraftfahrzeug zunehmend an Bedeutung. Sie begleiten Ingenieure im Automobilbereich von der Konzept- bis zur Serienphase. Dabei ist das Thema stets im Kontext weiterer Entwicklungsfelder wie Antrieb oder Aerodynamik zu betrachten. Das Überblickswerk bietet die Möglichkeit, sich schnell in das Thema einzuarbeiten und schnell auf Grundlagen und Details zugreifen zu können. Dabei werden die Themen Fahrzeuginnengeräusche und Fahrzeugaußengeräusche gleichermaßen behandelt.

Biology with Vernier - Kelly Redding 2007-01-01

Ironmaking and Steelmaking Processes - Pasquale Cavaliere 2016-09-02

This book describes improvements in the iron and steel making process in the past few decades. It also presents new and improved solutions to producing high quality products with low greenhouse emissions. In addition, it examines legislative regulations regarding greenhouse emissions all around the world and how to control these dangerous emissions in iron and steel making plants.

MIT App Inventor Projects - Dogan Ibrahim 2020

1. Fachkongress Digitale Transformation im Lebenszyklus der Verkehrsinfrastruktur - Jürgen Krieger 2021-07-12

Technologische Entwicklungen sind die Voraussetzung für eine ganzheitliche Digitalisierung. Im Zeitalter des Digitalen Wandels sind Daten ein wertvoller Rohstoff für Informationen, neue Technologien, Prozesse und Ideen. Diese können die Produktivität positiv beeinflussen. Im Vergleich zu anderen Branchen stagniert die Produktivität in der Baubranche allerdings fast vollständig. Ursache hierfür ist unter anderem die geringe Digitalisierung etablierter Abläufe und geringe Neuschöpfung von Verfahren und Prozessen. Dabei bestehen vielfältige Potenziale der Digitalen Transformation in allen Phasen des Lebenszyklus der Verkehrsinfrastruktur. Ein Beispiel für solche

Entwicklungen ist der Digital Twin – das virtuelle Abbild eines realen Objekts, das sich kontinuierlich über dessen Daten und Informationen aktualisiert und u. a. die Durchführung virtueller Experimente ermöglicht. In Anbetracht von großen Datenmengen (Big Data) gewinnen zunehmend Smart-Data-Anwendungen, Verfahren der künstlichen Intelligenz und des maschinellen Lernens an Bedeutung bei der Auswertung von Daten. Die Ergebnisse können über Technologien der Virtual und Augmented Reality visualisiert werden. Vor diesem Hintergrund ist das Hauptziel des erstmals stattfindenden Fachkongresses der verkehrsträgerübergreifende Wissens- und Erfahrungsaustausch. In etwa 50 Fachvorträgen werden in parallelen Sessions Technologien und Methoden der Digitalisierung und Digitalen Transformation diskutiert.

Uses of Technology in Lower Secondary Mathematics Education - Paul Drijvers 2016-06-14

This topical survey provides an overview of the current state of the art in technology use in mathematics education, including both practice-oriented experiences and research-based evidence, as seen from an international perspective. Three core themes are discussed: Evidence of effectiveness; Digital assessment; and Communication and collaboration. The survey's final section offers suggestions for future trends in technology-rich mathematics education and provides a research agenda reflecting those trends. Predicting what lower secondary mathematics education might look like in 2025 with respect to the role of digital tools in curricula, teaching and learning, it examines the question of how teachers can integrate physical and virtual experiences to promote a deeper understanding of mathematics. The issues and findings presented here provide an overview of current research and offer a glimpse into a potential future characterized by the effective integration of technology to support mathematics teaching and learning at the lower secondary level.

Primary Perception - Cleve Backster 2003

This is the only book by Cleve Backster himself, describing 36 years of research in biocommunication, observed electrical responses in plant life

and other living organisms. All life forms have the capability of responding to one another, from plants and bacteria to foods and animal cells. Most amazing is his work with human leukocytes. These discoveries have opened up a new paradigm in science, ecology and healing.

Cavity Ring-Down Spectroscopy - Giel Berden 2009-08-11

Cavity Ring-Down Spectroscopy: Techniques and Applications provides a practical overview of this valuable analytical tool, explaining the fundamental concepts and experimental methods, and illustrating important applications. Designed as both an introductory text and a reference source, this book is relevant for scientists unfamiliar with CRDS who are interested in using the technique in their research, as well as experienced users.

Heat Transfer - Peter Böckh 2011-10-12

The book provides an easy way to understand the fundamentals of heat transfer. The reader will acquire the ability to design and analyze heat exchangers. Without extensive derivation of the fundamentals, the latest correlations for heat transfer coefficients and their application are discussed. The following topics are presented - Steady state and transient heat conduction - Free and forced convection - Finned surfaces - Condensation and boiling - Radiation - Heat exchanger design - Problem-solving After introducing the basic terminology, the reader is made familiar with the different mechanisms of heat transfer. Their practical application is demonstrated in examples, which are available in the Internet as MathCad files for further use. Tables of material properties and formulas for their use in programs are included in the appendix. This book will serve as a valuable resource for both students and engineers in the industry. The author's experience indicates that students, after 40 lectures and exercises of 45 minutes based on this textbook, have proved capable of designing independently complex heat exchangers such as for cooling of rocket propulsion chambers, condensers and evaporators for heat pumps.

Grundlagen Automatisierung - Berthold Heinrich 2014-11-19

Aufbauend auf den Grundlagen der Fertigungsautomatisierung wird eine

praxisnahe Projektanlage konzipiert. Die Kapitel zur Sensorik, zur Steuerungs-, Regelungs- und Antriebstechnik integrieren dann die Ergebnisse in Lösungen für die Lernanlage. Ein Glossar der Fachbegriffe in Deutsch und Englisch unterstützt die weiterführende Recherche.
Mastering Microcontrollers Helped by Arduino - Clemens Valens 2016

Solar Sailing - Colin R. McInnes 2013-11-27

Solar sailing - using the sun as a propellant - offers the possibility of low-cost long-distance missions that are impossible with conventional spacecraft. This first comprehensive book on this propulsion method provides a detailed account of solar sailing, at a high technical level, but in a way accessible to the scientifically informed layperson. Solar sail orbital dynamics and solar radiation pressure form the foundations of the book, but the engineering design of solar sails is also considered, along with potential mission applications.

Learning the Art of Electronics - Thomas C. Hayes 2016-03-02

This introduction to circuit design is unusual in several respects. First, it offers not just explanations, but a full course. Each of the twenty-five sessions begins with a discussion of a particular sort of circuit followed by the chance to try it out and see how it actually behaves. Accordingly, students understand the circuit's operation in a way that is deeper and much more satisfying than the manipulation of formulas. Second, it describes circuits that more traditional engineering introductions would postpone: on the third day, we build a radio receiver; on the fifth day, we build an operational amplifier from an array of transistors. The digital half of the course centers on applying microcontrollers, but gives exposure to Verilog, a powerful Hardware Description Language. Third, it proceeds at a rapid pace but requires no prior knowledge of electronics. Students gain intuitive understanding through immersion in good circuit design.

Temperature Measurement Thermocouples - American National Standards Institute 1982

Theory and Practice of Radiation Thermometry - David P. DeWitt

1991-01-16

Here is the most comprehensive treatment available on practical temperature measurement methods using radiation thermometry. All aspects of measurement technology are covered: basic principles, types of radiation thermometers, calibration methods, and applications. Covers the latest instruments and discusses the central problem of radiation thermometry--how to infer the true temperature from the indicated temperature. Generously illustrated.

The Physics of Tire Traction - Donald Hays 2013-11-11

Sensors in Science and Technology - Ekbert Hering 2022

Sensors are used to measure physical, chemical and biological quantities. The book offers a comprehensive overview of physical principles, functions and applications of sensors. It is structured according to the fields of activity of sensors and shows their application by means of typical examples. Measured variables that can be recorded by sensors are e.g. mechanical, dynamic, thermal, electrical and magnetic. Furthermore, optical and acoustical sensors are discussed in detail in the book. The sensor signals are recorded, processed and converted into control signals for actuators. Such sensor systems are also presented. This book is a translation of the original German 2nd edition *Sensoren in Wissenschaft und Technik* by Ekbert Hering, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2017. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors. The Content Fundamentals of sensor systems · Physical effects for sensor use · Measured variables that can be recorded by sensors · Mechanical measured variables · Thermal measured variables · Electrical and magnetic measured variables · Optical measured variables · Acoustic measured variables · Climatic and meteorological measured variables ·

Chemical measured variables · Biological and medical measured variables The Target Groups " Engineers and natural scientists in practice " Students and lecturers at universities " Experts in the field of sensor technology The Authors Prof. Dr. Ekbert Hering has been teaching physics, electronics, photonics and business administration at Aalen University since 1971. He was rector of the university, served on various supervisory boards and was the author of 70 textbooks, 45 of which were published by Springer Vieweg. Dr.-Ing. Gert Schönfelder received his doctorate in digital measurement technology. He worked in the field of computer architecture, image-based measurement technology (stereo) and system design of cameras and measurement technology. Since 8 years he is head of development at a manufacturer of pressure sensors.

Career Express: Business English C1 - Jane Maier-Fairclough 2013-03-01

Career Express Level C1 Teacher's Book Career Express Business English C1 is the second part of a two-level multimedia course, for students on a Business English language course at university level. Reading -The texts focus on the most interesting topics from the world of business. They provide the springboard for a discussion of contemporary business issues. Listening -Realistic conversations, presentations and lectures expose you to a variety of native and non-native speaker accents and help you to develop core listening comprehension skills. Business Skills -This section introduces you to the skills most needed in business, such as taking part in meetings, using diplomacy at work, describing charts and presenting products. Discussion and Role-Play -These features give you the opportunity to pick up on issues raised in the reading and listening sections, and to practise functional language. Company Case - These task-based case studies have been inspired by real business scenarios. They require you to work in teams, find strategic solutions to real-life problems and present them to the class. Audio CDs -Complete recordings for all the listening activities in the Course Book. Career Express Self Study Online -This website offers an abundance of additional material: Electronic Workbook with interactive practice

exercises to consolidate vocabulary, grammar, reading and skills Self-assessment tests for each unit Tailor-made videos with interactive exercises The complete Course Book listening material as MP3 downloads

Infrared Thermal Imaging - Michael Vollmer 2018-02-20

This new up-to-date edition of the successful handbook and ready reference retains the proven concept of the first, covering basic and advanced methods and applications in infrared imaging from two leading expert authors in the field. All chapters have been completely revised and expanded and a new chapter has been added to reflect recent developments in the field and report on the progress made within the last decade. In addition there is now an even stronger focus on real-life examples, with 20% more case studies taken from science and industry. For ease of comprehension the text is backed by more than 590 images which include graphic visualizations and more than 300 infrared thermography figures. The latter include many new ones depicting, for example, spectacular views of phenomena in nature, sports, and daily life.

Handbook of Thin Film Technology - Hartmut Frey 2015-05-06

“Handbook of Thin Film Technology” covers all aspects of coatings preparation, characterization and applications. Different deposition techniques based on vacuum and plasma processes are presented. Methods of surface and thin film analysis including coating thickness, structural, optical, electrical, mechanical and magnetic properties of films are detailed described. The several applications of thin coatings and a special chapter focusing on nanoparticle-based films can be found in this handbook. A complete reference for students and professionals interested in the science and technology of thin films.

Single-Use Technology in Biopharmaceutical Manufacture - Regine Eibl 2019-07-24

Authoritative guide to the principles, characteristics, engineering aspects, economics, and applications of disposables in the manufacture of biopharmaceuticals The revised and updated second edition of Single-Use Technology in Biopharmaceutical Manufacture offers a

comprehensive examination of the most-commonly used disposables in the manufacture of biopharmaceuticals. The authors—noted experts on the topic—provide the essential information on the principles, characteristics, engineering aspects, economics, and applications. This authoritative guide contains the basic knowledge and information about disposable equipment. The author also discusses biopharmaceuticals’ applications through the lens of case studies that clearly illustrate the role of manufacturing, quality assurance, and environmental influences. This updated second edition revises existing information with recent developments that have taken place since the first edition was published. The book also presents the latest advances in the field of single-use technology and explores topics including applying single-use devices for microorganisms, human mesenchymal stem cells, and T-cells. This important book:

- Contains an updated and end-to-end view of the development and manufacturing of single-use biologics
- Helps in the identification of appropriate disposables and relevant vendors
- Offers illustrative case studies that examine manufacturing, quality assurance, and environmental influences
- Includes updated coverage on cross-functional/transversal dependencies, significant improvements made by suppliers, and the successful application of the single-use technologies

Written for biopharmaceutical manufacturers, process developers, and biological and chemical engineers, *Single-Use Technology in Biopharmaceutical Manufacture, 2nd Edition* provides the information needed for professionals to come to an easier decision for or against disposable alternatives and to choose the appropriate system.

Theory of Inquiry Learning Arrangements - Johannes Reitingger 2016-01-01

Human beings come equipped with a tendency to generally not want to leave thinking to others. With the endeavor to professionally, reflectively, and gracefully support each individual on the basis of this tendency, the paradigm of a curious, self-determined, and inquiring human is developed in this volume, which might point the way towards a promising future. In view of such a perspective, the authors regard the pedagogical construct of self-determined Inquiry Learning as just such a

promising concept. The Theory of Inquiry Learning Arrangements (TILA) concretizes this approach according to the principles of critical multiplism. The effectivity of TILA is scrutinized via the personalized concepts AuRELIA (Authentic Reflective Exploratory Learning and Interaction Arrangements) and CrEEEd (Criteria-based Explorations in Education). These concepts are presented in detail, empirically investigated, and underpinned with practical examples. In the current edited volume, the concept of self-determined Inquiry Learning is further empirically substantiated and presented to the international community.

The Art of Electronics: The x Chapters - Paul Horowitz 2020-01-30
The Art of Electronics: The x-Chapters expands on topics introduced in the best-selling third edition of The Art of Electronics, completing the broad discussions begun in the latter. In addition to covering more advanced materials relevant to its companion, The x-Chapters also includes extensive treatment of many topics in electronics that are particularly novel, important, or just exotic and intriguing. Think of The x-Chapters as the missing pieces of The Art of Electronics, to be used either as its complement, or as a direct route to exploring some of the most exciting and oft-overlooked topics in advanced electronic engineering. This enticing spread of electronics wisdom and expertise will be an invaluable addition to the library of any student, researcher, or practitioner with even a passing interest in the design and analysis of electronic circuits and instruments. You'll find here techniques and

circuits that are available nowhere else.

Lean Human Performance Improvement - Jerry L. Harbour 2014-11-13
As companies continue their efforts to improve work performance, they must ensure that their ongoing Lean activities include a healthy appreciation for, and recognition of, human performance. Ignoring the human component of work performance can be a recipe for unnecessary waste, inefficiency, and decreased productivity. Lean Human Performance Improvement presents a broad overview of human performance in the workplace. The author discusses his findings from a broad spectrum of human performance-related fields and diverse industrial sectors (gained by working in the field for over 30 years). Organized in three sections, this book covers understanding human performance, analyzing and improving work productivity, and analyzing and improving quality and safety. The author first develops a fundamental and basic understanding of human performance, then couples that understanding with learning how to analyze and improve human-related work productivity and quality and safety. He also discusses how knowledge and skills transfer from one work setting to another. Intended for Lean Six Sigma team members and human performance improvement practitioners, the book contains multiple examples from diverse work settings to explain key points. It also includes several major case studies. The goal of all examples and case studies is to develop a generic understanding that, in turn, can be successfully applied to any work setting.