

Chemical Engineering Lecture Notes

18th International Probabilistic Workshop Lecture notes **GPU Solutions to Multi-scale Problems in Science and Engineering** **Fundamental Numerical Methods for Electrical Engineering** *Design, Analysis and Test of Logic Circuits Under Uncertainty* *A Boundary Element Method for Two-dimensional Contact Problems* **Future Information Technology - II** **Advances in Electrical Engineering and Electrical Machines** Proceedings of SECON'21 *Advances in Industrial Engineering and Operations Research* Multiscale Modelling and Simulation **IT Security Management** **Proceedings of International Conference on Advances in Tribology and Engineering Systems** *Applied Physics, System Science and Computers III* **Sensors** **Electrical Engineering and Intelligent Systems** **Artificial Intelligence in Construction Engineering and Management** **Efficient Test Methodologies for High-Speed Serial Links** *Fractional Calculus for Scientists and Engineers* **Proceedings of the International Conference on Industrial and Manufacturing Systems (CIMS-2020)** **Fundamentals of Digital Electronics** **Recent Advances in Mechanical Engineering** *Advances in Civil Engineering Materials* *Lecture Notes in Computational Intelligence and Decision Making* **Recent Advances in Mechanical Engineering** **Innovations in Computer Science and Engineering** **Proceedings of the 1st Vietnam Symposium on Advances in Offshore Engineering** **Data Visualization and Knowledge Engineering** *Computational Problems in Science and Engineering* **Advances in Civil Engineering** **Boundary Element Analysis of Nonhomogeneous Biharmonic Phenomena** Computer Networks, Big Data and IoT Proceedings of the Second International Conference of Construction, Infrastructure, and Materials Futuristic Communication and Network Technologies **Lecture Notes On Engineering** **Human Thermal Comfort** *10th International Conference on FRP Composites in Civil Engineering* **Algorithm Engineering** **Stochastic Structural Mechanics** **Proceedings of the 3rd International Conference on Sustainability in Civil Engineering** Fundamental Research in Electrical Engineering

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Proceedings of the 1st Vietnam Symposium on Advances in Offshore Engineering

Aug 06 2020 These proceedings gather a selection of refereed papers presented at the 1st Vietnam Symposium on Advances in Offshore Engineering (VSOE 2018), held on 1–3 November 2018 in Hanoi, Vietnam. The contributions from researchers, practitioners, policymakers, and entrepreneurs address technological and policy changes intended to promote renewable energies, and to generate business opportunities in oil and gas and offshore renewable energy. With a special focus on energy and geotechnics, the book brings together the latest lessons learned in offshore engineering, technological innovations, cost-effective and safer foundations and structural solutions, environmental protection, hazards, vulnerability, and risk management. The book offers a valuable resource for all graduate students, researchers and industrial practitioners working in the fields of offshore engineering and renewable energies.

Recent Advances in Mechanical Engineering Jan 11 2021 This book presents selected peer-reviewed papers presented at the International Conference on Innovative Technologies in Mechanical Engineering (ITME) 2019. The book discusses a wide range of topics in mechanical engineering such as mechanical systems, materials engineering, micro-machining, renewable energy, systems engineering, thermal engineering, additive manufacturing, automotive technologies, rapid prototyping, computer aided design and manufacturing. This book, in addition to assisting students and researchers working in various areas of mechanical engineering, can also be useful to researchers and professionals working in various allied and interdisciplinary fields.

Electrical Engineering and Intelligent Systems Jul 17 2021 The revised and extended papers collected in this volume represent the cutting-edge of research at the nexus of electrical engineering and intelligent systems. They were selected from well over 1000 papers submitted to the high-profile international World Congress on Engineering held in London in July 2011. The chapters cover material across the full spectrum of work in the field, including computational intelligence, control engineering, network management, and wireless networks. Readers will also find substantive papers on signal processing, Internet computing, high performance computing, and industrial applications. The Electrical Engineering and Intelligent Systems conference, as part of the 2011 World Congress on Engineering was organized under the auspices of the non-profit International Association of Engineers (IAENG). With more than 30 nations represented on the conference committees alone, the Congress features the best and brightest scientific minds from a multitude of disciplines related to engineering. These peer-reviewed papers demonstrate the huge strides currently being taken in this rapidly developing field and reflect the excitement of those at the frontiers of this research.

Proceedings of the 3rd International Conference on Sustainability in Civil

Engineering Jul 25 2019 This book contains the proceedings of the 3rd International Conference on Sustainability in Civil Engineering, ICSCCE 2020, held on 26–27 November 2020, in Hanoi, Vietnam. It presents the expertise of scientists and engineers in academia and industry in the field of bridge and highway engineering, construction materials, environmental engineering, engineering in industry 4.0, geotechnical engineering, structural damage detection and health monitoring, structural engineering, geographic information system engineering, traffic, transportation and logistics engineering, water resources, estuary and coastal engineering.

Innovations in Computer Science and Engineering Sep 06 2020 This book features a collection of high-quality, peer-reviewed research papers presented at the 8th International Conference on Innovations in Computer Science & Engineering (ICICSE 2020), held at Guru Nanak Institutions, Hyderabad, India, on 28–29 August 2020. It covers the latest research in data science and analytics, cloud computing, machine learning, data mining, big data and analytics, information security and privacy, wireless and sensor networks and IoT applications, artificial intelligence, expert systems, natural language processing, image processing, computer vision and artificial neural networks.

Sensors Aug 18 2021 Sensors are the most important component in any system and engineers in any field need to understand the fundamentals of how these components work, how to select them properly and how to integrate them into an overall system. This book has outlined the fundamentals, analytical concepts, modelling and design issues, technical details and practical applications of different types of sensors, electromagnetic, capacitive, ultrasonic, vision, Terahertz, displacement, fibre-optic and so on. The book: addresses the identification, modeling, selection, operation and integration of a wide variety of sensors, demonstrates the concepts of different sensors technology through simulation, design and real implementations, discusses the design and fabrication of high performance modern sensors technology, presents a selection of cutting-edge applications. Written by experts in their area of research, this book will be useful reference book for engineers and scientist especially the post-graduate students find this book as reference book for their research.

Applied Physics, System Science and Computers III Sep 18 2021 This book reports on advanced theories and methods in three related fields of research: applied physics, system science and computers. The first part covers applied physics topics, such as lasers and accelerators; fluid dynamics, optics and spectroscopy, among others. It also addresses astrophysics, security, and medical and biological physics. The second part focuses on advances in computers, such as those in the area of social networks, games, internet of things, deep learning models and more. The third part is especially related to systems science, covering swarm intelligence, smart cities, complexity and more. Advances in and application of computer communication, artificial intelligence, data analysis, simulation and modeling are also addressed. The book offers a collection of contributions presented at the 3rd International Conference on Applied Physics, System Science and Computers (APSAC), held in Dubrovnik, Croatia on September

26–28, 2018. Besides presenting new methods, it is also intended to promote collaborations between different communities working on related topics at the interface between physics, computer science and engineering.

Boundary Element Analysis of Nonhomogeneous Biharmonic Phenomena Apr 01 2020 At the date of this writing, there is no question that the boundary element method has emerged as one of the major revolutions on the engineering science of computational mechanics. The emergence of the technique from relative obscurity to a cutting edge engineering analysis tool in the short space of basically a ten to fifteen year time span is unparalleled since the advent of the finite element method. At the recent international conference BEM XI, well over one hundred papers were presented and many were published in three hard-bound volumes. The exponential increase in interest in the subject is comparable to that shown in the early days of finite elements. The diversity of applications of BEM, the broad base of interested parties, and the ever-increasing presence of the computer as an engineering tool are probably the reasons for the upsurge in popularity of BEM among researchers and industrial practitioners. Only in the past few years has the BEM audience become large enough that we have seen the development of specialty books on specific applications of the boundary element method. The present text is one such book. In this work, we have attempted to present a self-contained treatment of the analysis of physical phenomena governed by equations containing biharmonic operators. The biharmonic operator defines a very important class of fourth-order PDE problems which includes deflections of beams and thin plates, and creeping flow of viscous fluids.

Data Visualization and Knowledge Engineering Jul 05 2020 This book presents the fundamentals and advances in the field of data visualization and knowledge engineering, supported by case studies and practical examples. Data visualization and engineering has been instrumental in the development of many data-driven products and processes. As such the book promotes basic research on data visualization and knowledge engineering toward data engineering and knowledge. Visual data exploration focuses on perception of information and manipulation of data to enable even non-expert users to extract knowledge. A number of visualization techniques are used in a variety of systems that provide users with innovative ways to interact with data and reveal patterns. A variety of scalable data visualization techniques are required to deal with constantly increasing volume of data in different formats. Knowledge engineering deals with the simulation of the exchange of ideas and the development of smart information systems in which reasoning and knowledge play an important role. Presenting research in areas like data visualization and knowledge engineering, this book is a valuable resource for students, scholars and researchers in the field. Each chapter is self-contained and offers an in-depth analysis of real-world applications. It discusses topics including (but not limited to) spatial data visualization; biomedical visualization and applications; image/video summarization and visualization; perception and cognition in visualization; visualization taxonomies and models; abstract data visualization; information and graph visualization; knowledge

engineering; human-machine cooperation; metamodeling; natural language processing; architectures of database, expert and knowledge-based systems; knowledge acquisition methods; applications, case studies and management issues: data administration issues and knowledge; tools for specifying and developing data and knowledge bases using tools based on communication aspects involved in implementing, designing and using KBSs in cyberspace; Semantic Web.

Artificial Intelligence in Construction Engineering and Management Jun 15 2021

This book highlights the latest technologies and applications of Artificial Intelligence (AI) in the domain of construction engineering and management. The construction industry worldwide has been a late bloomer to adopting digital technology, where construction projects are predominantly managed with a heavy reliance on the knowledge and experience of construction professionals. AI works by combining large amounts of data with fast, iterative processing, and intelligent algorithms (e.g., neural networks, process mining, and deep learning), allowing the computer to learn automatically from patterns or features in the data. It provides a wide range of solutions to address many challenging construction problems, such as knowledge discovery, risk estimates, root cause analysis, damage assessment and prediction, and defect detection. A tremendous transformation has taken place in the past years with the emerging applications of AI. This enables industrial participants to operate projects more efficiently and safely, not only increasing the automation and productivity in construction but also enhancing the competitiveness globally.

Efficient Test Methodologies for High-Speed Serial Links May 15 2021 Efficient Test Methodologies for High-Speed Serial Links describes in detail several new and promising techniques for cost-effectively testing high-speed interfaces with a high test coverage. One primary focus of Efficient Test Methodologies for High-Speed Serial Links is on efficient testing methods for jitter and bit-error-rate (BER), which are widely used for quantifying the quality of a communication system. Various analysis as well as experimental results are presented to demonstrate the validity of the presented techniques.

Fractional Calculus for Scientists and Engineers Apr 13 2021 This book gives a practical overview of Fractional Calculus as it relates to Signal Processing

Algorithm Engineering Sep 26 2019 Algorithm Engineering is a methodology for algorithmic research that combines theory with implementation and experimentation in order to obtain better algorithms with high practical impact. Traditionally, the study of algorithms was dominated by mathematical (worst-case) analysis. In Algorithm Engineering, algorithms are also implemented and experiments conducted in a systematic way, sometimes resembling the experimentation processes known from fields such as biology, chemistry, or physics. This helps in counteracting an otherwise growing gap between theory and practice.

Proceedings of SECON'21 Feb 21 2022 This book gathers peer-reviewed contributions presented at the International Conference on Structural Engineering and Construction Management (SECON'21), held on 12-15 May 2021. The meeting served as a fertile

platform for discussion, sharing sound knowledge and introducing novel ideas on issues related to sustainable construction and design for the future. The respective contributions address various aspects of numerical modeling and simulation in structural engineering, structural dynamics and earthquake engineering, advanced analysis and design of foundations, BIM, building energy management, and technical project management. Accordingly, the book offers a valuable, up-to-date tool and essential overview of the subject for scientists and practitioners alike, and will inspire further investigations and research.

Stochastic Structural Mechanics Aug 25 2019 This volume is a collection of papers presented at the U.S.-Austria Joint Seminar on Stochastic Structural Mechanics held on May 4 and 5, 1987. The general theme of the two-day program was the applications of probability and statistics to structural mechanics. Within this general theme a great variety of subject matters were covered, ranging from analytical and computational algorithms to specific problems in different branches of engineering. The format of the bi-national seminar with limited attendance permitted ample time for presentation and discussion. The discussion was also contributed by several participants of another bi-national seminar, the U.S.-Japan Joint Seminar on Stochastic Approaches in Earthquake Engineering, which followed immediately on May 6 and 7, 1987. The scheduling of the two seminars back-to-back enhanced greatly the exchange among the experts in engineering stochastics from the three nations. The Joint Seminar was organized according to the U.S.-Austria Cooperative Science Program established in 1984. We are indebted to the following government agencies and organizations for financial assistance, including the National Science Foundation, and the Florida Atlantic University Foundation in the United States, and Fonds zur Forderung der wissenschaftlichen Forschung, Land Tirol, Bundeswirtschaftskammer, Bundesministerium flir Wissenschaft und Forschung, and Osterreichische Forschungsgemeinschaft in Austria. Most credits, however, must be accorded to each of the authors whose contributions were the very basis of any success we might be able to claim. Our special thanks are due to Mrs.

Proceedings of International Conference on Advances in Tribology and Engineering Systems Oct 20 2021 This book contains advanced-level research material in the area of lubrication theory and related aspects, presented by eminent researchers during the International Conference on Advances in Tribology and Engineering Systems (ICATES 2013) held at Gujarat Technological University, Ahmedabad, India during October 15–17, 2013. The material in this book represents the advanced field of tribology and reflects the work of many eminent researchers from both India and abroad. The treatment of the presentations is the result of the contributions of several professionals working in the industry and academia. This book will be useful for students, researchers, academicians, and professionals working in the area of tribology, in general, and bearing performance characteristics, in particular, especially from the point-of-view of design. This book will also appeal to researchers and professionals working in fluid-film lubrication and other practical applications of

tribology. A wide range of topics has been included despite space and time constraints. Basic concepts and fundamentals techniques have been emphasized upon, while also including highly specialized topics and methods (such as nanotribology, bio-nanotribology). Care has been taken to generate interest for a wide range of readers, considering the interdisciplinary nature of the subject.

Advances in Civil Engineering Materials Dec 10 2020 This book presents selected articles from the 4th International Conference on Architecture and Civil Engineering 2021, held in Malaysia. Written by leading researchers and industry professionals, the papers highlight recent advances and addresses current issues in the fields of civil engineering and architecture.

Lecture Notes On Engineering Human Thermal Comfort Nov 28 2019 Human thermal comfort, namely in the areas of heating, ventilation and air conditioning (collectively known as 'HVAC'), is ubiquitous wherever human habitation may be found. Today, a large portion of the developed world's current energy demands are used to artificially keep the temperatures of our environments comfortable. It is therefore imperative for everyone, decision-makers and engineers alike, involved with the future of energy to be appropriately acquainted with HVAC. **Lecture Notes on Engineering Human Thermal Comfort** explains the quintessence of engineering human thermal comfort through straight-forward writing designed to help students better comprehend the materials presented. Illustrative figures, anecdotal banter, and ironical analogies interject the necessary technical humdrum to provide timeous stimuli in the midst of arduous technical details. This book is primarily for senior undergraduate engineering students interested in engineering human thermal comfort. It invokes some undergraduate knowledge of thermodynamics, heat transfer, and fluid mechanics as needed, to enable students to appreciate thermal comfort engineering without the need to seek out other textbooks.

Lecture notes Sep 30 2022

Recent Advances in Mechanical Engineering Oct 08 2020 This book presents the select proceedings of the International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2020). It provides a comprehensive overview of the various technical challenges faced, their systematic investigation, contemporary developments, and future perspectives in the domain of mechanical engineering. The book covers a wide array of topics including fluid flow techniques, compressible flows, waste management and waste disposal, bio-fuels, renewable energy, cryogenic applications, computing in applied mechanics, product design, dynamics and control of structures, fracture and failure mechanics, solid mechanics, finite element analysis, tribology, nano-mechanics and MEMS, robotics, supply chain management and logistics, intelligent manufacturing system, rapid prototyping and reverse engineering, quality control and reliability, conventional and non-conventional machining, and ergonomics. This book can be useful for students and researchers interested in mechanical engineering and its allied fields.

18th International Probabilistic Workshop Nov 01 2022 This volume presents the

proceedings of the 18th International Probabilistic Workshop (IPW), which was held in Guimarães, Portugal in May 2021. Probabilistic methods are currently of crucial importance for research and developments in the field of engineering, which face challenges presented by new materials and technologies and rapidly changing societal needs and values. Contemporary needs related to, for example, performance-based design, service-life design, life-cycle analysis, product optimization, assessment of existing structures and structural robustness give rise to new developments as well as accurate and practically applicable probabilistic and statistical engineering methods to support these developments. These proceedings are a valuable resource for anyone interested in contemporary developments in the field of probabilistic engineering applications.

Fundamental Research in Electrical Engineering Jun 23 2019 This volume presents the selected papers of the First International Conference on Fundamental Research in Electrical Engineering, held at Khwarazmi University, Tehran, Iran in July, 2017. The selected papers cover the whole spectrum of the main four fields of Electrical Engineering (Electronic, Telecommunications, Control, and Power Engineering).

IT Security Management Nov 20 2021 IT securiteers - The human and technical dimension working for the organisation. Current corporate governance regulations and international standards lead many organisations, big and small, to the creation of an information technology (IT) security function in their organisational chart or to the acquisition of services from the IT security industry. More often than desired, these teams are only useful for companies' executives to tick the corresponding box in a certification process, be it ISO, ITIL, PCI, etc. Many IT security teams do not provide business value to their company. They fail to really protect the organisation from the increasing number of threats targeting its information systems. IT Security Management provides an insight into how to create and grow a team of passionate IT security professionals. We will call them "securiteers". They will add value to the business, improving the information security stance of organisations.

Proceedings of the International Conference on Industrial and Manufacturing Systems (CIMS-2020) Mar 13 2021 In order to deal with the societal challenges novel technology plays an important role. For the advancement of technology, Department of Industrial and Production Engineering under the aegis of NIT Jalandhar is organizing an "International Conference on Industrial and Manufacturing Systems" (CIMS-2020) from 26th -28th June, 2020. The present conference aims at providing a leading forum for sharing original research contributions and real-world developments in the field of Industrial and Manufacturing Systems so as to contribute its share for technological advancements. This volume encloses various manuscripts having its roots in the core of industrial and production engineering. Globalization provides all around development and this development is impossible without technological contributions. CIMS-2020, gathered the spirits of various academicians, researchers, scientists and practitioners, answering the vivid issues related to optimisation in the various problems of industrial and manufacturing systems.

Advances in Civil Engineering May 03 2020 This volume comprises select peer reviewed papers presented at the international conference - Advanced Research and Innovations in Civil Engineering (ARICE 2019). It brings together a wide variety of innovative topics and current developments in various branches of civil engineering. Some of the major topics covered include structural engineering, water resources engineering, transportation engineering, geotechnical engineering, environmental engineering, and remote sensing. The book also looks at emerging topics such as green building technologies, zero-energy buildings, smart materials, and intelligent transportation systems. Given its contents, the book will prove useful to students, researchers, and professionals working in the field of civil engineering.

10th International Conference on FRP Composites in Civil Engineering Oct 27 2019 This volume highlights the latest advances, innovations, and applications in the field of FRP composites and structures, as presented by leading international researchers and engineers at the 10th International Conference on Fibre-Reinforced Polymer (FRP) Composites in Civil Engineering (CICE), held in Istanbul, Turkey on December 8-10, 2021. It covers a diverse range of topics such as All FRP structures; Bond and interfacial stresses; Concrete-filled FRP tubular members; Concrete structures reinforced or pre-stressed with FRP; Confinement; Design issues/guidelines; Durability and long-term performance; Fire, impact and blast loading; FRP as internal reinforcement; Hybrid structures of FRP and other materials; Materials and products; Seismic retrofit of structures; Strengthening of concrete, steel, masonry and timber structures; and Testing. The contributions, which were selected by means of a rigorous international peer-review process, present a wealth of exciting ideas that will open novel research directions and foster multidisciplinary collaboration among different specialists.

Advances in Electrical Engineering and Electrical Machines Mar 25 2022 With success of ICEEE 2010 in Wuhan, China, and December 4 to 5, 2010, the second International Conference of Electrical and Electronics Engineering (ICEEE 2011) will be held in Macau, China, and December 1 to 2, 2011. ICEEE is an annual conference to call together researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Electrical and Electronics Engineering along with Computer Science and Technology, Communication Technology, Artificial Intelligence, Information Technology, etc. This year ICEEE is sponsored by International Industrial Electronics Center, Hong Kong. And based on the deserved reputation, more than 750 papers have been submitted to ICEEE 2011, from which about 98 high quality original papers have been selected for the conference presentation and inclusion in the “Electrical and Electronics Engineering” book based on the referees’ comments from peer-refereed. We expect that the Electrical and Electronics Engineering book will be a trigger for further related research and technology improvements in the importance subject including Power Engineering, Telecommunication, Integrated Circuit, Electronic amplifier, Nano-technologies, Circuits and networks, Microelectronics, Analog circuits, Digital circuits,

Circuits design, Silicon devices, Thin film technologies, VLSI, Sensors, CAD tools, Molecular computing, Superconductivity circuits, Antennas technology, System architectures, etc.

GPU Solutions to Multi-scale Problems in Science and Engineering Aug 30 2022

This book covers the new topic of GPU computing with many applications involved, taken from diverse fields such as networking, seismology, fluid mechanics, nano-materials, data-mining , earthquakes ,mantle convection, visualization. It will show the public why GPU computing is important and easy to use. It will offer a reason why GPU computing is useful and how to implement codes in an everyday situation.

Lecture Notes in Computational Intelligence and Decision Making Nov 08 2020 This book is devoted to current problems of artificial and computational intelligence including decision-making systems. Collecting, analysis, and processing information are the current directions of modern computer science. Development of new modern information and computer technologies for data analysis and processing in various fields of data mining and machine learning creates the conditions for increasing effectiveness of the information processing by both the decrease of time and the increase of accuracy of the data processing. The book contains of 54 science papers which include the results of research concerning the current directions in the fields of data mining, machine learning, and decision making. The papers are divided in terms of their topic into three sections. The first section "Analysis and Modeling of Complex Systems and Processes" contains of 26 papers, and the second section "Theoretical and Applied Aspects of Decision-Making Systems" contains of 13 papers. There are 15 papers in the third section "Computational Intelligence and Inductive Modeling". The book is focused to scientists and developers in the fields of data mining, machine learning and decision-making systems.

Future Information Technology - II Apr 25 2022 The new multimedia standards (for example, MPEG-21) facilitate the seamless integration of multiple modalities into interoperable multimedia frameworks, transforming the way people work and interact with multimedia data. These key technologies and multimedia solutions interact and collaborate with each other in increasingly effective ways, contributing to the multimedia revolution and having a significant impact across a wide spectrum of consumer, business, healthcare, education, and governmental domains. This book aims to provide a complete coverage of the areas outlined and to bring together the researchers from academic and industry as well as practitioners to share ideas, challenges, and solutions relating to the multifaceted aspects of this field.

Computational Problems in Science and Engineering Jun 03 2020 This book provides readers with modern computational techniques for solving variety of problems from electrical, mechanical, civil and chemical engineering. Mathematical methods are presented in a unified manner, so they can be applied consistently to problems in applied electromagnetics, strength of materials, fluid mechanics, heat and mass transfer, environmental engineering, biomedical engineering, signal processing, automatic control and more.

Design, Analysis and Test of Logic Circuits Under Uncertainty Jun 27 2022 Logic circuits are becoming increasingly susceptible to probabilistic behavior caused by external radiation and process variation. In addition, inherently probabilistic quantum- and nano-technologies are on the horizon as we approach the limits of CMOS scaling. Ensuring the reliability of such circuits despite the probabilistic behavior is a key challenge in IC design---one that necessitates a fundamental, probabilistic reformulation of synthesis and testing techniques. This monograph will present techniques for analyzing, designing, and testing logic circuits with probabilistic behavior.

Fundamental Numerical Methods for Electrical Engineering Jul 29 2022 Stormy development of electronic computation techniques (computer systems and software), observed during the last decades, has made possible automation of data processing in many important human activity areas, such as science, technology, economics and labor organization. In a broadly understood technology area, this development led to separation of specialized forms of using computers for the design and manufacturing processes, that is: – computer-aided design (CAD) – computer-aided manufacture (CAM) In order to show the role of computer in the first of the two applications mentioned above, let us consider basic stages of the design process for a standard piece of electronic system, or equipment: – formulation of requirements concerning user properties (characteristics, parameters) of the designed equipment, – elaboration of the initial, possibly general electric structure, – determination of mathematical model of the system on the basis of the adopted electric structure, – determination of basic responses (frequency- or time-domain) of the system, on the basis of previously established mathematical model, – repeated modification of the adopted diagram (changing its structure or element values) in case, when it does not satisfy the adopted requirements, – preparation of design and technological documentation, – manufacturing of model (prototype) series, according to the prepared documentation, – testing the prototype under the aspect of its electric properties, mechanical durability and sensitivity to environment conditions, – modification of prototype documentation, if necessary, and handing over the documentation to series production. The most important stages of the process under discussion are illustrated in Fig. I. 1. xi xii Introduction Fig. I.

Proceedings of the Second International Conference of Construction, Infrastructure, and Materials Jan 29 2020 This book comprises selected proceedings of the 2nd International Conference of Construction, Infrastructure, and Materials (ICCIM 2021) focusing on topics such as structural engineering, construction materials, geotechnical engineering, transportation system and engineering, construction management, water resources engineering, and infrastructure development. Its content will be useful to researchers, educators, practitioners, and policymakers alike.

Futuristic Communication and Network Technologies Dec 30 2019 This book presents select proceedings of the International Conference on Futuristic Communication and Network Technologies (CFCNT 2020) conducted at Vellore Institute of Technology,

Chennai. It covers various domains in communication engineering and networking technologies. This volume comprises of recent research in areas like optical communication, optical networks, optics and optical computing, emerging trends in photonics, MEMS and sensors, active and passive RF components and devices, antenna systems and applications, RF devices and antennas for microwave emerging technologies, wireless communication for future networks, signal and image processing, machine learning/AI for networks, internet of intelligent things, network security and blockchain technologies. This book will be useful for researchers, professionals, and engineers working in the core areas of electronics and communication.

Computer Networks, Big Data and IoT Mar 01 2020 This book presents best selected research papers presented at the International Conference on Computer Networks, Big Data and IoT (ICCBI 2020), organized by Vaigai College Engineering, Madurai, Tamil Nadu, India, during 15–16 December 2020. The book covers original papers on computer networks, network protocols and wireless networks, data communication technologies and network security. The book is a valuable resource and reference for researchers, instructors, students, scientists, engineers, managers and industry practitioners in those important areas.

Fundamentals of Digital Electronics Feb 09 2021 This book presents the fundamentals of digital electronics in a focused and comprehensive manner with many illustrations for understanding of the subject with high clarity. Digital Signal Processing (DSP) application information is provided for many topics of the subject to appreciate the practical significance of learning. To summarize, this book lays a foundation for students to become DSP engineers.

Advances in Industrial Engineering and Operations Research Jan 23 2022 This volume contains contributions from prominent researchers who participated in the 2007 IAENG International Conference on Operations Research. It presents theories and applications of modern industrial engineering and operations research to meet the needs of rapidly developing fields. The book reflects the tremendous advances in communication systems and electrical engineering and also serves as an excellent reference work for researchers and graduate students.

Multiscale Modelling and Simulation Dec 22 2021 In August 2003, ETHZ Computational Laboratory (CoLab), together with the Swiss Center for Scientific Computing in Manno and the Università della Svizzera Italiana (USI), organized the Summer School in "Multiscale Modelling and Simulation" in Lugano, Switzerland. This summer school brought together experts in different disciplines to exchange ideas on how to link methodologies on different scales. Relevant examples of practical interest include: structural analysis of materials, flow through porous media, turbulent transport in high Reynolds number flows, large-scale molecular dynamic simulations, ab-initio physics and chemistry, and a multitude of others. Though multiple scale models are not new, the topic has recently taken on a new sense of urgency. A number of hybrid approaches are now created in which ideas coming from distinct disciplines

or modelling approaches are unified to produce new and computationally efficient techniques

A Boundary Element Method for Two-dimensional Contact Problems May 27 2022