

# Access Free Technical Publications Engineering Pune University Free Download Pdf

**Handbook on ICT in Developing Countries** **Electrical Instrumentation & Process Control** **Authorization and Access Control** **Quality of Work-Life During Pandemic** **Innovation in Electrical Power Engineering, Communication, and Computing Technology** **Kinematics of Machinery** **Basic Electrical & Instrumentation Engineering** **Identity Management for Internet of Things** **Electromagnetic Field Theory** **Research Advances in the Integration of Big Data and Smart Computing** **Electronic Circuits-I** **Electron Devices and Circuits** **Basic Electrical Engineering** **Intelligent Computing and Information and Communication Research Methodology** **The Convergence of Internet of Things and Cloud for Smart Computing** **Ternary Digital System** **Advances in Civil Engineering and Building Materials** **Intelligent Innovations in Multimedia** **Data Engineering and Management** **Basic Electrical Measurements and Instrumentation** **War, Culture and Society in Early Modern South Asia, 1740-1849** **Control System Theory** **Basic Mechanical Engineering** **Mihir's Handbook of Chemical Process Engineering (Excerpts)** **Information and Communication Technology for Competitive Strategies** **The Valuation of Digital Intangibles** **Electrical Machines - I** **Disruptive Developments in Biomedical Applications** **Transmission and Distribution** **Mystic Science of Vastu** **Internet of Things** **Integrated Augmented Reality** **Object Detection by Stereo Vision Images** **Proceeding of First Doctoral Symposium on Natural Computing Research** **Foundations of Data Science Based Healthcare** **Internet of Things** **Control System Engineering** **Electronic Measurements and Instrumentation** **Transformers and Generators** **Mechanical Design, Materials and Manufacturing** **Privacy and Security Policies in Big Data** **Transmission Lines & Waveguides**

**Foundations of Data Science Based Healthcare Internet of Things** Dec 31 2019 This book offers a basic understanding of the Internet of Things (IoT), its design issues and challenges for healthcare applications. It also provides details of the challenges of healthcare big data, role of big data in healthcare and techniques, and tools for IoT in healthcare. This book offers a strong foundation to a beginner. All technical details that include healthcare data collection unit, technologies and tools used for the big data analytics implementation are explained in a clear and organized format.

**Information and Communication Technology for Competitive Strategies** Oct 09 2020 This book contains 74 papers presented at ICTCS 2017: Third International Conference on Information and Communication Technology for Competitive Strategies. The conference was held during 16–17 December 2017, Udaipur, India and organized by Association of Computing Machinery, Udaipur Professional Chapter in association with The Institution of Engineers (India), Udaipur Local Center and Global Knowledge Research Foundation. This book contains papers mainly focused on ICT for Computation, Algorithms and Data Analytics and IT Security etc.

**Basic Electrical Engineering** Oct 21 2021 The book is written for an undergraduate course on the Basic Electrical Engineering. It provides comprehensive explanation of theory and practice of electrical engineering. It elaborates various aspects of d.c. and a.c. circuit analysis, magnetic circuits, measuring instruments, single phase transformers and various electrical machines. The book starts with the concepts of electric charge, current and potential difference. It explains Kirchhoff's laws, star-delta transformation, mesh analysis and node analysis. It also covers the application of various network theorems in analyzing d.c. circuits. The book incorporates detailed discussion of steady state analysis of single-phase series and parallel a.c. circuits along with the resonance. The book also explains the three phase balanced circuits, three phase power measurement and power factor improvement. The simple techniques and stepwise methods used to explain the phasor diagrams is the feature of the book. The book teaches the theory of various electrical measuring instruments. The book also covers the concept of earthing and electrical safety, which is most important while dealing with the electrical equipment's. The book also includes the discussion of magnetic circuits, self and mutual inductances and magnetic hysteresis. The book further explains the details of single-phase transformers and various electrical machines such as d.c. machines, three phase and single-phase induction motors and synchronous machines. The brief introduction of power system is also incorporated in the book. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. All the chapters are arranged in a proper sequence that permits each topic to build upon earlier studies. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the basic electrical engineering in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Identity Management for Internet of Things** Mar 26 2022 The Internet of Things is a wide-reaching network of devices, and these devices can intercommunicate and collaborate with each other to produce variety of services at any time, any place, and in any way. Maintaining access control, authentication and managing the identity of devices while they interact with other devices, services and people is an important challenge for identity management. The identity management presents significant challenges in the current Internet communication. These challenges are exacerbated in the internet of things by the unbound number of devices and expected limitations in constrained resources. Current identity management solutions are mainly concerned with identities that are used by end users, and services to identify themselves in the networked world. However, these identity management solutions are designed by considering that significant resources are available and applicability of these identity management solutions to the resource constrained internet of things needs a thorough analysis. Technical topics discussed in the book include:• Internet of Things;• Identity Management;• Identity models in Internet of Things;• Identity management and trust in the Internet of Things context;• Authentication and access control;Identity management for Internet of Things contributes to the area of identity management for ubiquitous devices in the Internet of Things. It initially presents the motivational factors together with the identity management problems in the context of Internet of Things and proposes an identity management framework. Following this, it refers to the major challenges for Identitymanagement and presents different identity management models. This book also presents relationship between identity and trust, different approaches for trust management, authentication and access control.

**War, Culture and Society in Early Modern South Asia, 1740-1849** Feb 10 2021 This book argues that the role of the British East India Company in transforming warfare in South Asia has been overestimated. Although it agrees with conventional wisdom that, before the British, the nature of Indian society made it difficult for central authorities to establish themselves fully and develop a monopoly over armed force, the book argues that changes to warfare in South Asia were more gradual, and the result of more complicated socio-economic forces than has been hitherto acknowledged. The book covers the period from 1740, when the British first became a major power broker in south India, to 1849, when the British eliminated the last substantial indigenous kingdom in the sub-continent. Placing South Asian military history in a global, comparative context, it examines military innovations; armies and how they conducted themselves; navies and naval warfare; major Indian military powers - such as the Mysore and Khalsa kingdoms, the Maratha confederacy - and the British, explaining why they succeeded.

**Electronic Measurements and Instrumentation** Oct 28 2019 The importance of electronic measuring instruments and transducers is well known in the various engineering fields. The book provides comprehensive coverage of various electronic measuring instruments, transducers, data acquisition system, oscilloscopes and measurement of physical parameters. The book starts with explaining the theory of measurement including characteristics of instruments, classification, statistical analysis and limiting errors. Then the book explains the various analog and digital instruments such as average and true rms responding voltmeters, chopper and sampling voltmeter, types of digital voltmeters, multimeter and ohmmeter. It also includes the discussion of high frequency impedance measurement. The book further explains types of signal generators and various signal analyzers such as wave analyzer, logic analyzer, distortion analyzer and power analyzer. The book teaches various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. The book incorporates the discussion of various types of conventional and special purpose oscilloscopes. The book includes the discussion of time and frequency measurement and types of recorders. The chapter on transducers is dedicated to the detailed discussion of various types of transducers. The book also includes the measurement of various physical parameters such as flow, displacement, velocity, force, pressure and torque. Finally, it incorporates the discussion of data acquisition system. Each chapter gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Transformers and Generators** Sep 27 2019 The importance of transformers and generators is well known in the various engineering fields. The book provides comprehensive coverage of the various types of transformers, d.c. generators and synchronous generators (alternators). The book starts with the brief review of single phase transformer. It continues to discuss no load and on load performance of transformers, phasor diagrams, equivalent circuit, voltage regulation and all day efficiency of transformer. The detailed discussion of open and short circuit tests and predetermination of regulation and efficiency is also included in

the book. The chapter on three phase transformer provides the detailed discussion of construction, three phase transformer connections and phasor groups. The book also explains parallel operation of transformers, tap changing transformer, autotransformers, cooling of transformers and three winding transformer. The various testing methods of transformers are also incorporated in the book. The book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics and applications. The chapters on synchronous generators starts with the explanation of basics of synchronous generators including construction, winding details, e.m.f. equation and effect of harmonics on induced e.m.f. The book then explains the concept of armature reaction, phasor diagrams, regulation and various methods of finding the regulation of alternator. Stepwise explanation and simple techniques used to elaborate these methods is the feature of this book. The book further explains the concept of synchronization of alternators, two reaction theory and parallel operation of alternators. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self explanatory diagrams and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Intelligent Innovations in Multimedia Data Engineering and Management** Apr 14 2021 With the ever-increasing volume of data, proper management of data is a challenging proposition to scientists and researchers, and given the vast storage space required, multimedia data is no exception in this regard. Scientists and researchers are investing great effort to discover new space-efficient methods for storage and archiving of this data. Intelligent Innovations in Multimedia Data Engineering and Management provides emerging research exploring the theoretical and practical aspects of storage systems and computing methods for large forms of data. Featuring coverage on a broad range of topics such as binary image, fuzzy logic, and metaheuristic algorithms, this book is ideally designed for computer engineers, IT professionals, technology developers, academicians, and researchers seeking current research on advancing strategies and computing techniques for various types of data.

**Innovation in Electrical Power Engineering, Communication, and Computing Technology** Jun 28 2022 This book features selected high-quality papers from the International Conference on Innovation in Electrical Power Engineering, Communication, and Computing Technology (IEPCCT 2019), held at Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India, on 13–14 December 2019. Presenting innovations in power, communication, and computing, it covers topics such as mini, micro, smart and future power grids; power system economics; energy storage systems; intelligent control; power converters; improving power quality; signal processing; sensors and actuators; image/video processing; high-performance data mining algorithms; advances in deep learning; and optimization methods.

**Kinematics of Machinery** May 28 2022 Kinematics of Machinery is the branch of engineering science which deals with the study of relative motion between the various parts of a machine and the forces which act on them. It gives information about the basic concepts and layout of linkages in the assembly of a system or a machine. The subject provides information about the principles in analysing the assembly with respect to the displacement, velocity and acceleration at any point in a link of a mechanism. This book gives technique to find velocity and acceleration of different mechanisms by graphical and analytical methods. It also includes the basic concepts of toothed gearing and kinematics of gear trains and the effect of friction in motion transmission and in machine components. My hope is that this book, through its careful explanations of concepts, practical examples and figures bridges the gap between knowledge and proper application of that knowledge.

**Internet of Things Integrated Augmented Reality** Apr 02 2020 This book discusses the use of converged technology, a rapidly growing area that enhancements smart devices, communication, Internet of things (IoT), and augmented reality (AR). The book also explores the need for convergence of IoT and AR for various purposes, like personalized services, context awareness, and bridging the gap between the physical and digital world. Furthermore, it examines the implementation of IoT and AR in use cases to define pathways that allow application developers to design modern solutions to satisfy requirements like scalability, abstraction and security. Featuring an introduction, and covering sensing techniques, and effective architecture in AR-based IoT real-time use cases, the book also addresses the issues and challenges in designing standard architecture and middleware to support diverse applications. Given its scope, it is a valuable resource for teachers and students in engineering, as well as researchers, developers, and users working in multi-disciplinary areas.

**Electrical Instrumentation & Process Control** Oct 01 2022 The book covers all the aspects of the course Electrical Instrumentation and Process Control for the undergraduate students. The various types of transducers, measurement of flow, pressure, level, velocity, discussion of telemetry, data acquisition system, display devices, recorders, computer aided measurements, optic fiber and smart sensors and various types of controllers are explained in the book with the help of comprehensive approach. The book starts with classification, characteristics and selection factors for the transducers. It also explains the resistive transducers, strain gauge, RTD, thermistors, thermocouples, inductive transducers and LVDT. Then the book covers the capacitive, piezoelectric and Hall effect transducers. It also includes the methods of measurement of motion pressure, flow, velocity and level. The book also includes the chapters on telemetry and data acquisition system. The chapter on display devices and recorders includes the discussion of various display devices such as LED, LCD, dot matrix and their applications. The discussion of oscilloscope measurements, Lissajous figure and digital storage oscilloscope is included in support. The book further explains various types of recorders, spectrum analyzer, digital data recording and techniques of DAC and ADC. The inclusion of recent developments in measurements such as computer aided measurement, optical fiber and smart sensors is the feature of the book. Finally, various controllers used in process control are discussed including the discussion of electronic, pneumatic and digital controllers. The book also incorporates the discussion of PLC and its applications. Each chapter gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the comprehensive theory and real time practical examples. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Disruptive Developments in Biomedical Applications** Jul 06 2020 This book covers advancements and future challenges in biomedical application development using disruptive technologies like artificial intelligence (AI), the Internet of Things (IoT), and signal processing. The book is divided into four main sections, namely, medical image processing using AI; IoT and biomedical devices; biomedical signal processing; and electronic health records, including advances in biomedical systems. It includes different case studies of biomedical applications using different AI algorithms related to diabetes, skin cancer, breast cancer, cervical cancer, and osteoarthritis. Features: Covers different technologies like AI, IoT, and signal processing in the context of biomedical applications. Reviews medical image analysis, disease detection, and prediction. Comprehends the advantage of recent technologies for medical record keeping through electronic health records (EHRs). Presents state-of-the-art research in the field of biomedical engineering using various physiological signals. Explores different bio sensors used in healthcare applications using IOT. This book is aimed at graduate students and researchers in AI, medical imaging, biomedical engineering, and IoT.

**Electrical Machines - I** Aug 07 2020 The importance of various electrical machines is well known in the various engineering fields. The book provides comprehensive coverage of the magnetic circuits, magnetic materials, single and three phase transformers and d.c. machines. The book is structured to cover the key aspects of the course Electrical Machines - I. The book starts with the explanation of basics of magnetic circuits, concepts of self and mutual inductances and important magnetic materials. Then it explains the fundamentals of single phase transformers including the construction, phasor diagram, equivalent circuit, losses, efficiency, methods of cooling, parallel operation and autotransformer. The chapter on three phase transformer provides the detailed discussion of construction, connections, phasor groups, parallel operation, tap changing transformer and three winding transformer. The various testing methods of transformers are also incorporated in the book. The book further explains the concept of electromechanical energy conversion including the discussion of singly and multiple excited systems. Then the book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics, parallel operation and applications. The book also includes the details of d.c. motors such as characteristics, types of starters, speed control methods, electric braking and permanent magnet d.c. motors. Finally, the book covers the various testing methods of d.c. machines including Swinburne's test, brake test, retardation test and Hopkinson's test. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self-explanatory diagrams and variety of solved problems. All the chapters are arranged in a proper sequence that permits each topic to build upon earlier studies. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Intelligent Computing and Information and Communication** Sep 19 2021 The volume presents high quality research papers presented at Second International Conference on Information and Communication Technology for Intelligent Systems (ICICT 2017). The conference was held during 2–4 August 2017, Pune, India and organized communally by Dr. Vishwanath Karad MIT World Peace University, Pune, India at MIT College of Engineering, Pune and supported by All India Council for Technical Education (AICTE) and Council of Scientific and Industrial Research (CSIR). The volume contains research papers focused on ICT for intelligent computation, communications and audio, and video data processing.

**Control System Theory** Jan 12 2021 The book is written for an undergraduate course on the theory of Feedback Control Systems. It provides comprehensive explanation of theory and practice of control system engineering. It elaborates various aspects of time domain and frequency domain analysis and design of

control systems. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book starts with explaining the various types of control systems. Then it explains how to obtain the mathematical models of various types of systems such as electrical, mechanical, thermal and liquid level systems. Then the book includes good coverage of the block diagram and signal flow graph methods of representing the various systems and the reduction methods to obtain simple system from the analysis point of view. The book further illustrates the steady state and transient analysis of control systems. The book covers the fundamental knowledge of controllers used in practice to optimize the performance of the systems. The book emphasizes the detailed analysis of second order systems as these systems are common in practice and higher order systems can be approximated as second order systems. The book teaches the concept of stability and time domain stability analysis using Routh-Hurwitz method and root locus method. It further explains the fundamentals of frequency domain analysis of the systems including co-relation between time domain and frequency domain. The book gives very simple techniques for stability analysis of the systems in the frequency domain, using Bode plot, Polar plot and Nyquist plot methods. It also explores the concepts of compensation and design of the control systems in time domain and frequency domain. The classical approach loses the importance of initial conditions in the systems. Thus the book provides the detailed explanation of modern approach of analysis which is the state variable analysis of the systems including methods of finding the state transition matrix, solution of state equation and the concepts of controllability and observability. The book also introduces the concept of discrete time systems including digital and sample data systems, z-transform, difference equations, state space representation, pulse transfer functions and stability of linear discrete time systems. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the design and analysis of the control systems in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Electronic Circuits-I** Dec 23 2021 The book covers all the aspects of theory, analysis, and design of Electronic Circuits for the undergraduate course. The concepts of biasing of BJT, JFET, MOSFET, along with the analysis of BJT, FET, and MOSFET amplifiers, are explained comprehensively. The frequency response of amplifiers is explained in support. The detailed essential of rectifiers, filters, and power supplies are also incorporated in the book. The book covers biasing of BJT, JFET, and MOSFET and analysis of basic BJT, JFET, and MOSFET amplifiers with Hybrid  $\pi$  equivalent circuits. It also includes the Darlington amplifier discussion, amplifiers using Bootstrap technique, multistage amplifiers, differential amplifiers, and BiCMOS cascade amplifier. The in-depth analysis of the frequency response of various amplifiers is also included in the book. Finally, the book covers all the aspects of rectifiers, types of filters, linear regulators, power supplies, and switching regulators. The book uses straightforward and lucid language to explain each topic. The book provides the logical method of describing the various complicated issues and stepwise methods to make understanding easy. The variety of solved examples is the feature of this book. The book explains the subject's philosophy, which makes understanding the concepts evident and makes the subject more interesting.

**Proceeding of First Doctoral Symposium on Natural Computing Research** Jan 30 2020 The book is a collection of papers presented at First Doctoral Symposium on Natural Computing Research (DSNCR 2020), held during 8 August 2020 in Pune, India. The book covers different topics of applied and natural computing methods having applications in physical sciences and engineering. The book focuses on computer vision and applications, soft computing, security for Internet of Things, security in heterogeneous networks, signal processing, intelligent transportation system, VLSI design and embedded systems, privacy and confidentiality, big data and cloud computing, bioinformatics and systems biology, remote healthcare, software security, mobile and pervasive computing, biometrics-based authentication, natural language processing, analysis and verification techniques, large scale networking, distributed systems, digital forensics, and human-computer interaction.

**Authorization and Access Control** Aug 31 2022 This book focuses on various authorization and access control techniques, threats and attack modeling, including an overview of the Open Authorization 2.0 (OAuth 2.0) framework along with user-managed access (UMA) and security analysis. Important key concepts are discussed regarding login credentials with restricted access to third parties with a primary account as a resource server. A detailed protocol overview and authorization process, along with security analysis of OAuth 2.0, are also discussed in the book. Case studies of websites with vulnerability issues are included. FEATURES Provides an overview of the security challenges of IoT and mitigation techniques with a focus on authorization and access control mechanisms Discusses a behavioral analysis of threats and attacks using UML base modeling Covers the use of the OAuth 2.0 Protocol and UMA for connecting web applications Includes role-based access control (RBAC), discretionary access control (DAC), mandatory access control (MAC) and permission-based access control (PBAC) Explores how to provide access to third-party web applications through a resource server by use of a secured and reliable OAuth 2.0 framework This book is for researchers and professionals who are engaged in IT security, auditing and computer engineering.

**Control System Engineering** Nov 29 2019 The book is written for an undergraduate course on the Feedback Control Systems. It provides comprehensive explanation of theory and practice of control system engineering. It elaborates various aspects of time domain and frequency domain analysis and design of control systems. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book starts with explaining the various types of control systems. Then it explains how to obtain the mathematical models of various types of systems such as electrical, mechanical, thermal and liquid level systems. Then the book includes good coverage of the block diagram and signal flow graph methods of representing the various systems and the reduction methods to obtain simple system from the analysis point of view. The book further illustrates the steady state and transient analysis of control systems. The book covers the fundamental knowledge of controllers used in practice to optimize the performance of the systems. The book emphasizes the detailed analysis of second order systems as these systems are common in practice and higher order systems can be approximated as second order systems. The book teaches the concept of stability and time domain stability analysis using Routh-Hurwitz method and root locus method. It further explains the fundamentals of frequency domain analysis of the systems including co-relation between time domain and frequency domain. The book gives very simple techniques for stability analysis of the systems in the frequency domain, using Bode plot, Polar plot and Nyquist plot methods. It also explores the concepts of compensation and design of the control systems in time domain and frequency domain. The classical approach loses the importance of initial conditions in the systems. Thus, the book provides the detailed explanation of modern approach of analysis which is the state variable analysis of the systems including methods of finding the state transition matrix, solution of state equation and the concepts of controllability and observability. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the design and analysis of the control systems in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Advances in Civil Engineering and Building Materials** May 16 2021 Advances in Civil Engineering and Building Materials presents the state-of-the-art development in: - Structural Engineering - Road & Bridge Engineering- Geotechnical Engineering- Architecture & Urban Planning- Transportation Engineering- Hydraulic Engineering - Engineering Management- Computational Mechanics- Construction Technology- Buildi

**Transmission and Distribution** Jun 04 2020 The book covers all the aspects of Transmission and Distribution for undergraduate course. The various aspects of transmission and distribution systems, FACTS, sag calculations, parameters and performance of transmission lines, insulators, cables, substations and grounding systems are explained in the book with the help of comprehensive approach. The book starts with the discussion of basics of power system. It includes comparison of material required for overhead and underground systems. Various types of d.c. and a.c. distribution systems, EHVAC, HVDC and FACTS devices is also included in the book. The book explains the sag calculation under different conditions and sag template. In depth analysis of transmission line parameters is also included in the book. The book also covers the performance analysis of short, medium and long transmission lines along with circle diagram and methods of voltage control. The details of corona effect are explained in support. The book incorporates the discussion of types of insulators, string efficiency, methods of improving string efficiency, single and three core cables, grading of cables, heating and testing of cables. The chapter on substations includes the explanation of various types of substations, substation equipment's and key diagrams. The book also covers the various types of grounding systems, grounding grids and resistance of grounding systems. The book uses plain and lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self-explanatory diagrams and large number of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Ternary Digital System** Jun 16 2021 Ternary digital system is commonly known as three valued digital system. Three valued logic is an elementary set of Multiple Valued Logic, which is introduced in the book at the beginning. The book provides a detail overview of every concept required for the design and applications of ternary circuits. It covers the basic concepts for ternary logic fundamentals, ternary logic gates, its logic gate truth tables, Boolean rules for ternary logic up to ternary logic families, function synthesis and minimization techniques and an applications like one trit T-ALU, Two trit T-ALU Slice, Ternary R-S and D memory elements and an analog to ternary converter for DSP application as a fundamental block are developed and simulated using EDA tool.

Finally computer simulation using EDA (Electronic Design Automation) tools like Tanner, spice and VHDL is also illustrated. In the first half of 19th century G. Boolean has proposed the Algebra for two valued (Binary logic) system after that Shannon has expressed the behavior of electrical switches in terms of Boolean algebra and he paved the ramp to an industrial development that is recognized as initiating one of the most revolutionary economic changes ever. MVL is also known as Multi-Valued, Multiple-Valued or Many-Valued logic. Multi-Value logic is regarded as a switch with more than two states. Such as a 3-value switch with states '0', '1' and '2'. Or a 4-value switch with states '0', '1', '2' and '3'. In case of 3-Valued logic the term ternary logic is used & term quaternary logic for 4-Valued logic. Alexander (1964) showed that the most efficient radix for implementation of switching systems is the natural base (e 2.71828), it seems likely that the best integral radix is 3 rather than 2. It should be noted that this book emphasis on Ternary logic with concepts and applications. The fundamental work on Multiple Valued Logic (MVL) System was done by E.L. Post in the beginning of 19th centuries and based on that work P.C. Rosen Bloom modeled the Algebra for MVL is called Post Algebra.

**Mystic Science of Vastu** May 04 2020 In this book, the authors stress the importance of Darshanshastra in Vastushastra studies, since Vastushastra, Yogashastra, astrology, Ayurveda, and Sangeet are sub-branches of Darshanshastra.

**Handbook on ICT in Developing Countries** Nov 02 2022 Handbook on ICT in Developing Countries: Next Generation ICT Technologies is the second volume of the Handbook of ICT in Developing Countries. The first volume was on the potential implementation and service delivery of the forth-coming 5G networks. Here the focus is on the new technologies and services enabled by 5G networks or broadband Internet networks including artificial Intelligence (AI), machine learning, augmented reality, Internet of Things (IoT), autonomous driving, blockchain solutions, cloud solutions etc. Some of these are already globally experiencing growth in the existing networks and all of them are expected to grow substantially in the future. Examples: currently, 5% of global organizations have fully adopted AI, but the penetration is expected to increase rapidly before 2025. IoT with 20.35 billion devices connected in 2017 is estimated to show 75.44 billion devices connected in 2025. The expected growth is based on delivering of new value to businesses and citizens. It is, however, not obvious that this growth will also occur in developing countries. Currently, the digital divide between developing countries and developed countries is widening. This is mostly due to the lack of infrastructure and low level of awareness by the businesses and citizens of the value made possible by the new technologies for developing countries. The book discusses the potentials of the new technologies for developing countries and the need for market interventions that will facilitate the demand and supply side of the market. It is designed for a broad audience including practitioners, researchers, academics, policy makers and industry players and influencers. The language and approach to the handbook is a combination of the academic writing style and professional reviews.

**Privacy and Security Policies in Big Data** Jul 26 2019 In recent years, technological advances have led to significant developments within a variety of business applications. In particular, data-driven research provides ample opportunity for enterprise growth, if utilized efficiently. Privacy and Security Policies in Big Data is a pivotal reference source for the latest research on innovative concepts on the management of security and privacy analytics within big data. Featuring extensive coverage on relevant areas such as kinetic knowledge, cognitive analytics, and parallel computing, this publication is an ideal resource for professionals, researchers, academicians, advanced-level students, and technology developers in the field of big data.

**The Valuation of Digital Intangibles** Sep 07 2020 This book offers an updated primer on the valuation of digital intangibles, a trending class of immaterial assets. Startups like successful unicorns, as well as consolidated firms desperately working to re-engineer their business models, are now trying to go digital and to reap higher returns by exploiting new intangibles. This book is innovative in its design and concept since it tackles a frontier topic with an original methodology, combining academic rigor with practical insights. Evaluation issues are increasingly based on an analytical comprehension of augmented business models and virtual function analysis, nurtured by real-time big data. The impact of digitalization on scalable business models is the main competitive advantage factor of the BigTechs and other Unicorns, representing a target for startups and the reengineering of traditional firms. The transition from the Internet to the metaverse represents the last frontier, showing how 3D virtual and augmented reality impacts social networking. The second edition of this book updates the contents of the first edition while comprehensively introduces these innovative topics—such as the metaverse, cloud storage, multi-sided digital platforms, ESG-compliance, and value co-creation patterns of digitized stakeholders—and demonstrates how best practices can be applied to specific asset appraisals, making it of interest to researchers, students, and practitioners alike. Roberto Moro-Visconti is professor of Corporate Finance at the Catholic University of the Sacred Heart, Milan, Italy, and is the director of studio Moro Visconti chartered accountants and financial consultants. Dr. Moro-Visconti manages a consolidated financial boutique that derives from a deep-rooted tradition of professional consultants in Milan.

**Quality of Work-Life During Pandemic** Jul 30 2022 This book is focused on the impact of the COVID-19 pandemic on different sectors, i.e., education, real estate, health, and agriculture. The lockdown has been announced to control the spread of COVID-19 infections, however people/industries/organizations were not ready for lockdown and it has greatly affected their growth. The front workers in the healthcare sector suffered a lot as major responsibilities they needed to carry on. The education sector is also hampered due to the pandemic as schools, colleges were closed and teaching, examinations were carried out on online platforms. These platforms were new to teachers as well as students. The real estate sector faced tremendous loss in this pandemic as people were scared and no one ready to invest their money in such an uncertain time. The agriculture field is also suffered as raw materials required for agriculture were not available readily due to pandemic. This book presents a survey that is conducted to understand the impact of COVID-19 on the quality of work-life in various sectors. The survey is focused majorly on four sectors, i.e. education, healthcare, real estate and agriculture. Data analysis is done based on responses of survey and mathematical modeling is provided for each case study.

**Transmission Lines & Waveguides** Jun 24 2019 The book is written for an undergraduate course on the transmission lines and waveguides. It provides comprehensive coverage of four terminal networks, filters, transmission lines and various types of waveguides. The book starts with explaining the symmetrical and asymmetrical four terminal networks which form the basis of filters. Then book provides the detailed discussion of various types of filters. The discussion of composite filters and crystal filter is also included in the book. The book covers the transmission line parameters in detail along with reflection on a line, reflection loss and reflection factor. The chapter on transmission line at radio frequency includes parameters of line at high frequency, standing waves, standing wave ratio, single stub matching, double stub matching and Smith chart. The book covers the various aspects of guided waves between parallel planes. It also provides the discussion of rectangular and circular waveguides. At the end book incorporates the discussion of resonators. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Basic Electrical & Instrumentation Engineering** Apr 26 2022 The book covers all the aspects of Basic Electrical and Instrumentation Engineering for undergraduate course. Various concepts of three phase a.c. circuit analysis with balanced and unbalanced loads, tariff and power factor improvement, single phase and three phase transformers, d.c. machines, single phase and three phase induction motors, alternators, synchronous motors, basics of measuring instruments and transducers are explained in the book with the help of comprehensive approach. The book starts with explaining the three phase a.c. circuit analysis with balanced and unbalanced loads, concept of transmission, distribution and power system protection. The discussion of tariff and power factor improvement is also added in support. The book further explains single phase and three phase transformers. Then book provides the detailed discussion of d.c. generators and motors. The book also includes the discussion of three phase and single phase induction motors, synchronous generators, synchronous motors and other motors such as stepper motor, brushless d.c. motor and universal motor. The book covers the classification and basic requirements of a measuring instrument. Then the book explains the static and dynamic characteristics and types of errors in measuring instruments. The book provides in depth discussion of electronic multimeter and oscilloscope. The book teaches the details of various types of transducers like resistive, inductive, capacitive, thermoelectric, piezoelectric, photoelectric and Hall effect transducers. The book uses plain, simple and lucid language to explain each topic. Each chapter gives the conceptual knowledge about the topic dividing it in the various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Mechanical Design, Materials and Manufacturing** Aug 26 2019 Though the developments in the field of electronics and digital industries are significant, the importance of the basic mechanical industry remains always on the top side. The purpose of this book is to present some advanced research studies on mechanical design, materials and manufacturing. The first chapter presents an analysis of a novel force transducer which has a special shape that allows strategic placement of the strain gauges and senses axial forces by ignoring the moments. The second chapter explains the basic principle of calculation and analysis of the defective structure of solids. The third most interesting chapter presents advanced methods used in molecular dynamics simulation of macromolecules. Chapter Four explores an extended method of mathematical modelling of Freudenstein-Chebyshev approximation theory for sigmoidal function applied to four and five precision points. Chapter Five presents an algorithm to find the transfer vertex of a given epicyclic gear train. In the sixth chapter, an analytical study (using ABAQUS/CAE) on the strengthening of the beam-column joint under seismic conditions using carbon fiber reinforced polymer (CFRP) sheets has been carried out. Chapter Seven discusses preparation, properties and applications of nanomaterials, ceramics and bioceramics.

Chapter Eight discusses the fluorescence of atomic hydrogen in aqueous media. Chapter Nine presents a methodology to design, develop and simulate a twin spindle turning special purpose machine based on the data collected from hydraulic, pneumatic, and electro pneumatic data which will serve as low cost automation. The last chapter is about the estimation of axial force in incremental sheet metal forming.

**Object Detection by Stereo Vision Images** Mar 02 2020 OBJECT DETECTION BY STEREO VISION IMAGES Since both theoretical and practical aspects of the developments in this field of research are explored, including recent state-of-the-art technologies and research opportunities in the area of object detection, this book will act as a good reference for practitioners, students, and researchers. Current state-of-the-art technologies have opened up new opportunities in research in the areas of object detection and recognition of digital images and videos, robotics, neural networks, machine learning, stereo vision matching algorithms, soft computing, customer prediction, social media analysis, recommendation systems, and stereo vision. This book has been designed to provide directions for those interested in researching and developing intelligent applications to detect an object and estimate depth. In addition to focusing on the performance of the system using high-performance computing techniques, a technical overview of certain tools, languages, libraries, frameworks, and APIs for developing applications is also given. More specifically, detection using stereo vision images/video from its developmental stage up till today, its possible applications, and general research problems relating to it are covered. Also presented are techniques and algorithms that satisfy the peculiar needs of stereo vision images along with emerging research opportunities through analysis of modern techniques being applied to intelligent systems. Audience Researchers in information technology looking at robotics, deep learning, machine learning, big data analytics, neural networks, pattern & data mining, and image and object recognition. Industrial sectors include automotive electronics, security and surveillance systems, and online retailers.

**Research Advances in the Integration of Big Data and Smart Computing** Jan 24 2022 The volume, complexity, and irregularity of computational data in modern algorithms and simulations necessitates an unorthodox approach to computing. Understanding the facets and possibilities of soft computing algorithms is necessary for the accurate and timely processing of complex data. Research Advances in the Integration of Big Data and Smart Computing builds on the available literature in the realm of Big Data while providing further research opportunities in this dynamic field. This publication provides the resources necessary for technology developers, scientists, and policymakers to adopt and implement new paradigms in computational methods across the globe. The chapters in this publication advance the body of knowledge on soft computing techniques through topics such as transmission control protocol for mobile ad hoc networks, feature extraction, comparative analysis of filtering techniques, big data in economic policy, and advanced dimensionality reduction methods.

**The Convergence of Internet of Things and Cloud for Smart Computing** Jul 18 2021 This book presents the know-how of the real-time IoT application development activity including a basic understanding of the IoT architecture, use cases, smart computing, and the associated challenges in design and development of the IoT system. All the technical details related to protocol stack, technologies, and platforms used for the implementation are explained. It further includes techniques and case studies that include smart computing on the IoT-Cloud models along with test beds for experimentation purposes. The book aims at setting up the groundwork for the creation of applications that can help make day-to-day tasks simpler by meeting the needs of varied sectors like education, health care, agriculture, and so forth. Features: • Covers IoT cloud convergence with a focus on complex industrial IoT case studies. • Discusses the broad background of IoT-Cloud convergence architectures and its fundamentals along with resource provisioning mechanisms. • Emphasizes the use of context in developing context-aware IoT solutions. • Presents a novel C-model that explains the IoT application development phases. • Discusses a simplified convergence model that depicts the role of Cloud in an IoT application. This book aims at graduate students, researchers, and professionals getting started in the IoT field.

**Basic Mechanical Engineering** Dec 11 2020 Mechanical engineering, as its name suggests, deals with the mechanics of operation of mechanical systems. This is the branch of engineering which includes design, manufacturing, analysis and maintenance of mechanical systems. It combines engineering physics and mathematics principles with material science to design, analyse, manufacture and maintain mechanical systems. This book covers the field requires an understanding of core areas including thermodynamics, material science, manufacturing, energy conversion systems, power transmission systems and mechanisms. My hope is that this book, through its careful explanations of concepts, practical examples and figures bridges the gap between knowledge and proper application of that knowledge.

**Electrical Measurements and Instrumentation** Mar 14 2021 ?The importance of measuring instruments and transducers is well known in the various engineering fields. The book provides comprehensive coverage of various electrical and electronic measuring instruments, transducers, data acquisition system, storage and display devices . The book starts with explaining the theory of measurement including characteristics of instruments, classification, standards, statistical analysis and limiting errors. Then the book explains the various electrical and electronic instruments such as PMMC, moving iron, electro-dynamometer type, energy meter, wattmeter, digital voltmeters and multimeters. It also includes the discussion of various magnetic measurements, instrument transformers, power factor meters, frequency meters, phase meters and synchros. The book further explains d.c. and a.c. potentiometers and their applications. The book teaches various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. The book incorporates the various storage and display devices such as, recorders, plotters, printers, oscilloscopes, LED, LCDs and dot matrix displays. The chapter on transducers is dedicated to the detailed discussion of various types of transducers such as resistive, capacitive, strain gauges, RTD, thermistors, inductive, LVDT, thermocouples, piezoelectric, photoelectric and digital transducers. It also adds the discussion of optical fiber sensors. The book also includes good coverage of data acquisition system, data loggers, DACs and ADCs. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Electron Devices and Circuits** Nov 21 2021 The book covers all the aspects of theory, analysis, and design of Electron Devices and Circuits for the undergraduate course. The concepts of p-n junction devices, BJT, JFET, MOSFET, electronic devices including UJT, thyristors, IGBT, Amplifier circuits-BJT, JFET and MOSFET amplifiers, multistage and differential amplifiers, feedback amplifiers, and oscillators are explained comprehensively. The book explains various p-n junction devices, including diode, LED, laser diode, Zener diode, and Zener diode regulator. The different types of rectifiers are explained in support. The book covers the construction, operation, and characteristics of BJT, JFET, MOSFET, UJT, Thyristors - SCR, Diac and Triac, and IGBT. It explains the biasing of BJT, JFET, and MOSFET amplifiers, basic BJT, JFET, and MOSFET amplifiers with h-parameters and r-parameters equivalent circuits, multistage amplifiers, differential amplifiers, BiCMOS amplifier, single tuned amplifiers, neutralization methods, power amplifiers, and frequency response. Finally, the book incorporates a detailed discussion of the analysis of the current series, voltage series, current shunt, and voltage shunt feedback amplifiers. The book also includes the discussion of the Barkhausen criterion for oscillations and the detailed analysis of various oscillator circuits, including RC phase shift, Wien bridge, Hartley, Colpitt's, Clapp, and crystal oscillators. The book uses straightforward and lucid language to explain each topic. The book provides the logical method of describing the various complicated issues and stepwise methods to make understanding easy. The variety of solved examples is the feature of this book. The book explains the subject's philosophy, which makes understanding the concepts evident and makes the subject more interesting.

**Electromagnetic Field Theory** Feb 22 2022 The comprehensive study of electric, magnetic and combined fields is nothing but electromagnetic engineering. Along with electronics, electromagnetics plays an important role in other branches. The book is structured to cover the key aspects of the course. Electromagnetic Field Theory for undergraduate students. The knowledge of vector analysis is the base of electromagnetic engineering. Hence book starts with the discussion of vector analysis. Then it introduces the basic concepts of electrostatics such as Coulomb's law, electric field intensity due to various charge distributions, electric flux, electric flux density, Gauss's law, divergence and divergence theorem. The book continues to explain the concept of elementary work done, conservative property, electric potential and potential difference and the energy in the electrostatic fields. The detailed discussion of current density, continuity equation, boundary conditions and various types of capacitors is also included in the book. The book provides the discussion of Poisson's and Laplace's equations and their use in variety of practical applications. The chapter on magnetostatics incorporates the explanation of Biot-Savart's law, Ampere's circuital law and its applications, concept of curl, Stoke's theorem, scalar and vector magnetic potentials. The book also includes the concept of force on a moving charge, force on differential current element and magnetic boundary conditions. The book covers all the details of Faraday's laws, time varying fields, Maxwell's equations and Poynting theorem. Finally, the book provides the detailed study of uniform plane waves including their propagation in free space, perfect dielectrics, lossy dielectrics and good conductors. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the electromagnetics in the students. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

**Mihir's Handbook of Chemical Process Engineering (Excerpts)** Nov 09 2020 This book will aid the chemical engineer to carry out chemical process engineering in a very practical way. The process engineer can use the excel based calculation templates effectively to do correct and proper process design. Chemical engineering is a very vast and complex field. This book aims to simplify the process engineering design. Design of a chemical plant involves one being adept in technical aspects of process engineering. The book aims at making the chemical engineer proficient in the art of process design. Included are

chemical engineering basics on simulation, stoichiometry, fluid property calculation, dimensionless numbers, thermodynamics and on chemical engineering equipment like pump, compressor, steam turbine, gas turbine, flare, motor, fired heater, incinerator, heat exchanger, distillation column, fractionation column, absorber, stripper, packed column, solar evaporation pond, separator. Utility design of nitrogen, compressed air, water, effluent treatment, steam, condensate, desalination, fuel selection is covered. Many chemical engineering calculations have been included. Special process items like flame arrestor, demister, feed device, pressure reducing and desuperheating station (PRDS), vortex breaker, electric heater, manual valve have been covered. Process engineering design criteria, process control, material of construction, specialized process studies, safety studies, precommissioning and commissioning have been covered. Project engineer will also benefit from information provided on types of project (EPC, EPCM, Cost + Fee, etc) as well as interdisciplinary interaction between various engineering disciplines i.e. process, piping, mechanical, instrumentation, electrical, civil and THSE. Process engineering documentation like process design basis, process philosophies, process flow diagram (PFD), piping and instrumentation diagram (P&ID), block flow diagram (BFD), DP-DT diagram, material selection diagram (MSD), line list, summaries like utility summary, effluent and emission summary, tie in summary and flare relief load summary have been covered with blank templates. Excerpts from few chapters have been provided.

*Research Methodology* Aug 19 2021 This book offers a design research methodology intended to improve the quality of design research- its academic credibility, industrial significance and societal contribution by enabling more thorough, efficient and effective procedures.

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