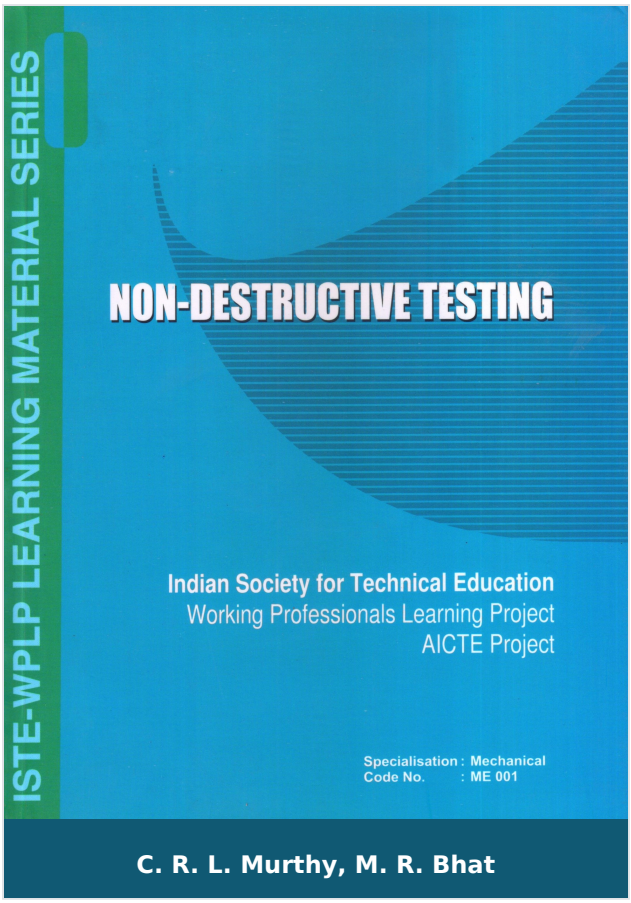

Non-Destructive Testing

Author :	C. R. L. Murthy, M. R. Bhat
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E-ISBN 13 :	978-93-55386-29-8
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Publisher :	Khanna Publishing House
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Product Description

Quality, Reliability and Structural Integrity Evaluation have been the key words for a Safe world. Non-invasive industrial diagnostics though have been in practice through intuitive methods since times immemorial, the scientific formalization of the term Nondestructive Testing (NDT) which is synonymously used with Nondestructive Evaluation (NDE) and Nondestructive Inspection (NDI) is only a few centuries old. With the evolving needs of the industry the Science and Technology of NDE has lead to tremendous Research and Development efforts and standardization of testing techniques to meet these ever changing requirements. In fact, the basic concept of the subject itself has taken a transformation and brought forth a newer title Structural Health Monitoring (SHM) and Smart Structures hand in hand with the changing concepts of design and discovery of newer materials to achieve higher levels of safety, quality and reliability via real time diagnosis and implementation of healing strategies.

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- Real -Time Radiography
- Computed Tomography
- Magnetic Particle Testing
- Eddy Current Testing
- Thermal Inspection
- SECTION IV Acoustic Methods
- Ultrasonic Testing
- Acoustic Emission Testing
- SECTION V Other techniques
- Microwave Inspection
- Shearography,
- Bibliography

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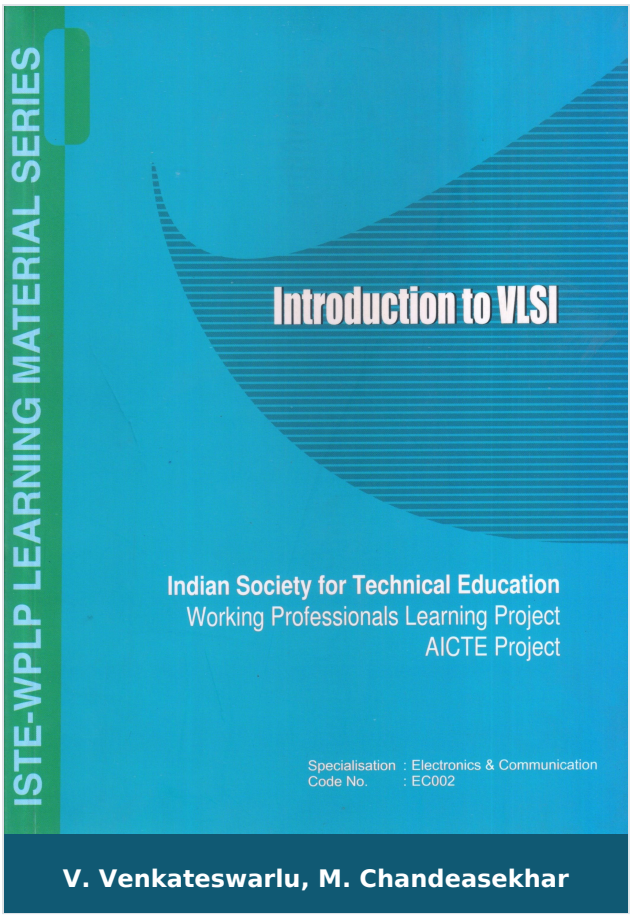

Introduction to VLSI

Author :	V. Venkateswarlu, M. Chandeasekhar
ISBN 13 :	978-93-55382-38-2
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E-ISBN 13 :	978-93-55382-38-2
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Language :	English
Publisher :	Khanna Publishing House
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Product Description

The growing applicati0ns of Very Large Scale Integration in all the fields of electronics, particularly consumer and professional electronics, demand the working engineers/professionals to know more about VLSI. With this objective in view, the Indian Society for Technical Education (ISTE), which is a non-profit organization, requested the authors to prepare Learning Materials on VLSI for the working professionals. The material in this Book is prepared by emphasizing the basics of CMOS (Complementary Metal Oxide Semiconductors) Transistors, their characterization, process, Logic circuits, subsystems, and the design of systems using Computer Aided Design (CAD). This material gives the overview of VLSI, particularly the digital circuits and systems. The topics for this book are based on many text books on VLSI and from materials given in various websites. We thank all the authors and publishers of the books and websites.

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- VLSI CAD Systems
- Abbreviations and Symbols
- References

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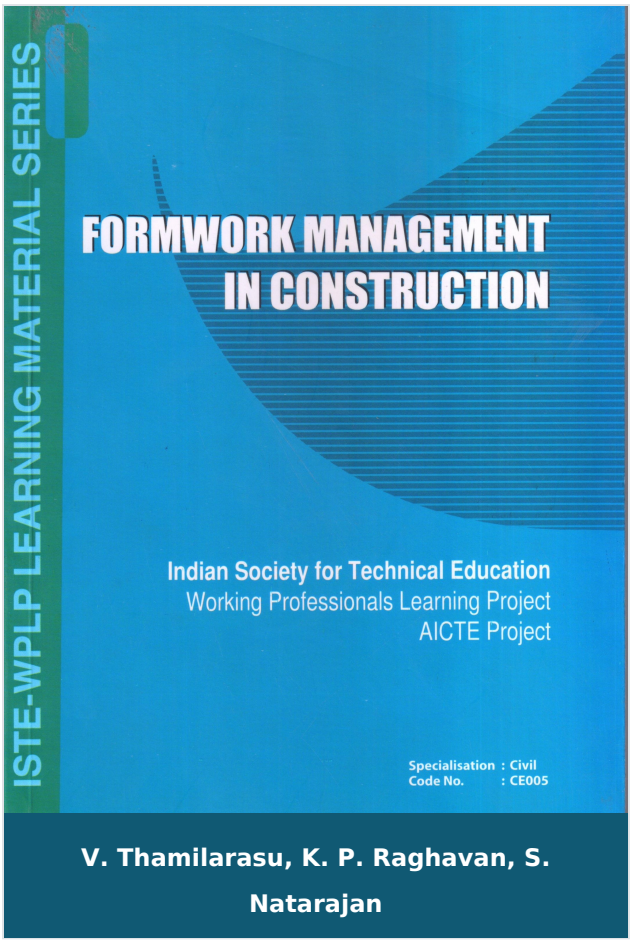

Formwork management in Construction

Author :	V. Thamilarasu, K. P. Raghavan, S. Natarajan
ISBN 13 :	978-93-55389-30-5
ISBN 10 :	9355389302
E-ISBN 13 :	978-93-55389-30-5
Edition :	1
Pages :	130
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Year :	2007
Language :	English
Publisher :	Khanna Publishing House
M.R.P :	Rs 182.00
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Condition Type :	New
Country Origin :	India

Product Description

This book on "Formwork Management in Construction" has been written keeping in mind the importance of Formwork and its Applications for the Construction Industry. A good understanding of effective and safe use of formwork & scaffolding for various applications is essential for students of Civil Engineering, Site Engineers, Site Supervisors and Builders.

Formwork is one of the most neglected subject in any civil construction as it is only a part of enabling work. Strict norms on safety and proper design of formwork is generally not addressed properly in case of normal construction. The construction happening in the rural areas and in some part of urban areas are (mostly residential constructions) carried out using conventional material available in the market (Timber, casuarina poles).

The requirement for good Formwork is realized after the introduction of Ready Mixed Concrete (RMC) in the market, in which the formwork should be adequately designed to take care of the concrete pressure.

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- Labour Material Productivity
- Formwork Management
- Training of Workmen
- Slip Forming
- Formwork for Special Application, Aluminium Formwork and Precast Moulds
- Safety in Formwork
- References

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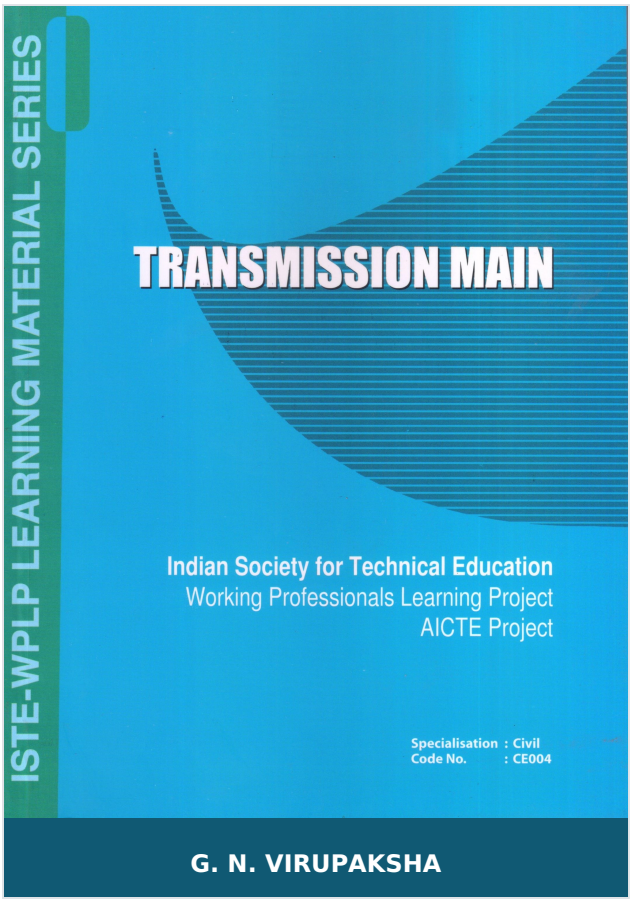

Transmission Main

Author :	G. N. VIRUPAKSHA
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E-ISBN 13 :	978-93-55389-75-6
Edition :	1
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Year :	2006
Language :	English
Publisher :	Khanna Publishing House
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Country Origin :	India

Product Description

Water is essential commodity for the survival of life. Providing safe drinking water of adequate quantity for this purpose. Water supply system involves transmission of water from source to area of consumption safely. Transmission Main account for the appreciable part of capital outlay of water system and hence careful consideration of techno-economics is called for while designing the transmission main.

This learning material "Transmission Main" clearly mentions selections of pipe material, advantages and disadvantages, optimization of size of main, design criteria and need for protection of pipeline against transient pressure and also procedure for laying and maintenance of pipeline,.

This learning material is useful for practicing engineers, administrators and any other authority that are responsible for water supply and irrigation activities.

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- Transmission Main Design.
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- Surge Protection System.
- Flow Measurement System.
- Laying of Pipes.
- maintenance
- of Transmission system.

Author

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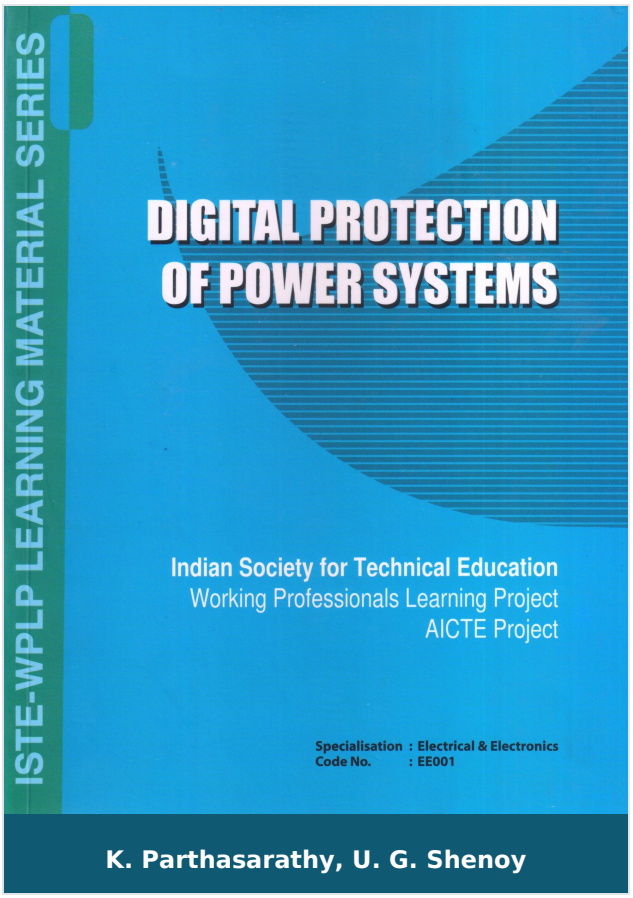

Digital Protection of Power Systems

Author :	K. Parthasarathy, U. G. Shenoy
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Product Description

The development in the area of power system protection has taken a tremendous leap forward in view of the technological advancements in electronics, especially with the introduction of new designs in microprocessor technology such as microcontrollers and Digital Signal Processors (DSPs). The subject on digital protection of power systems has become highly interdisciplinary encompassing various disciplines such as analog and digital electronics, digital signal processing, software development, communication technology, Artificial Intelligence (AI) techniques in addition to the study of power system subjects like electrical machines, power system analysis, simulation /modeling involving load flow, short circuit, stability problems etc. This book is intended for practicing engineers, planning and operation staff working in power plant, industries and electrical utilities to familiarize with the developments in the protection of power system devices and networks. Research in academic institutions, R&D establishments and teachers conduction advanced power system protection course in engineering college can use this book as reference.

The chapters in the book have comprehensive coverage of various issues of power system protection, namely digital relay architecture, modelling

techniques for simulation transient phenomena in power networks based on Electromagnetic Transient Package (EMTP), result of case studies for better appreciation of EMTP, Modelling procedures of current and voltage transformers, Capacitor Voltage Transformers (CVTs) and their transient behaviour, hardware and software considerations keeping in view of the latest advancements in hardware designs based on DSPs and microcontrollers and software development issues of various digital relaying algorithms based on signal processing techniques for implementing high speed and accurate relaying schemes, application of digital relaying for protection of major power system components like busbars, power transformers, synchronous and induction machines.

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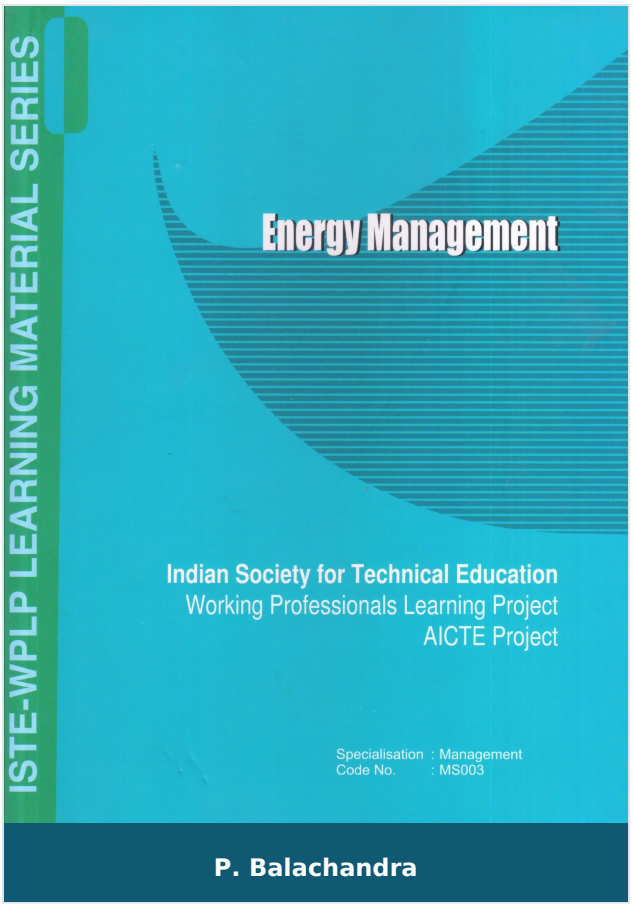

Energy Management

Author :	P. Balachandra
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E-ISBN 13 :	978-93-55384-47-8
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Product Description

Supply and utilization of energy, forms an integral part of economic development of a country. Further, energy interacts with all aspects of social and economic development, including livelihoods, water, agriculture, industry, environment, population, health education, job creation and gender- related issues. These energy interactions have both positive and negative implications for every sector of the economy as well as for the environment. The objective of the author, is to introduce the prospective readers of this book to the fascinating world of energy and how it interacts with many other systems which are closely connected to the human system. This is done with a focus on India.

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- Economics of Energy Supply and Use.
- Energy Efficiency: A new Source of Energy.
- Renewable Energy.
- Energy Modeling and Integrated Resource Planning.
- Energy Supply and Demand Security,
- Energy Policy and Regulatory Issues.
- Typical Questions
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Author

P. Balachandra

Dr. P. Balachandra is a member of the Faculty, at the Department of Management Studies and Associate Faculty at the Centre for Sustainable Technologies Indian Institute of Science (IISc), Bangalore, India. In addition, he served as a visiting expert at the Harvard Kennedy School, Harvard University, USA; UNDP-Regional Centre, Bangkok; Asian Institute of Technology, Bangkok and Indira Gandhi Institute of Development Research,

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Mumbai. He received his ph.D. in Energy and Enviroment form the IISc in 2000. He has about 22 years of Research and Teaching experience in the field of energy, environment and technology management. His Research expertise includes energy & environmental economics and policy, sustainable development, climate change mitigation, technology transfer and diffusion, renewable energy and sustainable mobility. His Research is focused predominantly on policy analysis, technology assessments, economic analyses, modeling and planning, arriving at solutions relevant for developing countries like India and truing from the perspective of sustainable development. He has investigated about 20 research and consultancy projects. Prominent Organizations, for which he has carried out Consultancy/Research assignments, are UNDP, European Commission, World Bank, SIDA AIT, TERI, IGIDR and various ministries of Government of India and private sector organizations. He ha co-authored three books and published about 70 papers in various iInternational and National journals, conferences and edited books.

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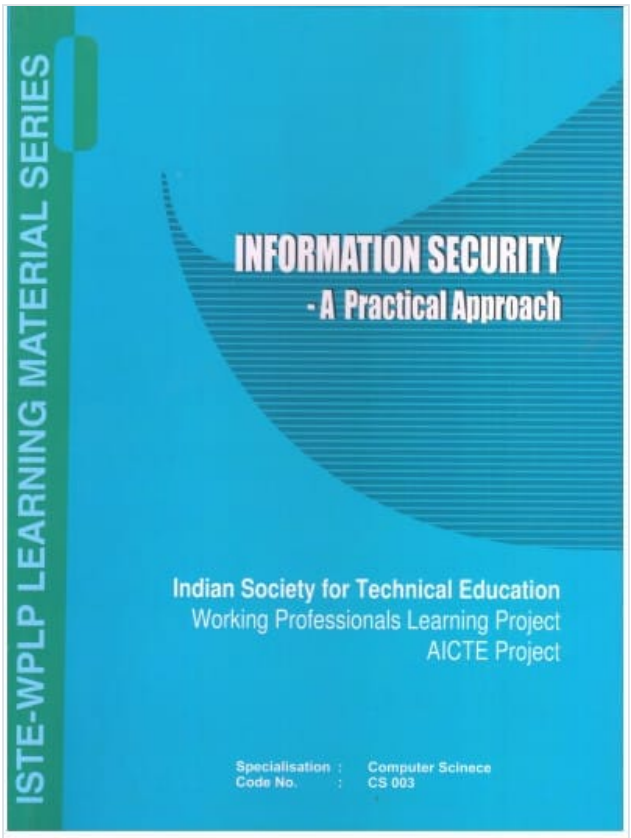

V.Vasudevan, S. Dhanasekaran, B. S. Murugan

Information Security- a Practical Approach

Author :	V.Vasudevan, S. Dhanasekaran, B. S. Murugan
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Product Description

The book Information Security-A Practical Approach, is a strenuous attempt taken by the authors to encapsulate concepts of Network-Security. Information security, something shortened to InfoSec, is the modification, inspection, recording or destruction of information. This book provides a rudimentary and firsthand knowledge on Information Security pertaining to the standards and procedures available in Information Security, the implementation of security and authentication algorithms which is the need of the hour for the small scale industries. The components of the chapters give a perspicuous view on confidentiality, integrity, availability, policy and its various types, encryption, decryption and so forth to cater not the needs of the working professionals and entrepreneurs as well. Especially the chapter on case studies provides hands on experience and reiterates the significance of protecting data and information. The prime objective of this book is to enable the entrepreneurs of Small Scale Industries to ensure secrecy and privacy of information.

There has been a vast study on physical security and network security whereas information security is the latest process that gains momentum. We feel obliged to share our knowledge, analysis and recommendations through this manual which will create awareness among the entrepreneurs, about the paramount important of Information Security and to understand the easiest way to implementation those algorithms.

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- Case Studies

Author

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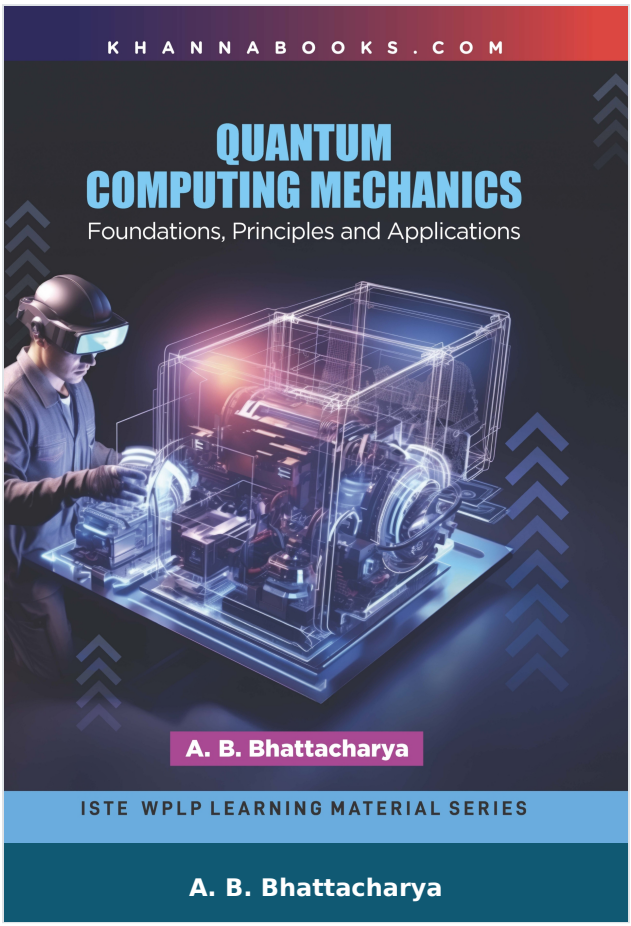

Quantum Computing Mechanics(Foundations, Principles and Applications)

Author :	A. B. Bhattacharya
ISBN 13 :	978-93-55388-85-8
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E-ISBN 13 :	978-93-55388-85-8
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M.R.P :	Rs 548.00
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Condition Type :	New
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Product Description

Quantum Computing Mechanics(Foundations, Principles and Applications) **Unlock the Quantum Frontier Quantum Computing Mechanics**: Foundations, Principles and Applications is a comprehensive journey into the heart of one of the 21st century's most transformative scientific revolutions. Bridging the disciplines of quantum mechanics and computational theory, this book presents a lucid and in-depth exploration of quantum computing—from its theoretical foundations to its real-world applications. **Whether you are a curious student, a passionate researcher, or an industry professional, this volume offers:**

- A rigorous yet accessible introduction to the principles of quantum mechanics and how they power next-generation computation.
- Core topics like qubits, quantum gates, superposition, entanglement, and interference, laid out clearly with diagrams, examples, and circuit design.
- Step-by-step walkthroughs of groundbreaking quantum algorithms including Grover's, Shor's, and the Quantum Fourier Transform.
- Essential coverage of error correction, fault tolerance, and the global push toward quantum supremacy.
- Extensive practice sections with short questions, multiple-choice quizzes, solved numerical problems, and innovative project ideas—making it ideal for self-study or academic use.

From the roots of classical logic to the surreal domain of entangled qubits, **Quantum Computing Mechanics** brings clarity to complexity. It does not merely teach you what quantum computing is—it shows you why it matters.

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- QUANTUM ALGORITHMS
- QUANTUM ERROR CORRECTION AND FAULT TOLERANCE
- APPENDICES

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Prof. A. B. Bhattacharya did his MSc and PhD degree from the University of Calcutta in Physics and Post-doc from the Massachusetts Institute of Technology (MIT), Cambridge, USA. He worked in close collaboration with the leading laboratories like Lincoln Laboratory; Milestone Hill Observatory; Earth, Atmospheric and Planetary Sciences division of MIT and many other well recognized laboratories in India and abroad. He served as Professor & Head of the Department of Physics, University of Kalyani; Dean of Research and Head of the ECE Department, Techno India University; Pro Vice Chancellor of JIS University and Director of Brainware University. He has published 32 text books for Science and Engineering students, two popular books for general readers and over 400 research articles in reputed International Journals. Under his supervision 24 scholars

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received their doctoral degree. He is a fellow of the Institute of Electronics and Telecommunication Engineers and member of many scientific organizations. India International Friendship Society awarded him the prestigious "Shiksha Ratna Award" and Certificate of Excellence for meritorious services, outstanding performance and significant contribution to education. The International Institute of Success Awareness hon0red him with their globally recognized "Glory of India Gold Medal" for his outstanding contribution to the national stature of India. A few words from the certificate issued by Prof. Williams of MIT may be quoted "Our collaborative effort was directed at the wavelength dependence of radar echoes observations with the Millstone Hill UHF radar in Westford. He made use of the Charles River Data System computer in the Weather Radar Laboratory for these calculations. His results help to make a convincing case that the volume reflectivity associated with lighting is a diminishing function of radar wavelength, contrary to contemporary thinking". Dr.

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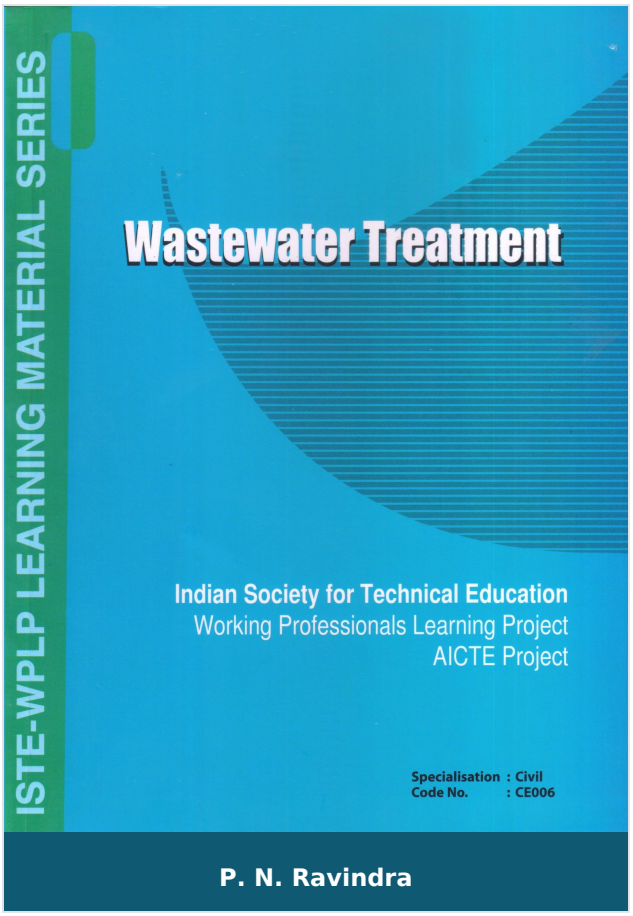

Wastewater Treatment

Author :	P. N. Ravindra
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Product Description

This book written under working professional learning projects is with the intention of providing sufficient information and knowledge about the principles of wastewater treatment to the water works engineers. This book comprehensively deal with the basics of wastewater treatment, laying emphasis on current trends. To convey ideas and concepts more clearly, the book contains descriptive diagrams with suitable explanation. The book covers a broad spectrum of material dealing with wastewater treatment, as it is far more than just and update of the existing books on wastewater treatment, which includes the latest concepts and processes. The topics presented can be useful not only to the wastewater engineers, but also to the plant operators, and managers who are in the public utilities. This learning material will also be a useful reference book for planners, administrators, students and general readers. It will be of interest to those non-technical staff, who wish to understand technical issues relating to wastewater treatment. One who reads this book systematically from chapter one will surely acquire an understanding 0n the concepts of wastewater treatment, including schemes of treatment.

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- Membrane Treatment Systems
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- Abbreviations

Author

P. N. Ravindra

Dr. P. N. Ravindra The author of this book is working as Assistant Executive Engineering for Bangalore Water Supply and Sewerage Board (BWSSB) and has more than 25 years of working experience in the field of water and wastewater treatment. He has written several books in water discipline and published several research papers. It is a matter of pride and privilege for the author to write a book for his fellow engineers, who can make this book worthwhile. He acknowledges the help he has received from Mr Narayana, Cheif

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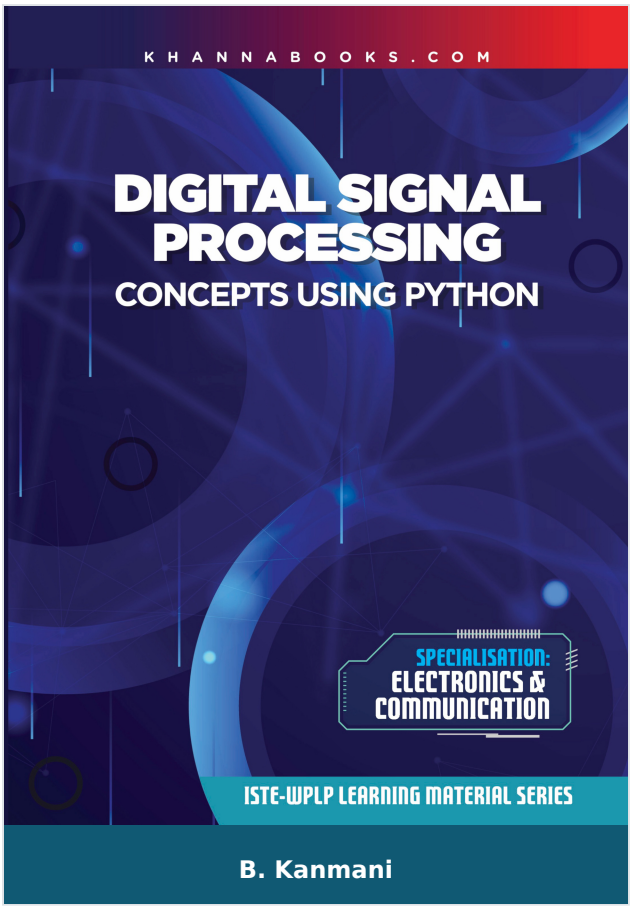

Digital Signal Processing Concepts Using Python

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Product Description

In this book, we have addressed various concepts in the typical Under Graduate course on, 'Digital Signal Processing'. The focus is to have a quick overview of the intended concept. This book is not a replacement to the prescribed text book in the curriculum. However, through the examples illustrated, it helps comprehend the concept. In addition, every Chapter of the book is accompanied by the link to the Python code is developed on the Goggle Colaboratory and hence is an Open source programming environment. No prior knowledge of Python is essential; however, and experience in any programming language will prove useful. The programming approach is to be able to develop the code for the concept from the mathematical equation and avoid the use of in-built functions. We would like to add that, we are using Python, purely to help comprehend the signal processing concept and not develop and efficient Python code. Experienced programmers may build alternate and efficient code.

The motivation for coming out with this compilation, is because, students are usually introduced to the required pre-requisitions in earlier courses. For example, the 'Engineering Mathematics', course is likely to have introduced Calculus (integration, differential equation, difference equation), Laplace Transform, Fourier series, Fourier Transform, Z-Transform. The courses on 'Analog Electronic Circuits and 'Network Analysis', is likely to have introduced basic electronic circuits including resistors, capacitors, inductors and Operational amplifiers, that require the need to obtain the transfer function, the response to a given output. The student is usually introduced to another independent programming language (C/C++/ Python/Matlab /Sci-lab/ R programming/any other), where the emphasis is on the syntax of the language. In this Book, we provide a brief introduction to every pre-requisite; explain the concept, together with few examples for every concept. In addition, wherever applicable, different methods of arriving at the given solution are also included. The concept of Digital Signal Processing

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is complete, even without any reference to Python. The reference to Python is purely for students to explore further.

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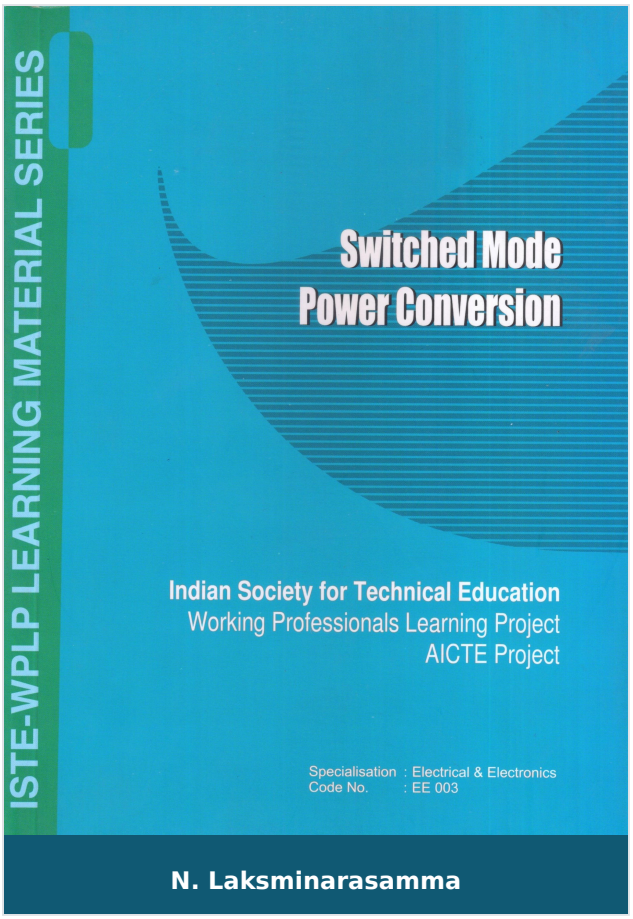

Switched Mode Power Conversion

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Product Description

The switched mode power conversion course is a design and application oriented subject with vast employment and career potential. Presently, the subject invariably has no laboratory component at all. When present, the laboratory session is a euphemism for a dry PC based entry and print out sessions linked to some branded circuit simulation software. However, the students rarely learn the skills of assembling circuits, testing & debugging the same and designing application circuits.

This learning module is intended to serve as a bridge course for fresh engineers who take up power engineering as their career. This will aid in filling the gap between the academics and the industry requirement. The material is designed to be schedules for five days. The study material gives an overview of switched mode power conversion with a design example organized in five Chapters as follows.

The concepts of power processing, a simple power processing system such as a power converter, elements available at the disposal of a power engineer in the design of efficient power converters are discussed in chapter 1. The study state analyses of the basic converter topologies are explained. The basic design of a power converter is explained in Chapter 2 by a spread sheet procedure. Simulation of the designed topology using circuit simulation software SEQUEL (Solver for Equation with User defined Elements) is discussed. The theoretical estimation of the efficiency of the designed power converter is discussed in Chapter 3. The effects of increase in the switching frequency on the losses incurred in the power converter are discussed with a design example.

The state of the art in the power converters are discussed in Chapter 4. The demand is forever moving towards high power densities for which higher switching frequencies becomes inevitable. The problems associated with higher switching frequency are discussed. The technology which provides a solution for high power density power converters such as soft switching are discussed. The concepts of soft switching with an

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example is explained. Chapter 5 gives an Introduction to construction projects of scaled down power level. These may be used as training kits along with this learning module to get an overview of switching converters.

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Dr. N. Lakshminarasamma, Faculty, Dept. of Electrical Engineering, Indian Institute of technology, Madras, Chennai. Email: lakshmin@iitm.ac.in N. Lakshminarasamma received B.E. degree in Electrical Engineering in 1994, Master in power electronics in 1997 from Bangalore University, and Ph.D. degree from Indian Institute of Science, Bangalore, India in 2007. Currently she is faculty at Indian Institute of Technology Madras, Chennai. She has 4 years of academic experience in B.M.S. college of Engineering, Bangalore and Nitte Institute of Technology, Bangalore in the Dept. of Electrical Engineering; she has worked as a software engineer with 12 Technologies India Private Limited and as a Systems Engineer in GE Healthcare India Limited. She has coauthored four journal papers in peer-reviewed journals, including the IEEE Transactions on Power Electronics and several premier conferences. Her areas of interest are power electronics, switched mode power converters and resonant converters.

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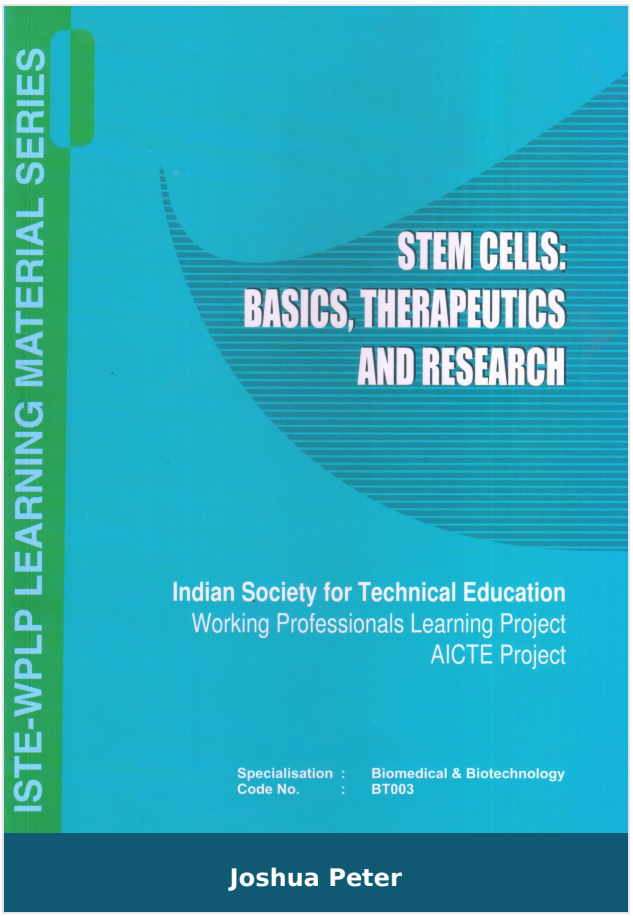

Stem Cells: Basics, Therapeutics and Research

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Product Description

The objective of this book is to provide basic knowledge on types of stem cells, its isolation, and its application in both research and clinical fields, and also to know ethical aspects involved in stem cell culture and application.

Stem cells: Stem Cells are Master cells. There are three kinds of stem Cells: Totipotent (literally al powerful), a newly fertilized egg, Pluripotent (Pluri-Many), an embryo with 50-100 cells, beings to differentiate, Multipotent (Range of Cell Types), obtained from fetal and mature human. This book covers sources, properties of different types of stem cells.

A Clone: There are two types of Cloning, derived from nuclear transfer technology. Therapeutic Clone- Production of replacement of cells and tissues genetically compatible with patient. Reproductive clone-this will will produce genetically identical offspring to one of his or her parents (Dolly the sheep).

Embryonic Stem Cells: These are isolated from inner cell mass (ICM) of the Blastocyst. It proliferates extensively "in-vitro", maintains a normal diploid karyotype over extended culture and differentiates with derivatives of all the three germ layers - ectoderm and mesoderm. Express high levels of Oct 4, a transcription factor specific to ICMs of Blastocyst, show high level of telomerase activity.

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- Cloning
- Scientific and Ethical Debate

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