

# **Environmental Science And Engineering Ravikrishnan**

Fundamental Concept in Environmental Studies  
Nanotechnology: Principles and Practices  
Epidemiology of Electromagnetic Fields  
Fluid Mechanics  
Introduction to Nano  
Environmental Engineering  
Environmental Science and Engineering  
Python Machine Learning By Example  
Nanotechnology, the Brain, and the Future  
Engineering Construction Specifications  
Basic Concepts of Electrical Engineering  
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ENERGY SPECIAL ELECTRICAL MACHINES

## **Fundamental Concept in Environmental Studies**

The Importance Of Environmental Studies Cannot Be Disputed Since The Need For Sustainable Development Is A Key To The Future Of Mankind. Recognising This, The Honourable Supreme Court Of India Directed The Ugc To Introduce A Basic Course On Environmental Education For Undergraduate Courses In All Disciplines, To Be Implemented By Every University In The Country. Accordingly, The Ugc Constituted An Expert Committee To Formulate A Six-Month Core Module Syllabus For Environmental Studies. This Textbook Is The Outcome Of The Ugc S Efforts And Has Been Prepared As Per The Syllabus. It Is Designed To Bring About An Awareness On A Variety Of Environmental Concerns. It Attempts To Create A Pro-Environmental Attitude And A Behavioural Pattern In Society That Is Based On Creating Sustainable Lifestyles And A New Ethic Towards Conservation. This Textbook Stresses On A Balanced View Of Issues That Affect Our Daily Lives. These Issues Are Related To The Conflict Between Existing `Development Strategies And The Need For `Conservation . It Not Only Makes The Student Better Informed On These Concerns, But Is Expected To Lead The Student Towards Positive Action To Improve The Environment. Based On A Multidisciplinary Approach That Brings

About An Appreciation Of The Natural World And Human Impact On Its Integrity, This Textbook Seeks Practical Answers To Make Human Civilization Sustainable On The Earth S Finite Resources. Attractively Priced At Rupees One Hundred And Fifteen Only, This Textbook Covers The Syllabus As Structured By The Ugc, Divided Into 8 Units And 50 Lectures. The First 7 Units, Which Cover 45 Lectures Are Classroom Teaching-Based, And Enhance Knowledge Skills And Attitude To Environment. Unit 8 Is Based On Field Activities To Be Covered In 5 Lecture Hours And Would Provide Students With First Hand Knowledge On Various Local Environmental Issues.

### **Nanotechnology: Principles and Practices**

This is a collection of problems and solutions in fluid mechanics for students of all engineering disciplines. The text is intended to support undergraduate courses and be useful to academic tutors in supervising design projects.

### **Epidemiology of Electromagnetic Fields**

Written in lucid language, the book offers a detailed treatment of fundamental concepts of chemistry and its engineering applications.

## **Fluid Mechanics**

For B.A. , B.Sc. , B.Com. , B.H.Sc. , B.C.A., (Management) and other Undergraduate Classes as per UGC Model Curriculum In addition to certain corrections, topics like Hydrologic Cycle, Air Pollution, Solar and Wind Energies are modified in the light of present requirement. Some new topics like Dissolved Oxygen, Biological Oxygen Demand, Chemical Oxygen Demand, Natural Geysers, Environmental Club, Green Accounting, Honey and Bee Keeping, Social Forestry are also introduced. With additional data, new topics and necessary diagrammes, the book will be of immense use and more popular among students and readers.

## **Introduction to Nano**

## **Environmental Engineering**

The complexities of designing piles for lateral loads are manifold as there are many forces that are critical to the design of big structures such as bridges, offshore and waterfront structures and retaining walls. The loads on structures should be supported either horizontally or laterally or in both directions and most structures have in common that they are founded on piles. To create solid foundations, the

pile designer is driven towards finding the critical load on a certain structure, either by causing overload or by causing too much lateral deflection. This second edition of Reese and Van Impe's course book explores and explains lateral load design and procedures for designing piles and pile groups, accounting for the soil resistance, as related to the lateral deflection of the pile. It addresses the analysis of piles of varying stiffness installed into soils with a variety of characteristics, accounting for the axial load at the top of the pile and for the rotational restraint of the pile head. The presented method using load-transfer functions is currently applied in practice by thousands of engineering offices in the world. Moreover, various experimental case design examples, including the design of an offshore platform pile foundation are given to complement theory. The rich list of relevant publications will serve the user into further reading. Designed as a textbook for senior undergraduate/graduate student courses in pile engineering, foundation engineering and related subjects, this set of book and CD-ROM will also benefit professionals in civil and mining engineering and in the applied earth sciences.

### **Environmental Science and Engineering**

This book takes a fresh, student-oriented approach to teaching the material covered in the senior- and first-year graduate-level matrix structural analysis course. Unlike traditional texts for this course that are difficult to read, Kassimali takes special care to provide understandable and exceptionally clear explanations

of concepts, step-by-step procedures for analysis, flowcharts, and interesting and modern examples, producing a technically and mathematically accurate presentation of the subject. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

### **Python Machine Learning By Example**

Our brain is the source of everything that makes us human: language, creativity, rationality, emotion, communication, culture, politics. The neurosciences have given us, in recent decades, fundamental new insights into how the brain works and what that means for how we see ourselves as individuals and as communities. Now – with the help of new advances in nanotechnology – brain science proposes to go further: to study its molecular foundations, to repair brain functions, to create mind-machine interfaces, and to enhance human mental capacities in radical ways. This book explores the convergence of these two revolutionary scientific fields and the implications of this convergence for the future of human societies. In the process, the book offers a significant new approach to technology assessment, one which operates in real-time, alongside the innovation process, to inform the ways in which new fields of science and technology emerge in, get shaped by, and help shape human societies.

## **Nanotechnology, the Brain, and the Future**

Given the rapid advances in the field, this book offers an up-to-date introduction to nanomaterials and nanotechnology. Though condensed into a relatively small volume, it spans the whole range of multidisciplinary topics related to nanotechnology. Starting with the basic concepts of quantum mechanics and solid state physics, it presents both physical and chemical synthetic methods, as well as analytical techniques for studying nanostructures. The size-specific properties of nanomaterials, such as their thermal, mechanical, optical and magnetic characteristics, are discussed in detail. The book goes on to illustrate the various applications of nanomaterials in electronics, optoelectronics, cosmetics, energy, textiles and the medical field and discusses the environmental impact of these technologies. Many new areas, materials and effects are then introduced, including spintronics, soft lithography, metamaterials, the lotus effect, the Gecko effect and graphene. The book also explains the functional principles of essential techniques, such as scanning tunneling microscopy (STM), atomic force microscopy (AFM), scanning near field optical microscopy (SNOM), Raman spectroscopy and photoelectron microscopy. In closing, Chapter 14, 'Practicals', provides a helpful guide to setting up and conducting inexpensive nanotechnology experiments in teaching laboratories.

## **Engineering Construction Specifications**

Inspired by a new revival of worldwide interest in extra-high-voltage (EHV) and ultra-high-voltage (UHV) transmission, High Voltage Engineering merges the latest research with the extensive experience of the best in the field to deliver a comprehensive treatment of electrical insulation systems for the next generation of utility engineers and electric power professionals. The book offers extensive coverage of the physical basis of high-voltage engineering, from insulation stress and strength to lightning attachment and protection and beyond. Presenting information critical to the design, selection, testing, maintenance, and operation of a myriad of high-voltage power equipment, this must-have text: Discusses power system overvoltages, electric field calculation, and statistical analysis of ionization and breakdown phenomena essential for proper planning and interpretation of high-voltage tests Considers the breakdown of gases (SF<sub>6</sub>), liquids (insulating oil), solids, and composite materials, as well as the breakdown characteristics of long air gaps Describes insulation systems currently used in high-voltage engineering, including air insulation and insulators in overhead power transmission lines, gas-insulated substation (GIS) and cables, oil-paper insulation in power transformers, paper-oil insulation in high-voltage cables, and polymer insulation in cables Examines contemporary practices in insulation coordination in association with the International Electrotechnical Commission (IEC) definition and the latest standards Explores high-voltage testing and measuring techniques, from generation of test

voltages to digital measuring methods With an emphasis on handling practical situations encountered in the operation of high-voltage power equipment, High Voltage Engineering provides readers with a detailed, real-world understanding of electrical insulation systems, including the various factors affecting—and the actual means of evaluating—insulation performance and their application in the establishment of technical specifications.

### **Basic Concepts of Electrical Engineering**

### **Single Piles and Pile Groups Under Lateral Loading, 2nd Edition**

A panel of respected air pollution control educators and practicing professionals critically survey the both principles and practices underlying control processes, and illustrate these with a host of detailed design examples for practicing engineers. The authors discuss the performance, potential, and limitations of the major control processes-including fabric filtration, cyclones, electrostatic precipitation, wet and dry scrubbing, and condensation-as a basis for intelligent planning of abatement systems,. Additional chapters critically examine flare processes, thermal oxidation, catalytic oxidation, gas-phase activated carbon adsorption, and gas-phase biofiltration. The contributors detail the Best Available Technologies

(BAT) for air pollution control and provide cost data, examples, theoretical explanations, and engineering methods for the design, installation, and operation of air pollution process equipment. Methods of practical design calculation are illustrated by numerous numerical calculations.

### **Environmental Engineering**

Everything needed to pass the first part of the City & Guilds 2365 Diploma in Electrical Installations. Basic Electrical Installation Work will be of value to students taking the first year course of an electrical installation apprenticeship, as well as lecturers teaching it. The book provides answers to all of the 2365 syllabus learning outcomes, and one chapter is dedicated to each of the five units in the City & Guilds course. This edition is brought up to date and in line with the 18th Edition of the IET Regulations: It can be used to support independent learning or a college based course of study Full-colour diagrams and photographs explain difficult concepts and clear definitions of technical terms make the book a quick and easy reference Extensive online material on the companion website [www.routledge.com/cw/linsley](http://www.routledge.com/cw/linsley) helps both students and lecturers

### **Concrete Construction Engineering Handbook**

Energy is a vital part of our lives. It powers our computer, lights our home, and moves our car. It also costs a lot of money and pollutes our environment. In *Energy: 25 Projects Investigate Why We Need Power and How We Get It*, kids ages 9–12 learn about the history and science of the world’s energy sources, from nonrenewable fossil fuels such as oil and natural gas to renewable sources such as solar and wind power. Sidebars and fun trivia break up the text, making it easily accessible and engaging, while hands-on projects encourage active learning. Requiring little adult supervision and using supplies commonly found in most households, activities range from constructing a battery to recreating an oil spill to see how difficult cleanup can be. By exploring the advantages and disadvantages of each energy source, kids will gain insight into the future of energy and its impact on our planet.

### **The United Nations world water development report, 2017**

Focused on current environmental problems, their causes, effects, and solutions, this text explores the basic nature of the natural systems. Using a technical (quantitative) approach - unusual for a book at the introductory level - it maintains a broad perspective that appeals to all students, but at the same time is useful to those proceeding further in environmental or sanitary engineering. \*features unusually broad and balanced coverage of topics: in addition to the traditional topics of water quality, wastewater treatment, and air pollution, it explains the root

causes of environmental problems and clarifies the relationships between natural systems and technology. \*provides discussions on solid and hazardous wastes, environmental management, and ethics - topics seldom found in a single text. \*offers an authoritative perspective on both theory and practice: the authors are world renowned scientists and engineers with academic and practical experience in environmental matters. \*NEW - discusses the changing role of technology - e.g., preventive technology as an alternative to traditional end-of-pipe solutions. \*NEW - considers recent data on the causes of environmental problem

### **ELEMENTS OF ENVIRONMENTAL SCIENCE AND ENGINEERING**

This book is for anyone who works with boilers: utilities managers, power plant managers, control systems engineers, maintenance technicians or operators. The information deals primarily with water tube boilers with Induced Draft (ID) and Forced Draft (FD) fan(s) or boilers containing only FD fans. It can also apply to any fuel-fired steam generator. Other books on boiler control have been published; however, they do not cover engineering details on control systems and the setup of the various control functions. Boiler Control Systems Engineering provides specific examples of boiler control including configuration and tuning, valve sizing, and transmitter specifications. This expanded and updated second edition includes drum level compensation equations, additional P&ID drawings and examples of permissive startup and tripping logic for gas, oil, and coal fired boilers. It also

covers different control schemes for furnace draft control. NFPA 85 Code 2007 control system requirements are included, with illustrated examples of coal fired boilers, as well as information on the latest ISA-77 series of standards.

### **Water pollution from agriculture**

### **Environmental Science And Engineering (anna University)**

Adopting a lucid approach, the book aims to develop an appreciation of the seriousness of the environmental crisis at the local and global levels. The text discusses the major environmental problems we face today: global warming, overexploitation of natural resources, degraded land, disappearing forests, endangered species, rising pollution, growing population, and dangerous toxins, among others. The book illustrates various problems, solutions, successes, and failures with numerous Indian and global examples. Written in a student-friendly manner, the text is enriched with a number of photographs and illustrations.

### **Engineering Chemistry**

This book brings together, and integrates the three principal areas of

environmental engineering water, air, and solid waste management. It introduces a unique approach by emphasizing the relationship between the principles observed in natural purification processes and those employed in engineered systems. First, the physical, chemical, mathematical, and biological principles that define, measure and quantify environmental quality are described. Next, the processes by which nature assimilates waste material are discussed and the natural purification processes that form the basis of engineered systems are detailed. Finally, the engineering principles and practices involved in the design and operation of environmental engineering works are covered at length. Written in a lucid style and offering abundant illustrations and problems, the book provides a treatment of environmental engineering that can be understood by a wide range of readers.

### **Basic Electrical Installation Work**

Take tiny steps to enter the big world of data science through this interesting guide About This Book Learn the fundamentals of machine learning and build your own intelligent applications Master the art of building your own machine learning systems with this example-based practical guide Work with important classification and regression algorithms and other machine learning techniques Who This Book Is For This book is for anyone interested in entering the data science stream with machine learning. Basic familiarity with Python is assumed. What You Will Learn Exploit the power of Python to handle data extraction, manipulation, and

exploration techniques Use Python to visualize data spread across multiple dimensions and extract useful features Dive deep into the world of analytics to predict situations correctly Implement machine learning classification and regression algorithms from scratch in Python Be amazed to see the algorithms in action Evaluate the performance of a machine learning model and optimize it Solve interesting real-world problems using machine learning and Python as the journey unfolds In Detail Data science and machine learning are some of the top buzzwords in the technical world today. A resurging interest in machine learning is due to the same factors that have made data mining and Bayesian analysis more popular than ever. This book is your entry point to machine learning. This book starts with an introduction to machine learning and the Python language and shows you how to complete the setup. Moving ahead, you will learn all the important concepts such as, exploratory data analysis, data preprocessing, feature extraction, data visualization and clustering, classification, regression and model performance evaluation. With the help of various projects included, you will find it intriguing to acquire the mechanics of several important machine learning algorithms - they are no more obscure as they thought. Also, you will be guided step by step to build your own models from scratch. Toward the end, you will gather a broad picture of the machine learning ecosystem and best practices of applying machine learning techniques. Through this book, you will learn to tackle data-driven problems and implement your solutions with the powerful yet simple language, Python. Interesting and easy-to-follow examples, to name some, news topic classification,

spam email detection, online ad click-through prediction, stock prices forecast, will keep you glued till you reach your goal. Style and approach This book is an enticing journey that starts from the very basics and gradually picks up pace as the story unfolds. Each concept is first succinctly defined in the larger context of things, followed by a detailed explanation of their application. Every concept is explained with the help of a project that solves a real-world problem, and involves hands-on work—giving you a deep insight into the world of machine learning. With simple yet rich language—Python—you will understand and be able to implement the examples with ease.

### **Green Sustainable Process for Chemical and Environmental Engineering and Science**

Completely covers the diploma syllabus of various State Boards of Technical Education and AMIE Section □ B for the course in Environmental Engineering.

### **Environmental Pollution and Control**

Complex environmental problems are often reduced to an inappropriate level of simplicity. While this book does not seek to present a comprehensive scientific and technical coverage of all aspects of the subject matter, it makes the issues, ideas,

and language of environmental engineering accessible and understandable to the nontechnical reader. Improvements introduced in the fourth edition include a complete rewrite of the chapters dealing with risk assessment and ethics, the introduction of new theories of radiation damage, inclusion of environmental disasters like Chernobyl and Bhopal, and general updating of all the content, specifically that on radioactive waste. Since this book was first published in 1972, several generations of students have become environmentally aware and conscious of their responsibilities to the planet earth. Many of these environmental pioneers are now teaching in colleges and universities, and have in their classes students with the same sense of dedication and resolve that they themselves brought to the discipline. In those days, it was sometimes difficult to explain what indeed environmental science or engineering was, and why the development of these fields was so important to the future of the earth and to human civilization. Today there is no question that the human species has the capability of destroying its collective home, and that we have indeed taken major steps toward doing exactly that. And yet, while, a lot has changed in a generation, much has not. We still have air pollution; we still contaminate our water supplies; we still dispose of hazardous materials improperly; we still destroy natural habitats as if no other species mattered. And worst of all, we still continue to populate the earth at an alarming rate. There is still a need for this book, and for the college and university courses that use it as a text, and perhaps this need is more acute now than it was several decades ago. Although the battle to preserve the environment is still

raging, some of the rules have changed. We now must take into account risk to humans, and be able to manipulate concepts of risk management. With increasing population, and fewer alternatives to waste disposal, this problem is intensified. Environmental laws have changed, and will no doubt continue to evolve. Attitudes toward the environment are often couched in what has become known as the environmental ethic. Finally, the environmental movement has become powerful politically, and environmentalism can be made to serve a political agenda. In revising this book, we have attempted to incorporate the evolving nature of environmental sciences and engineering by adding chapters as necessary and eliminating material that is less germane to today's students. We have nevertheless maintained the essential feature of this book -- to package the more important aspects of environmental engineering science and technology in an organized manner and present this mainly technical material to a nonengineering audience. This book has been used as a text in courses which require no prerequisites, although a high school knowledge of chemistry is important. A knowledge of college level algebra is also useful, but calculus is not required for the understanding of the technical and scientific concepts. We do not intend for this book to be scientifically and technically complete. In fact, many complex environmental problems have been simplified to the threshold of pain for many engineers and scientists. Our objective, however, is not to impress nontechnical students with the rigors and complexities of pollution control technology but rather to make some of the language and ideas of environmental engineering and science

more understandable.

## **Textbook of Environmental Studies for Undergraduate Courses**

### **ENVIRONMENTAL STUDIES 2E**

Appropriate for undergraduate engineering and science courses in Environmental Engineering. Balanced coverage of all the major categories of environmental pollution, with coverage of current topics such as climate change and ozone depletion, risk assessment, indoor air quality, source-reduction and recycling, and groundwater contamination.

### **Environmental Science Demystified**

Environmental Science And Engineering Pertain To A Systematic Analysis Of The Natural And Man-Made World Encompassing Various Scientific, Economic, Social And Ethical Aspects. Human Impacts Leading To Large-Scale Degradation Of The Environment Have Aroused Global Concern On Environmental Issues In The Recent Years. The Apex Court Has Hence, Issued Directive To Impart Environmental Literacy To All. In This Book The Fundamental Concepts Of Environmental Science

And Engineering Have Been Introduced And Analyzed In A Simple Manner Strictly As Per The Anna University IInd And IIIRD Semester Syllabus. Besides The Undergraduate Students Of All Disciplines The Book Will Also Be Useful For Those Appearing In Various Competitive Exams Since Environmental Issues Now Find A Focus In Most Of Such Examinations. The Contents Of The Book Will Be Of Interest To All Educationists, Planners And Policy Makers. Key Features Of The Book Include A Simple And Holistic Approach With Illustrations, Tables And Specific Case Studies Mainly In The Indian Context. The Basic Terminologies Have Been Defined In The Text While Introducing The Topics And Some Useful Terms Mentioned In The Text Have Been Explained In The Glossary For An Easy Grasp By Students Of All Disciplines.

### **Environmental Studies**

Appeals to a Wide Audience Fueled by more than 30 years of intensive research and debate on the impact of electromagnetic fields (EMF) on everyday life—starting with residential exposure to magnetic fields and the development of childhood cancer in the 70s and continuing with risk of exposure via wireless communications in present day—Epidemiology of Electromagnetic Fields addresses ongoing public and scientific controversy surrounding the possible effects of electromagnetic fields (EMF) to human health, and provides an in-depth introduction into the methodology of environmental epidemiology that is

appropriate for all levels, from student to practicing engineer. Exposure to EMF Focusing primarily on EMF examples, the author presents the general principles and methodological concepts in environmental epidemiology. Topics of importance in the first part of the book include epidemiological study designs, exposure assessment methods and implications for the study results, as well as selection bias, confounding, and other biases including reverse causality and ecological fallacy. The second part of the book covers environmental epidemiological methods in detail and outlines key examples such as childhood leukemia and exposure to extremely low-frequency magnetic fields, as well as examples that look at brain tumors and mobile phone use. The book also offers a detailed discussion on the range of EMF sources and exposures. In addition, it highlights the sophisticated assessment methods required to address exposure situations, and provides a historical perspective. The third part of the book examines how EMF exposure from the use of wireless communication techniques and other challenges affect risk assessment today and also details future developments. Explores environmental epidemiological methods in detail, while critically discussing epidemiological findings Provides a state-of-the-art overview of the scientific evidence of the health effects of EMF Considers how novelty, the steep increase of radiofrequency (RF) EMF exposure from wireless communications, and other challenges affect risk assessment today Epidemiology of Electromagnetic Fields provides a thorough overview of the subject, and evaluates the scientific evidence surrounding the possible health effects of EMFs.

## **A Textbook of Strength of Materials**

This Book Presents A Practical-Oriented, Sound, Modularized Coverage Of Fundamental Topics Of Basic Electrical Engineering, Network Analysis & Network Theorems, Electromagnetism & Magnetic Circuit, Alternating Current & Voltages, Electrical Measurement & Measuring Instrument And Electric Machines. Salient Features: # Clarification Of Basic Concepts # Several Solved Examples With Detailed Explanation # At The End Of Chapters, There Are Descriptive And Numerical Unsolved Problems # Written In Very Simple Language And Suitable For Self-Study # Step-By-Step Procedures Given For Solving Numerical

## **Economic Affairs**

This book covers the complete syllabi prescribed for undergraduate courses in electrical, electronics, mechanical and instrumentation engineering offered by various Indian universities. The objective of this text is to provide thorough knowledge in the emerging field of special electrical machines. It discusses the stepper motor, switched reluctance motor, permanent magnet dc and ac motors, brushless dc motors, single phase special electric motors, servomotors, linear electric machines and permanent magnet axial flux machines. Key Features • Chapter on permanent magnet axial flux machines (not available in other Indian

authors' books) • Numerous worked-out examples • Based on classroom tested materials • Simplified mathematical analysis Besides undergraduate students, the book will also be useful to the postgraduate students specialising in drives and control, power electronics, control systems and mechatronics.

### **Highway Engineering**

In this book, the authors address the concepts and terminology that are needed to apply advanced control techniques in the process industry. The book is written for the process or control engineer that is familiar with traditional control but has little or no experience in designing, installing, commissioning and maintaining advanced control applications. Each chapter of the book is structured to allow a person to quickly understand the technology and how it is applied. Application examples are used to show what is required to address an application. Also, a section of each chapter is dedicated to a more in-depth discussion of the technology for the reader that is interested in understanding the mathematical basis for the technology. A workshop is provided at the end of each chapter that explores the technology. The reader may view the workshop solution by going to the web site that accompanies the book. The book provides comprehensive coverage of the major advanced control techniques that are most commonly used in the process industry. This includes tools for monitoring control system performance, on-demand and adaptive tuning techniques, model predictive control, LP optimization, data

analytics for batch and continuous processes, fuzzy logic control, neural networks and advancements in PID to use with wireless measurements. Since many readers may work with an existing DCS that does not support advanced control, a chapter of the book is dedicated to tools and techniques that the authors have found useful in integrating advanced control tools into an existing control system. Also, one chapter of the book addresses how dynamic process simulations may be easily created in a DCS to support checkout and operator training on the use of advanced control.

### **Textbook Of Engineering Chemistry**

For the past 25 years, Joe Goldbloom and I have conducted a running debate over whether specifications writers engage in the unlawful practice of law. Joe's position is that lawyers have no business writing specifications, that being the designer's province. Having been given the honor to write this foreword, I have the opportunity for the last word, at least for now. Joe Goldbloom and I first met in 1964, while serving together on the ASCE Committee on Contract Administration. Joe became my teacher, mentor, and friend. Underlying our good natured debate was the serious issue of the technical qualifications required of a specifications writer. As a matter of fact, specifications writing traditionally has fallen in a crack between the two professions. Specifications writing typically is neither taught in engineering school nor in law school. Engineers are taught how to design; lawyers

are taught how to draft contracts. Specifications writing requires mastery of the technical elements of design as well as the skills of contract drafting. Specifications writing is neither glamorous nor sexy; it is often viewed as a necessary evil of the designer's job.

### **Alternative Energy Systems and Applications**

Any good text book, particularly that in the fast changing fields such as engineering & technology, is not only expected to cater to the current curricular requirements of various institutions but also should provide a glimpse towards the latest developments in the concerned subject and the relevant disciplines. It should guide the periodic review and updating of the curriculum.

### **Advanced Control Foundation**

The comprehensive guide to engineering alternative and renewable energy systems and applications—updated for the latest trends and technologies. This book was designed to help engineers develop new solutions for the current energy economy. To that end it provides technical discussions, along with numerous real-world examples of virtually all existing alternative energy sources, applications, systems and system components. All chapters focus on first-order engineering

calculations, and consider alternative uses of existing and renewable energy resources. Just as important, the author describes how to apply these concepts to the development of new energy solutions. Since the publication of the critically acclaimed first edition of this book, the alternative, renewable and sustainable energy industries have witnessed significant evolution and growth. Hydraulic fracturing, fossil fuel reserve increases, the increasing popularity of hybrid and all-electric vehicles, and the decreasing cost of solar power already have had a significant impact on energy usage patterns worldwide. Updated and revised to reflect those and other key developments, this new edition features expanded coverage of topics covered in the first edition, as well as entirely new chapters on hydraulic fracturing and fossil fuels, hybrid and all-electric vehicles, and more. Begins with a fascinating look at the changing face of global energy economy Features chapters devoted to virtually all sources of alternative energy and energy systems Offers technical discussions of hydropower, wind, passive solar and solar-thermal, photovoltaics, fuel cells, CHP systems, geothermal, ocean energy, biomass, and nuclear Contains updated chapter review questions, homework problems, and a thoroughly revised solutions manual, available on the companion website While *Alternative Energy Systems and Applications, Second Edition* is an ideal textbook/reference for advanced undergraduate and graduate level engineering courses in energy-related subjects, it is also an indispensable professional resource for engineers and technicians working in areas related to the development of alternative/renewable energy systems.

## **Matrix Analysis of Structures**

Green Sustainable Process for Chemical and Environmental Engineering and Science: Solvents for the Pharmaceutical Industry aims at providing a detailed overview of applications of green solvents in pharmaceutical industries. It also focuses on providing a detailed literature survey on the green solvents for pharmaceutical analysis, drug design, synthesis, and production, etc. It summarizes the applications of various green solvents such as water, cyrene, vegetable oils, ionic liquids, ethyl lactate, eutectic solvents, and glycerol in contrast to toxic solvents. This book provides an overview of the use of green solvents for the sustainable and environmentally friendly development of synthetic methodologies for biomedical and pharmaceutical industries. Up-to-date developments towards the development of solvents for pharmaceutical industry Includes latest advances in pharmaceutical analysis and synthesis using green solvents Outlines eco-friendly green solvents for medicinal applications State-of-the-art overview on the exploration of green solvents for pharmaceutical industries

## **High Voltage Engineering**

This book covers the basics of nanotechnology and provides a solid understanding of the subject. Starting from a brush-up of the basic quantum mechanics and

materials science, the book helps to gradually build up understanding of the various effects of quantum confinement, optical-electronic properties of nanoparticles and major nanomaterials. The book covers the various physical, chemical and hybrid methods of nanomaterial synthesis and nanofabrication as well as advanced characterization techniques. It includes chapters on the various applications of nanoscience and nanotechnology. It is written in a simple form, making it useful for students of physical and material sciences.

### **Environmental Science**

### **Introduction to Environmental Engineering and Science**

Designed as a text for all undergraduate students of engineering for their core course in Environmental Science and Engineering and for elective courses in environmental health engineering and pollution and control engineering for students of civil engineering, this comprehensive text, now in its Second Edition provides an in-depth analysis of the fundamental concepts. It also introduces the reader to different niche areas of environmental science and engineering. The book covers a wide array of topics, such as natural resources, disaster management, biodiversity, and various forms of pollution, viz. water pollution, air

pollution, soil pollution, noise pollution, thermal pollution, and marine pollution, as well as environmental impact assessment and environmental protection. This edition introduces a new chapter on Environment and Human Health. **KEY FEATURES :** Gives in-depth yet lucid analysis of topics, making the book user-friendly. Covers important topics, which are adequately supported by illustrative diagrams. Provides case studies to explore real-life problems. Supplies review questions at the end of each chapter to drill the students in self-study.

### **Boiler Control Systems Engineering**

The first edition of this comprehensive work quickly filled the need for an in-depth handbook on concrete construction engineering and technology. Living up to the standard set by its bestselling predecessor, this second edition of the Concrete Construction Engineering Handbook covers the entire range of issues pertaining to the construction

### **Air Pollution Control Engineering**

This is the perfect self-teaching guide for anyone interested in basic earth composition and development of the ever-changing nature of our planet. The author covers a wide array of topics including: atmosphere, water, global warming,

atmospheric differentiation, geomorphology, glaciers, erosion, carbon dating, acid rain, and much more. It includes real-world examples, environmental notes, tips, scientific news, and international trends.

### **ENERGY**

### **SPECIAL ELECTRICAL MACHINES**

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