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Computer Engineering Laboratory Solution Primer **Hemicellulose Biorefinery: A Sustainable Solution for Value Addition to Bio-Based Products and Bioenergy** Obj Oriented Prog With C++,5e **Innovative Applications in Computing** *Advances in Food Bioproducts and Bioprocessing Technologies Artificial Intelligence for Data-Driven Medical Diagnosis* Bioethanol **Pratiyogita Darpan** *Conjugated Polymers And Oligomers: Structural And Soft Matter Aspects* Biogas Production ... *Annual Report* Programming in ANSI C Nanopores **Liquid Crystals Beyond Displays Intelligent Stimuli-Responsive Materials** *Artificial Neural Nets and Genetic Algorithms Programming with JAVA - A Primer* **Recent Advances in Machines and Mechanisms** Fund Of Computers *Evaporative Self-assembly of Ordered Complex Structures* **Reliability Engineering** Reliability Analysis and Prediction *Information Technology* Handbook of Performability Engineering **The Monetization of Technical Data** Journal of the Indian Institute of Science Computer Systems and Applications **Value-Addition in Food Products and Processing Through Enzyme Technology Sustainable Biotechnology- Enzymatic Resources of Renewable Energy** *Gas Transport in Glassy Polymers* **Physical Chemistry of Gas-Liquid Interfaces** *Biorefinery for Water and Wastewater Treatment* Learning Pentaho CTools *Gel Chemistry Computing Fundamentals and Programming in C Nanobiotechnology for Sustainable Bioenergy and Biofuel Production* **Hierarchical Macromolecular Structures: 60 Years after the Staudinger Nobel Prize II Chemistry of Discotic Liquid Crystals Programming with Java Journal**

This new book, Bioethanol: Biochemistry and Biotechnological Advances, presents some insightful perspectives and important advances in the bioethanol industry. The volume goes into detail on the biochemical and physiological parameters carried out by the main bioethanol-producing microorganisms as well as the discusses the potential applications that bioproducts can have and the advantages they generate. The chapter authors discuss a variety of issues, including the physiology of ethanol production by yeasts, by Zymomonas mobilis, and by Clostridium thermocellum. Other sources of biofuel, such as sweet sorghum, Agave americana L. leaves waste, and fungi are included as well. Chapters also discuss the genetic regulation and genetic engineering of principal microorganisms and then go on to address ways to increase ethanol tolerance in industrially important ethanol fermenting organisms, methods for developing sustainable fermentable substrates, and new strategies for ethanol purification. Chapters explore the design and engineering requirements for bioreactors, bioelectrosynthesis of ethanol via bioelectrochemical systems, and more. The book will be a valuable resource for faculty and students in this area as well as for scientists, researchers, and managers in the biofuel industry in the area of biofuel production, fermentation process, environmental engineering and all other related scientific areas. This edited book provides knowledge about hemicelluloses biorefinery approaching production life cycle, circular economy, and valorization by obtaining value-added bioproducts and bioenergy. A special focus is dedicated to chemical and biochemical compounds produced from the hemicelluloses derivatives platform. Hemicelluloses are polysaccharides located into plant cell wall, with diverse chemical structures and properties. It is the second most spread organic polymer on nature and found in vast lignocellulosic materials from agro and industrial wastes, therefore, hemicelluloses are considered as abundant and renewable raw material/feedstock. Biorefinery concept contributes to hemicelluloses production associated with biomass industrial processes. Hemicelluloses are alternative sources of sugars for renewable fuels and as platform for chemicals production. This book reviews chemical processes for sugar production and degradation, obtaining of intermediate and final products, and challenges for pentose fermentation. Aspects of hemicelluloses chain chemical and enzymatic modifications are presented with focus on physicochemical properties improvement for bioplastic and biomaterial approaches. Hemicelluloses are presented as sources for advanced materials in biomedical and pharmaceutical uses, and as hydrogel for chemical and medicine deliveries. An interdisciplinary approach is needed to cover all the processes involving hemicelluloses, its conversion into final and intermediate value-added compounds, and bioenergy production. Covering this context, this book is of interest to teachers, students, researchers, and scientists dedicated to biomass valorization. This book is a knowledge source of basic aspects to advanced processing and application for graduate students, particularly. Besides, the book serves as additional reading material for undergraduate students (from different courses) with a deep interest in biomass and waste conversion, valorization, and chemical products from hemicelluloses Physical Chemistry of Gas-Liquid Interfaces, the first volume in the Developments in Physical & Theoretical Chemistry series, addresses the physical chemistry of gas transport and reactions across liquid surfaces. Gas–liquid interfaces are all around us, especially within atmospheric systems such as sea spry aerosols, cloud droplets, and the surface of the ocean. Because the reaction environment at liquid surfaces is completely unlike bulk gas or bulk liquid, chemists must readjust their conceptual framework when entering this field. This book provides the necessary background in thermodynamics and computational and experimental techniques for scientists to obtain a thorough understanding of the physical chemistry of liquid surfaces in complex, real-world environments. Provides an interdisciplinary view of the chemical dynamics of liquid surfaces, making the content of specific use to physical chemists and atmospheric scientists Features 100 figures and illustrations to underscore key concepts and aid in retention for young scientists in industry and graduate students in the classroom Helps scientists who are transitioning to this field by offering the appropriate thermodynamic background and surveying the current state of research This book collects research works of data-driven medical diagnosis done via Artificial Intelligence based solutions, such as Machine Learning, Deep Learning and Intelligent Optimization. Physical devices powered with Artificial Intelligence are gaining importance in diagnosis and healthcare. Medical data from different sources can also be analyzed via Artificial Intelligence techniques for more effective results. Nanopores are nanometer scale holes formed naturally by proteins or cells, and can be used for a variety of applications, including sequencing DNA and detecting anthrax. They can be integrated into artificially constructed encapsulated cells of silicon wafers while allowing small molecules like oxygen, glucose and insulin to pass, while keeping out large system molecules. "Nanopores: Sensing and Fundamental Biological Interactions" examines the emerging research directions surrounding nanopores such as genome sequencing and early disease detection using biomarker identification. Covering the applications of nanopores in genetics, proteomics, drug discovery, early disease detection and detection of emerging environmental threats, it is a must-have book for biomedicalengineers and research scientists. The monetization of data is a very young topic, for which there are only very few case studies. There is a lack of strategy or concept that shows decision-makers the way into the monetization of data, especially those who have discovered or are threatened by the digital transformation or Industry 4.0. Because machine data is usually unstructured and not usable without domain knowledge/metadata, the monetization of machine data has an as yet unquantifiable potential. In order to make this potential tangible, this work describes not only contributions from science, but

also practical examples from industry. Based on different examples from various industries, the reader can already become part of a future data economy today. Values and benefits are described in detail. Advances in Polymer Science enjoys a longstanding tradition and good reputation in its community. Each volume is dedicated to a current topic and each review critically surveys one aspect of that topic, to place it within the context of the volume. The volumes typically summarize the significant developments of the last 5 to 10 years and discuss them critically, presenting selected examples, explaining and illustrating the important principles and bringing together many important references of primary literature. On that basis, future research directions in the area can be discussed. Advances in Polymer Science volumes thus are important references for every polymer scientist as well as for other scientists interested in polymer science - as an introduction to a neighboring field, or as a compilation of detailed information for the specialist. The complete spectrum of computing fundamentals starting from abc of computer to internet usage has been well covered in simple and readers loving style, The language used in the book is lucid, is easy to understand, and facilities easy grasping of concepts, The chapter have been logically arranged in sequence, The book is written in a reader-friendly manner both the students and the teachers, Most of the contents presented in the book are in the form of bullets, organized sequentially. This form of presentation, rather than in a paragraph form, facilities the reader to view, understand and remember the points better, The explanation is supported by diagrams, pictures and images wherever required, Sufficient exercises have been included for practice in addition to the solved examples in every chapter related to C programming, Concepts of pointers, structures, Union and file management have been extensively detailed to help advance learners, Adequate exercises have been given at the end of the every chapter, Pedagogy followed for sequencing the contents on C programming supported by adequate programming examples is likely to help the reader to become proficient very soon, 200 problems on C programming & their solutions, 250 Additional descriptive questions on C programming. There has been concerted effort across scientific disciplines to develop artificial materials and systems that can help researchers understand natural stimuli-responsive activities. With its up-to-date coverage on intelligent stimuli-responsive materials, Intelligent Stimuli-Responsive Materials provides research, industry, and academia professionals with the fundamentals and principles of intelligent stimuli-responsive materials, with a focus on methods and applications. Emphasizing nanostructures and applications for a broad range of fields, each chapter comprehensively covers a different stimuli-responsive material and discusses its developments, advances, challenges, analytical techniques, and applications. Programming with JAVA, 3e, incorporates all the updates and enhancements added to JAVA 2 and J2SE 5.0 releases. The book presents the language concepts in extremely simple and easy-to-understand style with illustrations and examples wherever necessary. Salient Features Fully explaines the entire Java language. Discusses Java's unique features snduch as packages a interfaces. Shows how to create and implement applets. Illustrates the use of advanced concepts like multithread and graphics. Covers exception handling in depth. Debugging excercises and two full-fledged projects. Includes model questions from the Sun Certified JAVA Programmer Exam. Modern society depends heavily upon a host of systems of varying complexity to perform the services required. The importance of reliability assumes new dimensions, primarily because of the higher cost of these highly complex machines required by mankind and the implication of their failure. This is why all industrial organizations wish to equip their scientists, engineers, managers and administrators with a knowledge of reliability concepts and applications. Based on the author's 20 years experience as reliability educator, researcher and consultant, Reliability Engineering introduces the reader systematically to reliability evaluation, prediction, allocation and optimization. It also covers further topics, such as maintainability and availability, software reliability, economics of reliability, reliability management, reliability testing, etc. A reliability study of some typical systems has been included to introduce the reader to the practical aspects. The book is intended for graduate students of engineering schools and also professional engineers, managers and reliability administrators as it has a wide coverage of reliability concepts. Artificial neural networks and genetic algorithms both are areas of research which have their origins in mathematical models constructed in order to gain understanding of important natural processes. By focussing on the process models rather than the processes themselves, significant new computational techniques have evolved which have found application in a large number of diverse fields. This diversity is reflected in the topics which are subjects of the contributions to this volume. There are contributions reporting successful applications of the technology to the solution of industrial/commercial problems. This may well reflect the maturity of the technology, notably in the sense that 'real' users of modelling/prediction techniques are prepared to accept neural networks as a valid paradigm. Theoretical issues also receive attention, notably in connection with the radial basis function neural network. Contributions in the field of genetic algorithms reflect the wide range of current applications, including, for example, portfolio selection, filter design, frequency assignment, tuning of nonlinear PID controllers. These techniques are also used extensively for combinatorial optimisation problems. The use of spontaneous self-assembly, as a lithographic tool and as an external field-free means to construct well-ordered and intriguing patterns, has received much attention. This book offers a spectrum of experimental and theoretical advances in evaporative self-assembly techniques. Selection of papers presented at the Third Indian Computing Congress. Acquire finesse with CTools features and build rich and custom analytics solutions using Pentaho About This Book Learn everything you need to know to make the most of CTools Create interactive and remarkable dashboards using the CTools Understand how to use and create data visualizations that can make the difference The author of our book works for Pentaho as a Senior Consultant Acts as a follow-up to Packt's previously published products on Pentaho such as Pentaho Business Analytics Cookbook, Pentaho Analytics for MongoDB, Pentaho Data Integration Cookbook - Second Edition, and Pentaho Reporting [Video] Our book is based on the latest version of Pentaho, that is, 6.0 Who This Book Is For If you are a CTools developer and would like to expand your knowledge and create attractive dashboards and frameworks, this book is the go-to-guide for you. A basic knowledge of JavaScript and Cascading Style Sheets (CSS) is highly recommended. What You Will Learn Install Community Tools on Pentaho; and understand the necessary concepts and considerations when creating an exciting dashboard design Get data from many different Pentaho datasources and deliver it in different formats (CSV, XLS, XML, or JSON) Use the Community Data Access (CDA) as the data abstraction layer and understand the concepts in the Community Dashboard Framework (CDF) Create a Community Dashboard Editor (CDE) dashboard and make the most of the main components Create and make use of widgets and use duplicate components to have data-driven sections on the dashboard Customize and create interaction between all components, including charts, using the Community Charts Components Create and embed dashboards in a better and new way Create plugins and make use of parameters inside Pentaho without writing code In Detail Pentaho and CTools are two of the fastest and most rapidly growing tools for practical solutions not found in any other tool available on the market. Using Pentaho allows you to build a complete analytics solution, and CTools brings an advanced flexibility to customizing them in a remarkable way. CTools provides its users with the ability to utilize Web technologies and data visualization concepts, and make the most of best practices to create a huge visual impact. The book starts with the basics of the framework and how to get data to your dashboards. We'll take you all the way through to create your custom and advanced dashboards that will create an effective visual impact and provide the best user experience. You will be given deep insights into the lifecycle of dashboards and the working of various components. Further, you will create a custom dashboard using the Community Dashboards Editor and use datasources to load data on the components. You will also create custom content using Query, the Freeform Addins Popup, and text components. Next, you will make use of widgets to create similar sections and duplicate components to reproduce other components on a dashboard. You will then learn to build a plugin without writing Java code, use Sparkl as a CPK plugin manager, and

understand the application of deployment and version control to dashboard development. Finally, you will learn tips and tricks that can be very useful while embedding dashboards into other applications. This guide is an invaluable tutorial if you are planning to use custom and advanced dashboards among the solutions that you are building with Pentaho. Style and approach This book is a pragmatic, easy-to-follow guide that provides theoretical concepts, ideas, and tricks to better understand the necessary theoretical concepts. It also provides you with a set of highly intriguing samples of dashboards with customized code within them that can be utilized for future projects. The self-contained properties of discotic liquid crystals (DLCs) render them powerful functional materials for many semiconducting device applications and models for energy and charge migration in self-organized dynamic functional soft materials. The past three decades have seen tremendous interest in this area, fueled primarily by the possibility of creating a new generation of organic semiconductors and wide viewing displays using DLCs. While a number of books on classical calamitic liquid crystals are available, there are, as yet, no books that are dedicated exclusively to the basic design principles, synthesis, and physical properties of DLCs. The first reference book to cover DLCs, Chemistry of Discotic Liquid Crystals: From Monomers to Polymers highlights the chemistry and thermal behavior of DLCs. Divided into six chapters, each with a general description, background, and context for the concepts involved, the book begins with a basic introduction to liquid crystals, describing molecular self-assembly and various types of liquid crystals. It outlines their classification, covers their history and general applications, and focuses on DLCs and their discovery, structure, characterization, and alignment. The book goes on to examine the chemistry and physical properties of various monomeric DLCs, including 25 sections describing the synthesis and mesomorphic properties of monomeric DLCs formed by different cores. The bulk of the book covers the chemistry and mesomorphism of discotic dimers, oligomers, and polymers and concludes with a look at some applicable properties of DLCs. A comprehensive and up-to-date resource, this book is designed to be accessible and of value not just for students and researchers but also to the directors and principal investigators working in this field, providing the foundation and fuel to advance this fast-growing technological field. Bio-refinery approach of microbial fermentation, production of biogas, bioenergy, enzymes, bioactive molecules, agricultural nutrient and many more, which is presently restricted to specific journals, review articles and research papers in conference proceedings. Hence, my effort is to provide a complete and globally available advance knowledge in wastewater treatment with an aim of recovery of value added products. This will help in designing new approaches of waste water treatment with this value added thoughts. Thus, it will be a boon for a concern broad range of readers and industry professionals to their means of technology development for pollution prevention and economic growth of the country. This book presents the proceedings of 5th International and 20th National Conference on Machines and Mechanisms (iNaCoMM 2021) held at PDPM IIITDM Jabalpur during 9-11 December 2021. The conference was held in collaboration with the Association of Machines and Mechanisms (AMM) India and International Federation for the Promotion of Mechanism and Machine sciences (IFToMM). Various topics covered in this book include kinematics and dynamics of machines, compliant mechanisms; gear, cams and power transmission systems; mechanisms and machines for rural, agricultural and industrial applications; mechanisms for space applications; mechanisms for energy harvesting; robotics and automation; human-centric robotics; soft robotics; man-machine system, mechatronics and micro–mechanisms; CAD and CAGD; control of machines; vibration of machines & rotor dynamics; acoustic and noise; tribology; condition monitoring and failure analysis; fault diagnosis and health monitoring; biomedical engineering; and composites and advanced materials. Given the contents, the book will be useful for researchers and professionals working in the various domains of mechanical engineering. This book identifies modern topics and current trends of structural and soft matter aspects of conjugated polymers and oligomers. Each chapter recognizes an active research line where structural perspective dominates research and therefore the book covers fundamental aspects of persistent conjugated polymer backbone, water soluble conjugated polyelectrolytes and surfactants, conjugated molecules and biomolecules and DNA and the advanced use of synchrotron radiation and electron microscopy to find out structural details in conjugated molecule films and devices as well as under ambient and extreme conditions. Contents: Soft MaterialsChain Persistence in Conjugated Polymers and Supramolecular SystemsThin Film Structure of Conjugated MoleculesStructure of Conjugated PolyelectrolytesIntermolecular Interactions between Conjugated Polymers and DNASupramolecular Assemblies of Conjugated Polymers and DNAIn Situ Scattering of Conjugated Polymer Films Prepared by Roll-to-Roll TechniqueStructures of Conjugated Polymers under High Pressure Conditions Readership: The book is useful for physicists and chemists — particularly physical chemists and colloid chemists and materials chemists — and materials scientists and chemical engineers. Keywords: Conjugated Polymers;Conjugated Oligomers;Conjugated Polyelectrolytes;Supramolecules;Surfactants;DNA;Antibodies;Synchrotron Radiation;X-Ray;Electron Microscopy;Electron DiffractionReview: Key Features: Differentiation in terms of topic and specializationThe book is up-to-dateProminent expert authors This book covers various molecular, metal-organic, dynamic covalent, polymer and other gels, focusing on their driving interactions, structures and properties. It consists of six chapters demonstrating interesting examples of these gels, classified by the type of driving interaction, and also discusses the effect of these interactions on the gels' structures and properties. The book offers an interesting and useful guide for a broad readership in various fields of chemical and materials science. Dependability and cost effectiveness are primarily seen as instruments for conducting international trade in the free market environment. These factors cannot be considered in isolation of each other. This handbook considers all aspects of performability engineering. The book provides a holistic view of the entire life cycle of activities of the product, along with the associated cost of environmental preservation at each stage, while maximizing the performance. Value Addition in Food Products and Processing using Enzyme Technology offers an updated review regarding the potential impact of new enzymes and enzyme technology on the food sector. The book brings together novel sources and technologies regarding enzymes in value added food development, food production, food processing, food preservation, food engineering and food biotechnology. It will be extremely useful for different types of readers, including food scientists, academic and food biotechnologists, but will also be ideal for students studying food-related courses. This book includes concise and up-to-date research information from multiple independent scientific papers from around the world. This is a essential, multidisciplinary text for research and development professionals, research scientists, and academics in food, biotechnology, and agriculture industries. It addresses safety issues and includes the sources, screening, immobilization and application of food-grade enzymes in food. Presents research data from experts Includes emerging industry topics such as baby food and food safety Offers methodologies of enzymes in diagnostics for food testing and analysis Emphasizes enzyme technology through a microbial biotechnological lens Includes bakery and confectionery products, meat and poultry products, vegetables, food ingredients, functional foods, flavors and food additives and seafood Nanobiotechnology for Sustainable Bioenergy and Biofuel Production provides insights into the most recent innovations, trends, concerns and challenges in the production of biofuels. This book highlights a number of key research topics and practical applications of modern nanomaterials and nanocomposite-driven enzyme biotechnology for biofuels production, including the advances in the nanoscaffolds design (nanomaterials support) for immobilizing bioenergy producing enzymes (nanobiocatalyst system), the recent trends in biomass processing (untreated/treated agriculture and food waste, grasses, algal, etc.) using advanced nanobiocatalysts for biofuels production and the scale-up study of bioenergy production using nanomaterials immobilized enzymes and biofuel harvesting using nanomaterials. At the outset of new nanobiotechnology applications in biofuel production, there is a need for a new resource in the bioenergy field. This book delivers an overview of the contributions of biofuel production and the most up-to-date advances in nanobiotechnology to a diverse audience ranging from

post-graduate students to researchers in biochemical engineering, biotechnology, bioremediation and environmental studies and pharmaceutical professionals. Key Features • Outlines the most recent nanobiotechnological advances in biofuels and bioenergy for biofuels productions • Covers biodiesel, bioethanol, biomethane, biohydrogen, biorefineries and biofuel harvesting using nanomaterials • Explains the scale-up nanobiotechnological study of biofuel production at the bioreactor level The chemistry, physics, and applications of liquid crystals beyond LCDs Liquid Crystals (LCs) combine order and mobility on a molecular and supramolecular level. But while these remarkable states of matter are most commonly associated with visual display technologies, they have important applications for a variety of other fields as well. Liquid Crystals Beyond Displays: Chemistry, Physics, and Applications considers these, bringing together cutting-edge research from some of the most promising areas of LC science. Featuring contributions from respected researchers from around the globe, this edited volume emphasizes the chemistry, physics, and applications of LCs in areas such as photovoltaics, light-emitting diodes, filed-effect transistors, lasers, molecular motors, nanophotonics and biosensors. Specific chapters look at magnetic LCs, lyotropic chromonic LCs, LC-based chemical sensors, LCs in metamaterials, and much more. Introducing readers to the fundamentals of LC science through the use of illustrative examples, Liquid Crystals Beyond Displays covers not only the most recent research in the myriad areas in which LCs are being utilized, but also looks ahead, addressing potential future developments. Designed for physicists, chemists, engineers, and biologists working in academia or industry, as well as graduate students specializing in LC technology, this is the first book to consider LC applications across a wide range of fields. This book equips the reader with a compact information source on all the most recent methodological tools available in the area of reliability prediction and analysis. Topics covered include reliability mathematics, organisation and analysis of data, reliability modelling and system reliability evaluation techniques. Environmental factors and stresses are taken into account in computing the reliability of the involved components. The limitations of models, methods, procedures, algorithms and programmes are outlined. The treatment of maintained systems is designed to aid the worker in analysing systems with more realistic and practical assumptions. Fault tree analysis is also extensively discussed, incorporating recent developments. Examples and illustrations support the reader in the solving of problems in his own area of research. The chapters provide a logical and graded presentation of the subject matter bearing in mind the difficulties of a beginner, whilst bridging the information gap for the more experienced reader. The work will be of considerable interest to engineers working in various industries, research organizations, particularly in defence, nuclear, chemical, space or communications. It will also be an indispensable study aid for serious-minded students and teachers. Pratiyogita Darpan (monthly magazine) is India's largest read General Knowledge and Current Affairs Magazine. Pratiyogita Darpan (English monthly magazine) is known for quality content on General Knowledge and Current Affairs. Topics ranging from national and international news/ issues, personality development, interviews of examination toppers, articles/ write-up on topics like career, economy, history, public administration, geography, polity, social, environment, scientific, legal etc, solved papers of various examinations, Essay and debate contest, Quiz and knowledge testing features are covered every month in this magazine. Nature offers abundant renewable resources that can be used to partially replace fossil fuels and commodity chemicals but issues of cost, technology readiness levels, and compatibility with existing distribution networks remain huge challenges. Cellulosic ethanol and biodiesel are the most immediately obvious target fuels, with hydrogen, methane and butanol as other potentially viable products. This book continues to bridge the technology gap and focus on critical aspects of lignocellulosic biomolecules and the respective mechanisms regulating their bioconversion to liquid fuels into energy and value-added products of industrial significance. This book is a collection of reviews elucidating several broad-ranging areas of progress and challenges in the utilization of sustainable resources of renewable energy, especially in biofuels. This book comes just at a time when government and industries are accelerating their efforts in the exploration of alternative energy resources, with expectations of the establishment of long-term sustainable alternatives to petroleum-based liquid fuels. Apart from liquid fuel this book also emphasizes the use of sustainable resources for value-added products, which may help in revitalizing the biotechnology industry at a broader scale. This book also provides a comprehensive review of basic literature and advance research methodologies to graduate students studying environmental microbiology, chemical engineering, bio-economy and microbial biotechnology. This book focuses on biogas production by anaerobic digestion, which is the most popular bioenergy technology of today. Using anaerobic digestion for the production of biogas is a sustainable approach that simultaneously also allows the treatment of organic waste. The energy contained in the substrate is released in the form of biogas, which can be employed as a renewable fuel in diverse industrial sectors. Although biogas generation is considered an established process, it continues to evolve, e.g. by incorporating modifications and improvements to increase its efficiency and its downstream applications. The chapters of this book review the progress made related to feedstock, system configuration and operational conditions. It also addresses microbial pathways utilized, as well as storage, transportation and usage of biogas. This book is an up-to-date resource for scientists and students working on improving biogas production. This Special Issue of Membranes focuses on several new aspects of fluid transport in glassy polymers, with application in relevant membrane separations such as gas purification, VOC removal and CO2 capture. In particular, the focus lies on novel experimental techniques, and detailed characterization of specific phenomena like polar and multicomponent interactions during transport. The properties of novel materials, such as mixed matrix membranes based on glassy polymers and different selective fillers, are also presented. A critical review of existing modeling approaches to describe the sorption and transport in glassy polymers suitable for membrane separations is provided, including both macroscopic and atomistic models, and relying both on the standard solution–diffusion process and on the facilitated transport mechanism. The book explores and exploits the synergy and boundary between biotechnology, bioprocessing and food engineering. Divided into three parts, Advances in Food Bioproducts and Bioprocessing Technologies includes contributions that deal with new developments in procedures, bioproducts, and bioprocesses that can be given quantitative expression. Its 40 chapters will describe how research results can be used in engineering design, include procedures to produce food additives and ingredients, and discuss accounts of experimental or theoretical research and recent advances in food bioproducts and bioprocessing technologies. Laboratory Solution primer for students pursuing Computer Engineering. It reveals programs in web programming, algorithms, database, OpenGL, C++, Networking, Unix and System Software