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*Democratization of Expertise SF6 Switchgear Aboriginal Settlement Patterns in the Little
Tennessee River Valley U.S. Terminal Procedures Introduction to Aircraft Flight
Mechanics Current Interruption Transients Calculation World Survey of Climatology The
Central Philosophy of Buddhism Monthly Weather Review **Chemical Engineering Design**
Transactions Switching in Electrical Transmission and Distribution Systems Toxicological
*Profile for Polycyclic Aromatic Hydrocarbons Physics with Answers Field & Stream Hazardous
Chemicals Handbook **The World Bank Participation Sourcebook A Risk-Management**
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*Survey Transforming the Future (Open Access) Sir Isaac Newton's Mathematical Principles of
Natural Philosophy and His System of the World **The Guerrilla and how to Fight Him** Power****

Electronics **Springer Handbook of Power Systems** *Cassino to the Alps* Power Electronics Handbook Business Today **Clinical Management of Male Infertility** **Official Summary of Security Transactions and Holdings Reported to the Securities and Exchange Commission Under the Securities Exchange Act of 1934 and the Public Utility Holding Company Act of 1935** **Work on Your Phrasal Verbs** Intercultural Competence *Hazardous Chemicals Desk Reference* **Motorcycle Workshop Practice Techbook** **From Cyrus to Alexander** Official Summary of Stock Transactions and Holdings of Officers, Directors, and Principal Stockholders as Reported to the Commission on Forms 4, 5, and 6 Pursuant to Section 16 of the Securities Exchange Act of 1934 **Journal of the ... Annual Convention, Diocese of Maine** **Insulation Coordination for Power Systems** *High Voltage Circuit Breakers*

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Monthly Weather Review Feb 21 2022

Intercultural Competence Jan 29 2020 This book offers students the requisite knowledge, appropriate motivations, and relevant skills to succeed in today's intercultural world. It provides a discussion of important ethical and social issues relating to intercultural communication, encouraging students to apply vivid examples that will prepare them to interact better in intercultural relationships.

Hazardous Chemicals Desk Reference Dec 30 2019 Offers a "safety profile" of 5000 of the most important hazardous chemicals. Features unique Chemical Safety Profiles that provide a quick overview of the hazards, synonyms, and physical properties of a variety of chemicals. Details government agency standards and recommendations on the handling of each chemical. Includes three cross-indices to permit rapid location of a material by its Chemical Abstract Service (CAS) number, a synonym for the material, or the DOT Guide Number. Features new chemical entries unavailable in previous versions.

Official Summary of Stock Transactions and Holdings of Officers, Directors, and Principal Stockholders as Reported to the Commission on Forms 4, 5, and 6 Pursuant to Section 16 of the Securities Exchange Act of 1934 Sep 26 2019

U.S. Terminal Procedures Jul 29 2022

Power Electronics Oct 08 2020

World Survey of Climatology Apr 25 2022

Chemical Engineering Design Jan 23 2022 Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I:

Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

Switching in Electrical Transmission and Distribution Systems Nov 20 2021 Switching in Electrical Transmission and Distribution Systems presents the issues and technological solutions associated with switching in power systems, from medium to ultra-high voltage. The book systematically discusses the electrical aspects of switching, details the way load and fault

currents are interrupted, the impact of fault currents, and compares switching equipment in particular circuit-breakers. The authors also explain all examples of practical switching phenomena by examining real measurements from switching tests. Other highlights include: up to date commentary on new developments in transmission and distribution technology such as ultra-high voltage systems, vacuum switchgear for high-voltage, generator circuit-breakers, distributed generation, DC-interruption, aspects of cable systems, disconnector switching, very fast transients, and circuit-breaker reliability studies. Key features: Summarises the issues and technological solutions associated with the switching of currents in transmission and distribution systems. Introduces and explains recent developments such as vacuum switchgear for transmission systems, SF₆ environmental consequences and alternatives, and circuit-breaker testing. Provides practical guidance on how to deal with unacceptable switching transients. Details the worldwide IEC (International Electrotechnical Commission) standards on switching equipment, illustrating current circuit-breaker applications. Features many figures and tables originating from full-power tests and established training courses, or from measurements in real networks. Focuses on practical and application issues relevant to practicing engineers. Essential reading for electrical engineers, utility engineers, power system application engineers, consultants and power systems asset managers, postgraduates and final year power system undergraduates.

Current Interruption Transients Calculation May 27 2022 Provides an original, detailed, and practical description of current interruption transients, origins, and the circuits involved, and shows how they can be calculated Based on a course that has been presented by the author worldwide, this book teaches readers all about interruption transients calculation—showing how

they can be calculated using only a hand calculator and Excel. It covers all the current interruption cases that occur on a power system and relates oscillatory circuit (transients) and symmetrical component theory to the practical calculation of current interruption transients as applied to circuit breaker application. The book explains all cases first in theory, and then illustrates them with practical examples. Topics featured in Current Interruption Transients Calculation, Second Edition include: RLC Circuits; Pole Factor Calculation; Terminal Faults; Short Line Faults; Inductive Load Switching; and Capacitive Load Switching. The book also features numerous appendices that cover: Differential Equations; Principle of Duality; Useful Formulae; Euler's Formula; Asymmetrical Current-Calculating Areas Under Curves; Shunt Reactor Switching; and Generator Circuit Breaker TRVs. Offers a clear explanation of how to calculate transients without the use of specialist software, showing how four basic circuits can represent all transients Describes every possible current interruption case that can arise on a power system, explaining them through theory and practical examples Analyses oscillatory circuit (transients) and symmetrical component theory in detail Takes a practical approach to the subject so engineers can use the knowledge in circuit breaker applications Current Interruption Transients Calculation, Second Edition is an ideal book for power electrical engineers, as well as transmission and distribution staff in the areas of planning and system studies, switchgear application, specification and testing, and commissioning and system operation.

From Cyrus to Alexander Oct 27 2019 Around 550 B.C.E. the Persian people—who were previously practically unknown in the annals of history—emerged from their base in southern Iran (Fars) and engaged in a monumental adventure that, under the leadership of Cyrus the Great

and his successors, culminated in the creation of an immense Empire that stretched from central Asia to Upper Egypt, from the Indus to the Danube. The Persian (or Achaemenid, named for its reigning dynasty) Empire assimilated an astonishing diversity of lands, peoples, languages, and cultures. This conquest of Near Eastern lands completely altered the history of the world: for the first time, a monolithic State as vast as the future Roman Empire arose, expanded, and matured in the course of more than two centuries (530–330) and endured until the death of Alexander the Great (323), who from a geopolitical perspective was “the last of the Achaemenids.” Even today, the remains of the Empire—the terraces, palaces, reliefs, paintings, and enameled bricks of Pasargadae, Persepolis, and Susa; the impressive royal tombs of Naqsh-e Rostam; the monumental statue of Darius the Great—serve to remind visitors of the power and unprecedented luxury of the Great Kings and their loyal courtiers (the “Faithful Ones”). Though long eclipsed and overshadowed by the towering prestige of the “ancient Orient” and “eternal Greece,” Achaemenid history has emerged into fresh light during the last two decades. Freed from the tattered rags of “Oriental decadence” and “Asiatic stagnation,” research has also benefited from a continually growing number of discoveries that have provided important new evidence—including texts, as well as archaeological, numismatic, and iconographic artifacts. The evidence that this book assembles is voluminous and diverse: the citations of ancient documents and of the archaeological evidence permit the reader to follow the author in his role as a historian who, across space and time, attempts to understand how such an Empire emerged, developed, and faded. Though firmly grounded in the evidence, the author’s discussions do not avoid persistent questions and regularly engages divergent interpretations and alternative hypotheses. This book

is without precedent or equivalent, and also offers an exhaustive bibliography and thorough indexes. The French publication of this magisterial work in 1996 was acclaimed in newspapers and literary journals. Now *Histoire de l'Empire Perse: De Cyrus a Alexandre* is translated in its entirety in a revised edition, with the author himself reviewing the translation, correcting the original edition, and adding new documentation. Pierre Briant, Chaire Histoire et civilisation du monde achéménide et de l'empire d'Alexandre, Collège de France, is a specialist in the history of the Near East during the era of the Persian Empire and the conquests of Alexander. He is the author of numerous books. Peter T. Daniels, the translator, is an independent scholar, editor, and translator who studied at Cornell University and the University of Chicago. He lives and works in New York City.

The Central Philosophy of Buddhism Mar 25 2022 Description: There is a class of scholars who are of the opinion that Buddhism in general, and Madhyamaka of Nagarjuna in particular, is not only deconstructionistic in orientation, but also nihilistic in content. How far this assertion is tenable or valid depends from what perspective we look at the Middle Way philosophy of Nagarjuna. While analysing the general orientation of Buddhist thought, Prof. Murti shows that Nagarjuna's philosophy, although deconstructionistic in its approach, is not at all nihilistic in orientation. The dialectical methods of the *reductio ad absurdum*, which Nagarjuna employs as a basic tool of critique, is meant to show that reason cannot reach or comprehend that which is *a priori* of the Beyond, or what we call Transcendent. It is through the method of negation that Nagarjuna, on the one hand, affirms the Buddha's noble silence concerning that which is inexpressible, and confirms, on the other hand, that the Absolute as Emptiness can be intuited

only through the silence of negation. The Emptiness of the Madhyamaka, thus, must not be seen as a philosophy of nihilism; rather it must be viewed as pointing out the limitations of Reason, or what we call conceptual knowledge, in the context of that which is beyond reason, and therefore transcendent to thought and language. The emergence of the Madhyamaka philosophy was a radical turning point in the evolution of Buddhist thought in terms of which the untenability of realism of early Buddhism is established. Simultaneously the Madhyamaka hastened the emergence of idealism in the form of Yogacara-vijnanavada school. Both the Madhyamaka and Yogacara-vijnanavada schools of thought of Mahayana Buddhism gave a new direction to Indian philosophy as such, and found its ultimate expression in the philosophy of Advaita Vedanta of Samkara. While delineating the various aspects of Madhyamaka thought in relation to Abhidharmic realism and Brahmanical idealism, Prof. Murti at the same time has analysed the close resemblance that occurs between the philosophy of Kant and Hegel, on the one hand, and Nagarjuna, on the other. Thus the book is a veritable treasure of information concerning the evolution of human thought in the East and West. This book is a must for such seekers of truth who would like to plunge to the depths of knowledge.

Insulation Coordination for Power Systems Jul 25 2019 This detailed and comprehensive reference presents the latest developments in power system insulation coordination—emphasizing the achievement of optimum insulation strength at minimum cost. Comprehensively covering a myriad of insulation coordination techniques, the book examines electrical transmission and distribution lines and substations. Supplemented with end-of-chapter problem sets and over 1700 literature citations, tables, drawings, and equations, the book focuses

on the conventional (or deterministic) method of insulation coordination, as well as the probabilistic method with its emphasis on statistical analysis.

Addressing Sickle Cell Disease Mar 13 2021 Sickle cell disease (SCD) is a genetic condition that affects approximately 100,000 people in the United States and millions more globally. Individuals with SCD endure the psychological and physiological toll of repetitive pain as well as side effects from the pain treatments they undergo. Some adults with SCD report reluctance to use health care services, unless as a last resort, due to the racism and discrimination they face in the health care system. Additionally, many aspects of SCD are inadequately studied, understood, and addressed. *Addressing Sickle Cell Disease* examines the epidemiology, health outcomes, genetic implications, and societal factors associated with SCD and sickle cell trait (SCT). This report explores the current guidelines and best practices for the care of patients with SCD and recommends priorities for programs, policies, and research. It also discusses limitations and opportunities for developing national SCD patient registries and surveillance systems, barriers in the healthcare sector associated with SCD and SCT, and the role of patient advocacy and community engagement groups.

2003 Consumer Expenditure Interview Survey Feb 09 2021

The Guerrilla and how to Fight Him Nov 08 2020

Toxicological Profile for Polycyclic Aromatic Hydrocarbons Oct 20 2021

A Risk-Management Strategy for PCB-Contaminated Sediments May 15 2021 This book provides a risk-based framework for developing and implementing strategies to manage PCB-contaminated sediments at sites around the country. The framework has seven stages, beginning

with problem definition, continuing through assessment of risks and management options, and ending with an evaluation of the success of the management strategy. At the center of the framework is continuous and active involvement of all affected parties-particularly communities-in the development, implementation, and evaluation of the management strategy. A Risk-Management Strategy for PCB-Contaminated Sediments emphasizes the need to consider all risks at a contaminated site, not just human health and ecological effects, but also the social, cultural, and economic impacts. Given the controversy that has arisen at many PCB-contaminated sites, this book provides a consistent, yet flexible, approach for dealing with the many issues associated with assessing and managing the risks at Superfund and other contaminated sites.

Springer Handbook of Power Systems Sep 06 2020 This handbook offers a comprehensive source for electrical power professionals. It covers all elementary topics related to the design, development, operation and management of power systems, and provides an insight from worldwide key players in the electrical power systems industry. Edited by a renowned leader and expert in Power Systems, the book highlights international professionals' longstanding experiences and addresses the requirements of practitioners but also of newcomers in this field in finding a solution for their problems. The structure of the book follows the physical structure of the power system from the fundamentals through components and equipment to the overall system. In addition the handbook covers certain horizontal matters, for example "Energy fundamentals", "High voltage engineering", and "High current and contact technology" and thus intends to become the major one-stop reference for all issues related to the electrical power

system.

Journal of the ... Annual Convention, Diocese of Maine Aug 25 2019

Informationsgehalt manipulierbarer Periodenergebnisse Apr 13 2021 Lars Dyrskjøt Wellejus analysiert die Reversion eines durch Modifikation von Rechnungslegung entstandenen Informationsdefizits anhand eines informationsökonomischen Berichtsmodells, das die multiperiodige Gewinnverschiebung zu einem ganzzahligen quadratischen Transportkostenproblem stilisiert.

Cassino to the Alps Aug 06 2020 This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

Physics with Answers Sep 18 2021 This book contains 500 problems covering all of introductory physics, along with clear, step-by-step solutions to each problem.

Clinical Management of Male Infertility May 03 2020 This book provides andrologists and other practitioners with reliable, up-to-date information on all aspects of male infertility and is

designed to assist in the clinical management of patients. Clear guidance is offered on classification of infertility, sperm analysis interpretation and diagnosis. The full range of types and causes of male infertility are then discussed in depth. Particular attention is devoted to poorly understood conditions such as unexplained couple infertility and idiopathic male infertility, but the roles of diverse disorders, health and lifestyle factors and environmental pollution are also fully explored. Research considered stimulating for the reader is highlighted, reflecting the fascinating and controversial nature of the field. International treatment guidelines are presented and the role of diet and dietary supplements is discussed in view of their increasing importance. Clinicians will find that the book's straightforward approach ensures that it can be easily and rapidly consulted.

Field & Stream Aug 18 2021 FIELD & STREAM, America's largest outdoor sports magazine, celebrates the outdoor experience with great stories, compelling photography, and sound advice while honoring the traditions hunters and fishermen have passed down for generations.

Business Today Jun 03 2020

The World Bank Participation Sourcebook Jun 15 2021 Presents case studies resulting from participation in the World Bank by developing countries such as Chad, Brazil, and Nigeria

Motorcycle Workshop Practice Techbook Nov 28 2019 Haynes has discovered all the problems that motorcycle owners could possibly encounter when rebuilding or repairing their bikes. Documenting the most common DIY fixes with hundreds of illustrations and step-by-step instructions, this compendium of repair, modification and troubleshooting advice is applicable to all domestic and import marques.

Aboriginal Settlement Patterns in the Little Tennessee River Valley Aug 30 2022

Power Electronics Handbook Jul 05 2020 Power electronics, which is a rapidly growing area in terms of research and applications, uses modern electronics technology to convert electric power from one form to another, such as ac-dc, dc-dc, dc-ac, and ac-ac with a variable output magnitude and frequency. Power electronics has many applications in our every day life such as air-conditioners, electric cars, sub-way trains, motor drives, renewable energy sources and power supplies for computers. This book covers all aspects of switching devices, converter circuit topologies, control techniques, analytical methods and some examples of their applications. * 25% new content * Reorganized and revised into 8 sections comprising 43 chapters * Coverage of numerous applications, including uninterruptable power supplies and automotive electrical systems * New content in power generation and distribution, including solar power, fuel cells, wind turbines, and flexible transmission

Introduction to Aircraft Flight Mechanics Jun 27 2022 Based on a 15-year successful approach to teaching aircraft flight mechanics at the US Air Force Academy, this text explains the concepts and derivations of equations for aircraft flight mechanics. It covers aircraft performance, static stability, aircraft dynamics stability and feedback control.

High Voltage Circuit Breakers Jun 23 2019 This newly revised and updated reference presents sensible approaches to the design, selection, and usage of high-voltage circuit breakers- highlighting compliance issues concerning new and aging equipment to the evolving standards set forth by the American National Standards Institute and the International Electrotechnical Commission. This edition features the latest advances in mechanical and dielectric design and

application from a simplified qualitative perspective. *High Voltage Circuit Breakers: Design and Applications* features new material on contact resistance, insulating film coatings, and fretting; temperature at the point of contact; short-time heating of copper; erosion and electromagnetic forces on contacts; closing speed and circuit breaker requirements; "weld" break and contact bounce; factors influencing dielectric strength; air, SF₆, vacuum, and solid insulation; and dielectric loss and partial discharges, and includes updated chapters on capacitance switching; switching series and shunt reactors; temporary overvoltages; and the benefits of condition monitoring.

Hazardous Chemicals Handbook Jul 17 2021 Summarizes core information for quick reference in the workplace, using tables and checklists wherever possible. Essential reading for safety officers, company managers, engineers, transport personnel, waste disposal personnel, environmental health officers, trainees on industrial training courses and engineering students. This book provides concise and clear explanation and look-up data on properties, exposure limits, flashpoints, monitoring techniques, personal protection and a host of other parameters and requirements relating to compliance with designated safe practice, control of hazards to people's health and limitation of impact on the environment. The book caters for the multitude of companies, officials and public and private employees who must comply with the regulations governing the use, storage, handling, transport and disposal of hazardous substances. Reference is made throughout to source documents and standards, and a Bibliography provides guidance to sources of wider ranging and more specialized information. Dr Phillip Carson is Safety Liaison and QA Manager at the Unilever Research Laboratory at Port Sunlight. He is a member of the

Institution of Occupational Safety and Health, of the Institution of Chemical Engineers' Loss Prevention Panel and of the Chemical Industries Association's 'Exposure Limits Task Force' and 'Health Advisory Group'. Dr Clive Mumford is a Senior Lecturer in Chemical Engineering at the University of Aston and a consultant. He lectures on several courses of the Certificate and Diploma of the National Examining Board in Occupational Safety and Health. [Given 5 star rating] - Occupational Safety & Health, July 1994 - Loss Prevention Bulletin, April 1994 - Journal of Hazardous Materials, November 1994 - Process Safety & Environmental Prot., November 1994

SF6 Switchgear Sep 30 2022 SF6 is a colorless, odorless, tasteless, non-toxic gas (down to -20 degrees C) which has nearly ideal properties as an arc-quenching medium. Ryan and Jones (electrical engineering, Sunderland Polytechnic and U. of Liverpool) review the characteristics of SF6, discuss arc modelling methods, its use in switchgears, operation of circuit breakers; and reflect upon its impact on regulations, testing and instrumentation. History and synthesis are neglected. Annotation copyrighted by Book News, Inc., Portland, OR

Work on Your Phrasal Verbs Mar 01 2020 "Collins Work on your Phrasal Verbs presents the 400 most common phrasal verbs. Each phrasal verb is covered in depth with clear examples, definitions and exercises to help students become confident using them." _Contracub.

Official Summary of Security Transactions and Holdings Reported to the Securities and Exchange Commission Under the Securities Exchange Act of 1934 and the Public Utility Holding Company Act of 1935 Apr 01 2020

Sir Isaac Newton's Mathematical Principles of Natural Philosophy and His System of the World

Dec 10 2020 I consider philosophy rather than arts and write not concerning manual but natural powers, and consider chiefly those things which relate to gravity, levity, elastic force, the resistance of fluids, and the like forces, whether attractive or impulsive; and therefore I offer this work as the mathematical principles of philosophy. In the third book I give an example of this in the explication of the System of the World. I derive from celestial phenomena the forces of gravity with which bodies tend to the sun and other planets.

Transactions Dec 22 2021

Transforming the Future (Open Access) Jan 11 2021 People are using the future to search for better ways to achieve sustainability, inclusiveness, prosperity, well-being and peace. In addition, the way the future is understood and used is changing in almost all domains, from social science to daily life. This book presents the results of significant research undertaken by UNESCO with a number of partners to detect and define the theory and practice of anticipation around the world today. It uses the concept of 'Futures Literacy' as a tool to define the understanding of anticipatory systems and processes – also known as the Discipline of Anticipation. This innovative title explores: • new topics such as Futures Literacy and the Discipline of Anticipation; • the evidence collected from over 30 Futures Literacy Laboratories and presented in 14 full case studies; • the need and opportunity for significant innovation in human decision-making systems. This book will be of great interest to scholars, researchers, policy-makers and students, as well as activists working on sustainability issues and innovation, future studies and anticipation studies. The Open Access version of this book, available at <https://www.taylorfrancis.com/books/e/9781351047999>, has been made available under a

Attribution-NonCommercial-NoDerivs 3.0 IGO (CC-BY-NC-ND 3.0 IGO) license.

Democratization of Expertise Nov 01 2022 We create technology enabling us to do things never before possible and it ultimately changes the way we live, work, play, and interact with each other. Throughout human history, the democratization of technology making a technology available to the masses, has brought about sweeping cultural, social, political, and societal changes. In the last half-century, the democratization of computers, information, the Internet, and social media have revolutionized and transformed our lives. We now stand at the beginning of a new era sure to bring about waves of new revolutions, the cognitive systems era. Until now, humans have done all of the thinking. However, our lives are about to be infused with artificial entities capable of performing high-level cognitive processing previously possible only in the human mind. Systems capable of this kind of "synthetic cognition" will achieve and surpass the level of human experts in almost every field of endeavor. Far from replacing humans, these cognitive systems will be our collaborators, teachers, confidants, colleagues, and companions. The future will belong to those who can better partner with these cognitive systems. Made available to the average person via the Internet, handheld devices, and through ordinary objects all around us, expertise will become democratized. Everything will change when anyone has access to expertise in any field and new things will be possible. The democratization of expertise is the foundation on which our society's revolutions will be built over the next half-century. This book discusses societal and cultural revolutions throughout history brought about by the adoption of new technology and gives brief histories of human cognitive augmentation and artificial intelligence. In the coming cognitive systems era, humans, by collaboratively partnering with

cognitive systems, will together achieve expert-level performance—synthetic expertise—with humans performing some of the cognitive processing and cognitive systems performing some. As the capabilities of cognitive systems improve over time, the balance of thinking will shift from being mostly human to mostly artificial. This book introduces the Levels of Cognitive Augmentation to describe this shift. Drawing from previous research in cognitive systems and intelligent agent theory, the knowledge stores required for expertise are identified in a Knowledge Level description of expertise. This book introduces a new abstract level, called the Expertise Level to describe the skills needed for expertise. Combining the knowledge-level and expertise-level descriptions, this book introduces the Model of Expertise. This book demonstrates use of the Model of Expertise by presenting several synthetic expert architectures: a synthetic teacher (Synthia), a synthetic friend/therapist (Sy), a synthetic elderly companion (Lois), a synthetic research companion (Synclair), and an automated scientific hypothesis explorer (Ashe). This book is intended for anyone interested in the fields of cognitive systems, cognitive computing, cognitive augmentation, or artificial intelligence or the impact of technologies from these fields on society. Anyone doing research and development in the area of cognitive systems or artificial intelligence will find this book particularly useful.