Sivasankar Engineering Chemistry

Microbiological Research In Agroecosystem ManagementEngineering ChemistryEngineering ChemistryFOOD PROCESSING AND PRESERVATIONCatalysts in Petroleum Refining 1989Proceedings of the 8th International Congress on Environmental Geotechnics Volume 1The Manufacture of Nitric Acid by the Oxidation of AmmoniaChemistry in Engineering and TechnologyPetroleum Refinery Process EconomicsHandbook on Applications of UltrasoundBulletin of the Chemical Society of JapanIndian Journal of ChemistryTextbook of Engineering ChemistryTextbook Of Engineering ChemistryInstrumental Methods of AnalysisChemistry for Pharmacy StudentsBIOSPERATIONSIntroduction to Process Engineering and DesignHandbook of Downstream ProcessingChitosan Based Biomaterials Volume 2ENGINEERING CHEMISTRYChemical Engineering ProgressIndian National BibliographyChemistry for EngineersSeparation Process Principles with Applications Using Process Simulators, 4th EditionPhysics of Petroleum ReservoirsGaseous Carbon Waste Streams UtilizationNumerical ChemistrySea Bioseparations Downstream Processing for BiotechnologyIndian Journal of Chemical TechnologyPractical SonochemistryGreen Chemistry for Dyes Removal from Waste WaterEngineering ChemistryProcess and Chemical EngineeringEngineering ChemistryMicrobial Fuel Cell Technology for BioelectricityIndustrial Research Laboratories of the United StatesElectro-Fenton ProcessEngineering ChemistryProbability and Statistics (GTU)

Microbiological Research In Agroecosystem Management

The last two decades have seen a phenomenal growth of the field of genetic or biochemical engineering and have witnessed the development and ultimately marketing of a variety of products-typically through the manipulation and growth of different types of microorganisms, followed by the recovery and purification of the associated products. The engineers and biotechnologists who are involved in the full-scale process design of such facilities must be familiar with the variety of unit operations and equipment and the applicable regulatory requirements. This book describes current commercial practice and will be useful to those engineers working in this field in the design, construction and operation of pharmaceutical and biotechnology plants. It will be of help to the chemical or pharmaceutical engineer who is developing a plant design and who faces issues such as: Should the process be batch or continuous or a combination of batch and continuous? How should the optimum process design be developed? Should one employ a new revolutionary separation which could be potentially difficult to validate or use accepted technology which involves less risk? Should the process be run with ingredients formulated from water for injection, deionized water, or even filtered tap water? Should any of the separations be run in cold rooms or in glycol jacketed lines to minimize microbial growth where sterilization is not possible? Should the process equipment and lines be designed to be sterilized in-place, cleaned-in-place, or should every piece be broken down, cleaned and autoclaved after every turn?

Engineering Chemistry

Engineering Chemistry

FOOD PROCESSING AND PRESERVATION

This systematically organized and well-balanced book compresses within the covers of a single volume the theoretical principles and techniques involved in bio-separations, also called downstream processing. These techniques are derived from a range of subjects, for example, physical chemistry, analytical chemistry, bio-chemistry, biological science and chemical engineering. Organized in its 15 chapters, the text covers in the first few chapters topics related to chemical engineering unit operations such as filtration, centrifugation, adsorption, extraction and membrane separation as applied to bioseparations. The use of chromatography as practiced at laboratory as well as industrial scale operation and related techniques such as gel filtration, affinity and pseudoaffinity chromatography, ion-exchange chromatography, electrophoresis and related methods have been discussed. The important applications of these techniques have also been highlighted.

Catalysts in Petroleum Refining 1989

This book has been written to provide a comprehensive overview of the fundamental concepts of chemistry applied across all branches of engineering. It gives a synopsis of a broad range of subject areas, from the theory of thermodynamics to the practical function of aerosols, from solid state chemistry to the causes of the greenhouse effect. Consisting of 13 chapters, “Engineering Chemistry” contains an appendix of multiple choice questions and answers to enhance the pedagogical strength of the text. It also provides numerical problems which complement and assist in the understanding of its mathematical approach. This book can be used as a textbook on a diverse range of engineering courses, or alternatively it will serve as an excellent general reference resource for any academic and professional engineering library.

Proceedings of the 8th International Congress on Environmental Geotechnics Volume 1

The book provides comprehensive coverage of the processing and preservation aspects of food science that include chemical, microbiological and technological processes on the one hand, and assessment of food quality and safety, new and modified foods by fermentation, food-boene diseases and food spoilage on the other. The preservation operations involving the use of high and low temperatures and radiation have also been discussed in detail. Intended as a textbook for undergraduate students of science and engineering, this study would also be of great help to postgraduate students offering courses in food science, and to professionals as well as academicians.

The Manufacture of Nitric Acid by the Oxidation of Ammonia

Chitosan Based Biomaterials: Tissue Engineering and Therapeutics, Volume 2,

provides the latest information on chitosan, a natural polymer derived from the marine material chitin. Chitosan displays unique properties, most notably biocompatibility and biodegradability. It can also be easily tuned to modify its structure or properties, making chitosan an excellent candidate as a biomaterial. Consequently, chitosan is being developed for many biomedical functions, ranging from tissue engineering and implant coatings to drug and gene delivery. This book provides readers with a full coverage of the applications of chitosan-based biomaterials. Presents specific focus on tissue engineering and therapeutics Provides comprehensive treatment of all biomaterial applications of chitosan Contains contributions by leading researchers with extensive experience in the material

Chemistry in Engineering and Technology

Separation Process Principles with Applications Using Process Simulator, 4th Edition is the most comprehensive and up-to-date treatment of the major separation operations in the chemical industry. The 4th edition focuses on using process simulators to design separation processes and prepares readers for professional practice. Completely rewritten to enhance clarity, this fourth edition provides engineers with a strong understanding of the field. With the help of an additional co-author, the text presents new information on bioseparations throughout the chapters. A new chapter on mechanical separations covers settling, filtration and centrifugation including mechanical separations in biotechnology and cell lysis. Boxes help highlight fundamental equations. Numerous new examples and exercises are integrated throughout as well.

Petroleum Refinery Process Economics

This book is designed for the 3rd semester gtu engineering students pursuing the probability and statistics (code 3130006). The crisp but complete explanation of topics will help the students easily understand the basic concepts. The tutorial approach (I.E. Teach by example) followed in the text will enable students develop a logical perspective to solving problems.

Handbook on Applications of Ultrasound

Maples presents an organized look at yield data and properties of products from refinery processes, how to use this information in performing various process economics studies, and discusses operating and capital costs for economic evaluation of both single processes and complete refineries. Yield correlations are presented for all of the important commercially-established petroleum refinery processes, each accompanied by operating requirements and capital cost of a typical unit. Here the user has all of the information required to perform a preliminary economic evaluation. For each process yield correlation a simplified process flow diagram and brief process description is given. Contents: Correlation methodology Crude oils, hydrocarbons, and refinery products Refinary processing overview Energy resources and transportation fuels The environment and the refinery Crude oil and residual oil processing Solvent deasphalting Visbreaking and aquaconversion Delayed coking Fluid coking/flexicoking Heavy distillate processing

Fluid catalylic and heavy oil cracking Hydrocracking Hydrotreating Light distillate processing Naphtha desulfurization Catalytic reforming Light hydrocarbon processing Isomerization Alkylation Catalytic polymerization and dehydration Oxygenates Treating and other auxiliary processes Aromatics extraction Hydrogen manufacture Sour water stripping Sweetening Acid gas removal Sulfur recovery Tail gas cleanup Water treatment and waste disposal Blending Process economics Economics.

Bulletin of the Chemical Society of Japan

Indian Journal of Chemistry

Textbook of Engineering Chemistry is a comprehensive book which blends basic topics in chemistry with applied chemistry. It is important for Engineers to have a good understanding of subject as they look forward to designing and developing newer materials with requisite properties and structures that are eco-friendly, economical and long lasting. New improved styling of contents. Applied topics are proceeded by corresponding basic chemistry Several numerical problems, multiple choice questions and short and essay type questions are included New chapters on chemical aspects of Biotechnology and Advanced Materials are added.

Textbook of Engineering Chemistry

These proceedings reflect the important role of catalysis in petroleum refining and the effects of factors such as environmental legislation on the industry. They also show the emergence of significant scientific expertise in the Middle East - the cradle of the oil industry. Participants from all over the world took part in the meeting and the book contains a well-balanced selection of articles from both academia and industry. Current trends in the oil industry focused attention mainly on heavy end hydrotreating, but other processes also gained their share of attention. An invaluable feature of the meeting was the two panel discussions where participants took the opportunity to obtain advance on many real and immediate problems.

Textbook Of Engineering Chemistry

Instrumental Methods of Analysis

Engineering Chemistry is an interdisciplinary subject offered to undergraduate Engineering students. This book introduces the fundamental concepts in a simple and concise manner and highlights the role of chemistry in the field of engineering. It includes a large number of end-of-chapter exercises that test the student's understanding besides being useful from the examination point of view.

Chemistry for Pharmacy Students

Written in lucid language, the book offers a detailed treatment of fundamental

concepts of chemistry and its engineering applications.

BIOSPERATIONS

Agroecosystem is an ideal dynamic functional system with a set of chemical and biological interaction taking place in plant surface either below or above the ground levels. These levels of interaction activities fundamentally with microorganism-plant-soil systems are extended upto the level of entire agricultural economy. Greatly simplified, the agroecosystems control the various range of energy flux, resources exchange, organic and inorganic nutrient budgets and population dynamics. The main aim of this edited volume is to provide a broad spectrum of agroecosystems structure, function and maintenance involved in microbial research. This book consists of 20 full length research articles focusing on the emerging problems in the field and the positive findings are identified on key areas of research such as biodiversity, ecosystem service, environmental cleaning in agroecology, etc. These articles are arranged progressively linking themselves thematically with photographs, figures and tables. Focused field articles are included which prove a valuable contribution to the field of agroecosystem management by microbial facilitations. The editor hopes that these articles would prompt the budding scholars to further their research which in turn would certainly help the agriculturists.

Introduction to Process Engineering and Design

Handbook of Downstream Processing

Chitosan Based Biomaterials Volume 2

This book gathers selected papers presented at the 8th International Congress on Environmental Geotechnics (ICEG), held on October 28 - November 1, 2018 in Hangzhou, China. The theme of the congress is “Towards a Sustainable Geoenvironment”, which means meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Under this theme, the congress covers a broad range of topics and provides an excellent opportunity for academics, engineers, scientists, government officials, regulators, and planners to present, discuss and exchange notes on the latest advances and developments in the research and application of environmental geotechnics.

ENGINEERING CHEMISTRY

This book introduces in detail the physical and chemical phenomena and processes during petroleum production. It covers the properties of reservoir rocks and fluids, the related methods of determining these properties, the phase behavior of hydrocarbon mixtures, the microscopic mechanism of fluids flowing through reservoir rocks, and the primary theories and methods of enhancing oil recovery. It also involves the up-to-date progress in these areas. It can be used as a reference

by researchers and engineers in petroleum engineering and a textbook for students majoring in the area related with petroleum exploitation.

Chemical Engineering Progress

Indian National Bibliography

Instrumental Methods of Analysis is a textbook designed to introduce various analytical and chemical methods, their underlying principles and applications to the undergraduate engineering students of biotechnology and chemical engineering. This book would also be of interest to students who pursue their B. Sc / M. Sc degree programs in biotechnology and chemistry.

Chemistry for Engineers

"This book has succeeded in covering the basic chemistryessentials required by the pharmaceutical science student…the undergraduate reader, be they chemist, biologist or pharmacistwill find this an interesting and valuable read."–Journal of Chemical Biology, May 2009 Chemistry for Pharmacy Students is a student-friendlyintroduction to the key areas of chemistry required by all pharmacyand pharmaceutical science students. The book provides acomprehensive overview of the various areas of general, organic andnatural products chemistry (in relation to drug molecules). Clearly structured to enhance student understanding, the book isdivided into six clear sections. The book opens with an overview ofgeneral aspects of chemistry and their importance to modern life,with particular emphasis on medicinal applications. The text thenmoves on to a discussion of the concepts of atomic structure andbonding and the fundamentals of stereochemistry and theirsignificance to pharmacy- in relation to drug action and toxicity.Various aspects of aliphatic, aromatic and heterocyclic chemistryand their pharmaceutical importance are then covered with finalchapters looking at organic reactions and their applications todrug discovery and development and natural products chemistry. accessible introduction to the key areas of chemistry requiredfor all pharmacy degree courses student-friendly and written at a level suitable fornon-chemistry students includes learning objectives at the beginning of eachchapter focuses on the physical properties and actions of drugmolecules

Separation Process Principles with Applications Using Process Simulators, 4th Edition

Physics of Petroleum Reservoirs

Introduction to Process Engineering and Design covers basic principles to design alternate systems, develop process diagrams and select the best alternative to be adopted. Multiple industrial examples provided in the book will enhance the skills of the readers for innovative designs. Salient Features: • Focuses on process design of chemical plants and equipment • State-of-the-art technique of supercritical extraction, reactive distillation, short path distillation discussed •

Process Flow-charts are provided throughout the book

Gaseous Carbon Waste Streams Utilization

The use of synthetic chemical dyes in various industrialprocesses, including paper and pulp manufacturing, plastics, dyeingof cloth, leather treatment and printing, has increasedconsiderably over the last few years, resulting in the release ofdye-containing industrial effluents into the soil and aquatic ecosystems. The textile industry generates high-pollutingwastewaters and their treatment is a very serious problem due tohigh total dissolved solids (TDS), presence of toxic heavy metals,and the non-biodegradable nature of the dyestuffs in theeffluent. The chapters in this book provide an overview of the problem andits solution from different angles. These problems and solutionsare presented in a genuinely holistic way by world-renownedresearchers. Discussed are various promising techniques to removedyes, including the use of nanotechnology, ultrasound, microwave,catalysts, biosorption, enzymatic treatments, advanced oxidationprocesses, etc., all of which are “green.” Green Chemistry for Dyes Removal from Wastewatercomprehensively discusses: Different types of dyes, their working and methodologies andvarious physical, chemical and biological treatment methodsemployed Application of advanced oxidation processes (AOPs) in dyeremoval whereby highly reactive hydroxyl radicals are generatedchemically, photochemically and/or by radiolytic/ sonolytic means.The potential of ultrasound as an AOP is discussed as well. Nanotechnology in the treatment of dye removal types ofadsorbents for removal of toxic pollutants from aquaticsystems Photocatalytic oxidation process for dye degradation under bothUV and visible light, application of solar light and solarphotoreactor in dye degradation

Numerical Chemistry

Ultrasonic irradiation and the associated sonochemical and sonophysical effects are complementary techniques for driving more efficient chemical reactions and yields. Sonochemistry—the chemical effects and applications of ultrasonic waves—and sustainable (green) chemistry both aim to use less hazardous chemicals and solvents, reduce energy consumption, and increase product selectivity. A comprehensive collection of knowledge, Handbook on Applications of Ultrasound covers the most relevant aspects linked to and linking green chemistry practices to environmental sustainability through the uses and applications of ultrasound-mediated and ultrasound-assisted biological, biochemical, chemical, and physical processes. Chapters are presented in the areas of: Medical applications Drug and gene delivery Nanotechnology Food technology Synthetic applications and organic chemistry Anaerobic digestion Environmental contaminants degradation Polymer chemistry Industrial syntheses and processes Reactor design Electrochemical systems Combined ultrasound−microwave technologies While the concepts of sonochemistry have been known for more than 80 years, in-depth understanding of this phenomenon continues to evolve. Through a review of the current status of chemical and physical science and engineering in developing more environmentally friendly and less toxic synthetic processes, this book highlights many existing applications and the enormous potential of ultrasound technology to upgrade present industrial, agricultural, and environmental processes.

Sea Bioseparations Downstream Processing for Biotechnology

In the quest to mitigate the buildup of greenhouse gases in Earth's atmosphere, researchers and policymakers have increasingly turned their attention to techniques for capturing greenhouse gases such as carbon dioxide and methane, either from the locations where they are emitted or directly from the atmosphere. Once captured, these gases can be stored or put to use. While both carbon storage and carbon utilization have costs, utilization offers the opportunity to recover some of the cost and even generate economic value. While current carbon utilization projects operate at a relatively small scale, some estimates suggest the market for waste carbon-derived products could grow to hundreds of billions of dollars within a few decades, utilizing several thousand teragrams of waste carbon gases per year. Gaseous Carbon Waste Streams Utilization: Status and Research Needs assesses research and development needs relevant to understanding and improving the commercial viability of waste carbon utilization technologies and defines a research agenda to address key challenges. The report is intended to help inform decision making surrounding the development and deployment of waste carbon utilization technologies under a variety of circumstances, whether motivated by a goal to improve processes for making carbon-based products, to generate revenue, or to achieve environmental goals.

Indian Journal of Chemical Technology

Practical Sonochemistry

Market_Desc: Primary Market· RGPV (B.E.- 101 Engineering Chemistry)· VTU (10CHE12/ 10CHE 22 Engineering Chemistry)· BPUT (BSCC 2101 Chemistry)· UPTU (EAS-102/202 Engineering Chemistry)· WBUT (Chemistry -1 (Gr A and B))· JNTU (BS Engineering Chemistry)· Anna (CY2111 Engineering Chemistry-I; CY2161 Engineering Chemistry-II)· PTU (CH-101 Engineering Chemistry)· RTU ([106] and [206] Engineering Chemistry-I and II)· GTU (Chemistry)· CSVTU (300112 Applied Chemistry)Secondary Market· Higher semesters of Chemical and Biotechnology courses.· Students preparing for GATE and TANCET examinations. Special Features: · Accordant with the syllabi of various technical universities.· Structured to support the objective of Engineering Chemistry course for undergraduates. · Excellent correlation of concepts with their applications.· Systematic chapter organization based on logical progression of concepts.ü Builds the fundamentals of the subject in the initial chaptersü Comprehensively covers the applied topics in the field of engineering in the later chapters.ü Coherent chapter layout withü Clearly defined learning objectives.ü Introduction of topics, their precise and adequate explanation.ü Ample illustrations and diagrams.ü Solved examples at the end of relevant subtopics to strengthen the concepts.· Multiple-author model with content sourced from experts in respective areas of expertise (Inorganic, Organic, Physical, Analytical and Applied Chemistry) across geographies.· Comprehensive question bank at the end of each chapter containingü Objective type questions (classified into multiple-choice questions and fill in the blanks).ü Review questions (categorized into short-answer and long-answer type questions).ü Numerical problems.· Extensively reviewed content with single or multiple reviews by

academicians of various technical universities for each chapter to generate error-free and accurate content. About The Book: The Engineering Chemistry course for undergraduate students is designed to strengthen the fundamentals of chemistry and then build an interface of theoretical concepts with their industrial/engineering applications. This book is structured keeping in view the objective of the course and is intended as a textbook for first year B.Tech/B.E. students of all engineering disciplines. The book aims to impart in-depth knowledge of the subject and highlight the role of chemistry in the field of engineering. The lucid explanation of the topics will help students understand the fundamental concepts and apply them to design engineering materials and solve problems related to them. An attempt has been made to logically correlate the topic with its application. The extension of fundamentals of electrochemistry to energy storage devices such as commercial batteries and fuel cells is one such example. The layout for a topic is designed after detailed study and analysis of the syllabi of various technical universities. The chapter for each topic begins with clearly defined learning objectives, followed by introduction of subtopics, their precise and adequate explanation supported with ample illustrations and diagrams. Solved examples are given at the end of relevant subtopics to strengthen the concepts. The chapters conclude with a set of review and practice questions.

Green Chemistry for Dyes Removal from Waste Water

Engineering Chemistry

Process and Chemical Engineering

The uses of ultrasound in chemistry are examined from a laboratory-oriented viewpoint in this text. The author analyzes the types of ultrasonic equipment available and describes the correct assembly of laboratory apparatus for particular tasks.

Engineering Chemistry

Microbial Fuel Cell Technology for Bioelectricity

Industrial Research Laboratories of the United States

Electro-Fenton Process

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 requirments of various institutions but also should provied a glimplse towards the latest developments in the concerned subject and the relevant disciplines.It should guide the periodic review and updating of the curriculum.

Engineering Chemistry

In view of the increased consumption of energy due to the proliferation of electronic devices, this book addresses the trends, similarities, differences and advances in fuel cells of both chemical and biological composition. Fundamentals of microbial fuel cells are described, accompanied by details surrounding their uses and limitations. Chapters on electricigens, microbial group investigations and performance, Rumen Fluid microbes and state-of-the-art advances in microbial fuel cell technology are discussed. The book elaborates upon analytical techniques used for biofilm characterization. It also includes chapters on MFC models that include plant-based MFCs, Algal/Fungi MFCs, MDCs and MFCs using animal waste. A critical review on the performance of MFC technology in field trials is offered in an exclusively dedicated section. By addressing one of the most promising sources for clean and renewable energy, this book fills a pressing need to understand a possible solution for meeting the energy demands in our highly advanced technical world.

Probability and Statistics (GTU)

This volume discusses the theoretical fundamentals and potential applications of the original electro-Fenton (EF) process and its most innovative and promising versions, all of which are classified as electrochemical advanced oxidation processes. It consists of 15 chapters that review the latest advances and trends, material selection, reaction and reactor modeling and EF scale-up. It particularly focuses on the applications of EF process in the treatment of toxic and persistent organic pollutants in water and soil, showing highly efficient removal for both lab-scale and pre-pilot setups. Indeed, the EF technology is now mature enough to be brought to market, and this collection of contributions from leading experts in the field constitutes a timely milestone for scientists and engineers.