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This book offers a collection of high-quality peer-reviewed research papers presented at the Second International Conference on Communication and Computational Technologies (ICCCT 2019), held at Rajasthan Institute of Engineering and Technology, Jaipur, Rajasthan, India, on 30–31 August 2019. In contributions prepared by researchers from academia and industry alike, the book discusses a wide variety of industrial, engineering and scientific applications of emerging techniques.

Fiber Reinforced Polymers are by no means new to this world. It is only because of our fascination with petrochemical and non-petrochemical products that these wonderful materials exist. In fact, the polymers can be considered and used in the construction and construction repair. The petrochemical polymers are of low cost and are used more that natural materials. The Fiber Reinforced Polymers research is currently increasing and entails a quickly expanding field due to the vast range of both traditional and special applications in accordance to their characteristics and properties. Fiber Reinforced Polymers are related to the improvement of environmental parameters, consist of important areas of research demonstrating high potential and particularly great interest, as civil construction and concrete repair.

"Introduction to Chemical Processes: Principles, Analysis, Synthesis, 2e is intended for use in an introductory, one-semester course for students in chemical engineering and related disciplines"--

A history of color and commerce from haute couture to automobile showrooms to interior design. When the fashion industry declares that lime green is the new black, or instructs us to “think pink!,” it is not the result of a backroom deal forged by a secretive cabal of fashion journalists, designers, manufacturers, and the editor of Vogue. It is the latest development of a color revolution that has been unfolding for more than a century. In this book, the award-winning historian Regina Lee Blaszczyk traces the relationship of color and commerce, from haute couture to automobile showrooms to interior design, describing the often unrecognized role of the color profession in consumer culture. Blaszczyk examines the evolution of the color profession from 1850 to 1970, telling the stories of innovators who managed the color cornucopia that modern artificial dyes and pigments made possible. These “color stylists,” “color forecasters,” and “color engineers” helped corporations understand the art of illusion and the psychology of color. Blaszczyk describes the strategic burst of color that took place in the 1920s, when General Motors introduced a bright blue sedan to compete with Ford's all-black Model T and when housewares became available in a range of brilliant hues. She explains the process of color forecasting—not a conspiracy to manipulate hapless consumers but a careful reading of cultural trends and consumer taste. And she shows how color information flowed from the fashion houses of Paris to textile mills in New Jersey. Today professional colorists are part of design management teams at such global corporations as Hilton, Disney, and Toyota. The Color Revolution tells the history of how colorists help industry capture the hearts and dollars of consumers.

This book addresses microwave chemistry at both the physical and molecular level. Its main goal is to elaborate the highly complex scientific issues involved in the fundamental theory of microwave chemistry, and in industrialized applications in the near future.The book provides detailed insights into the characterization and measurement of dielectric properties under complex conditions, such as chemical reactions, high-temperature environments, etc. Considerable attention is paid to the theory of dynamics in microwave chemistry, from the view of both physical level and molecular level. Microwave-Material Interactions simulation is used for physical dynamical analysis, while a Microwave--Molecules Interactions methodology is proposed for molecular dynamical analysis. In turn, calculational examples are introduced for better description and validation, respectively. Lastly, the book proposes design strategies and calculational examples for large-scale application. Richly illustrated and including a wealth of worked-out examples, this book is ideal for all researchers, students and engineers who are just getting started in the dynamics of microwave chemistry.

This book explores the career of one of the twentieth century's foremost theatrical and industrial designers. This book outlines the career of this complex and influential man through approximately fifty projects, bringing together never before exhibited drawings, models, photographs and films. Norman Bel Geddes was an innovative stage designer, director, producer, architect, industrial designer, futurist and urban planner. His professional credo was to simplify, to unify, to use form to communicate and, at times, shape function and to question the status quo. His research based approach to problem solving followed by his complete re imagining of a design problem, as if starting from scratch, resulted in the creation of a new, ideal product. hroughout his multi faceted career, Bel Geddes was a paradoxical figure made up of equal parts visionary and pragmatist, naturalist and industrialist, democrat and egoist. A number of products and practices now taken for granted can be traced directly back to Bel Geddes. His impact on the American landscape ranges from the U.S. federal high-

way system to all weather sports stadiums, revolving restaurants, modular domestic appliances and stylish home entertainment systems.

This best selling text prepares students to formulate and solve material and energy balances in chemical process systems and lays the foundation for subsequent courses in chemical engineering. The text provides a realistic, informative, and positive introduction to the practice of chemical engineering. The Integrated Media Edition update provides a stronger link between the text, media supplements, and new student workbook.

A comprehensive text on foundations and techniques of graph neural networks with applications in NLP, data mining, vision and healthcare.

This report reviews engineering's importance to human, economic, social and cultural development and in addressing the UN Millennium Development Goals. Engineering tends to be viewed as a national issue, but engineering knowledge, companies, conferences and journals, all demonstrate that it is as international as science. The report reviews the role of engineering in development, and covers issues including poverty reduction, sustainable development, climate change mitigation and adaptation. It presents the various fields of engineering around the world and is intended to identify issues and challenges facing engineering, promote better understanding of engineering and its role, and highlight ways of making engineering more attractive to young people, especially women.--Publisher's description.

An up-to-date and two volume overview of recent developments in the field of chemocatalytic and enzymatic processes for the transformation of renewable material into essential chemicals and fuels. Experts from both academia and industry discuss catalytic processes currently under development as well as those already in commercial use for the production of bio-fuels and bio-based commodity chemicals. As such, they cover drop-in commodity chemicals and fuels, as well as bio-based monomers and polymers, such as acrylic acid, glycols, polyesters and polyolefins. In addition, they also describe reactions applied to waste and biomass valorization and integrated biorefining strategies. With its comprehensive coverage of the topic, this is an indispensable reference for chemists working in the field of catalysis, industrial chemistry, sustainable chemistry, and polymer synthesis.

Comprehensive and up-to-date information on Earth’s most dominant year-to-year climate variation The El Niño Southern Oscillation (ENSO) in the Pacific Ocean has major worldwide social and economic consequences through its global scale effects on atmospheric and oceanic circulation, marine and terrestrial ecosystems, and other natural systems. Ongoing climate change is projected to significantly alter ENSO's dynamics and impacts. El Niño Southern Oscillation in a Changing Climate presents the latest theories, models, and observations, and explores the challenges of forecasting ENSO as the climate continues to change. Volume highlights include: Historical background on ENSO and its societal consequences Review of key El Niño (ENSO warm phase) and La Niña (ENSO cold phase) characteristics Mathematical description of the underlying physical processes that generate ENSO variations Conceptual framework for understanding ENSO changes on decadal and longer time scales, including the response to greenhouse gas forcing ENSO impacts on extreme ocean, weather, and climate events, including tropical cyclones, and how ENSO affects fisheries and the global carbon cycle Advances in modeling, paleo-reconstructions, and operational climate forecasting Future projections of ENSO and its impacts Factors influencing ENSO events, such as inter-basin climate interactions and volcanic eruptions The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals. Find out more about this book from this Q&A with the editors.

Volume 23 of Advances in Chemical Engineering covers the active field of process synthesis. There are currently three prevelant approaches to complex process synthesis strategies: heuristics-based selection, geometric representation, and optimization methods. This volume addresses a variety of these synthesis strategies for process subsystems, representing only a sample of the state-of-the-art of process synthesis research. The five papers in this volume address quite different process subsystems and application areas but still combine basic concepts related to a systematic approach. All five of the papers develop successful synthesis methods for their respective cutting-edge applications. As a group, the papers serve to highlight many unresolved issues in process synthesis and also provide guidelines for future research. Considers current approaches to process synthesis problems Examines areas of possible future research Articles written by leading experts in the field

IPCC Report on sources, capture, transport, and storage of CO2, for researchers, policy-makers and engineers.

This invaluable resource presents a state-of-the-art account of the psychology of pain from leading researchers. It features contributions from clinical, social, and biopsychological perspectives, the latest theories of pain, as well as basic processes and applied issues. The book opens with an introduction to the history of pain theory and the epidemiology of pain. It then explores theoretical work, including the gate control theory/neuromatrix model, as well as biopsychosocial, cognitive/behavioral, and psychodynamic perspectives. Issues, such as the link between psychophysiological processes and consciousness and the communication of pain are examined. Pain over the life span, ethno-cultural, and individual differences are the focus of the next three chapters. Pain: Psychological Perspectives addresses current clinical issues: * pain assessment and acute and chronic pain interventions; * the unavailability of psychological interventions for chronic pain in a number of settings, the use of self-report, and issues related to the implementation of certain biomedical interventions; and * the latest ethical standards and the theories. Intended for practitioners, researchers, and students involved with the study of pain in fields such as clinical and health psychology, this book will also appeal to physicians, nurses, and physiotherapists. Pain is ideal for advanced courses on the psychology of pain, pain management, and related courses that address this topic.

This text of applied chemistry considers the interface between chemistry and chemical engineering, using examples of some of the important process in dustries. Integrated with this is detailed consideration of measures which may be taken for avoidance or control of potential emissions. This new emphasis in applied chemistry has been developed through eight years of experience gained from working in industry in research, development and environment al control fields, plus twelve years of teaching here using this approach. It is aimed primarily towards science and engineering students as well as to envi ronmentalists and practising professionals with responsibilities or an interest in this interface. By providing the appropriate process information back to back with emis sions and control data, the potential for process fine--tuning is improved for both raw material efficiency and emission control objectives. This approach also emphasizes integral pro-

cess changes rather than add-on units for emis sion control. Add-on units have their place, when rapid action on an urgent emission problem is required, or when control simply is not feasible by pro cess integral changes alone. Obviously fundamental process changes for emission containment are best conceived at the design stage. However, at whatever stage process modifications are installed, this approach to control should appeal to the industrialist in particular, in that something more sub stantial than decreased emissions may be gained.

It is widely recognized nowadays that conical intersections of molecular potential-energy surfaces play a key mechanistic role in the spectroscopy of polyatomic molecules, photochemistry and chemical kinetics. This invaluable book presents a systematic exposition of the current state of knowledge about conical intersections, which has been elaborated in research papers scattered throughout the chemical physics literature. Section I of the book provides a comprehensive analysis of the electronic-structure aspects of conical intersections. Section II shows the importance of conical intersections in chemical reaction dynamics and gives an overview of the computational techniques employed to describe the dynamics at conical intersections. Finally, Section III deals with the role of conical intersections in the fields of molecular spectroscopy and laser control of chemical reaction dynamics. This book has been selected for coverage in: • CC / Physical, Chemical & Earth Sciences • Chemistry Citation Index(tm) • Index to Scientific Book Contents® (ISBC) Contents: Fundamental Concepts and Electronic Structure TheoryConical Intersections in Photoinduced and Collisional DynamicsDetection and Control of Chemical Dynamics at Conical Intersections Readership: Researchers in theoretical chemistry, molecular spectroscopy and photochemistry. Keywords:Conical Intersections;Photochemistry;Chemical Reaction Dynamics;Photo-dissociation;Diabetic

Flocculation: Processes and Applications opens by approaching current trends in preparation and chemical modification of flocculant polysaccharides derived from plants and their flocculation performance. In addition, aspects including mechanisms of flocculation, chemical modification, the effect of physicochemical factors on flocculating activity, and recent applications of flocculant polysaccharides are reviewed.The authors go on to propose plant extracts which can efficiently perform coagulation and flocculation operations without the environmental risk of residual sludge with high concentrations of aluminum or iron.A separate study aimed to use the organic polymer from Opuntia cochenillifera cactus associated with the addition of aluminum sulfate to treat the water of a lentic body applying coagulation, flocculation, sedimentation and filtration processes.The authors propose that the design and operation of flocculators is crucial for the process efficiency andlargely dependent on the following features: floc characteristics, flocculation kinetics, and engineering aspects of flocculation.This compilation also discusses current knowledge on algal organic matter (AOM) flocculation, the impact of AOM on the removal of other compounds and links AOM composition and character to the efficiency of flocculation, the reaction conditions and mechanisms and finally, to the properties of flocs.Additionally, the performance of natural coagulant tanin compared to chemical coagulants aluminium sulphate and ferric chloride commonly used in the treatment of raw wastewater from tannery, by means of the physicochemical processes of coagulation, flocculation and sedimentation are examined.Through physical and chemical parameters, the efficiency of the coagulation/flocculation/sedimentation/filtration processes using organic coagulants in the treatment of water from a lentic system in Brazil are examined as well.Later, the physicochemical performance of chitosan and mesquite gum as coagulant flocculent agent for the treatment of residual water of the cutting and packing of meat products factory is presented.The brewing industry generates effluent that can cause serious environmental impacts when not treated properly due to high loads of organic matter in its composition. Thus, in view of the growing emergence of breweries in Brazil and consequent increase in effluent production, alternatives are sought for the auxiliary treatment using coagulants and their efficiency is analyzed.Urban development also contributes to increasing water pollution, therefore the authors perform water treatment (through the electrocoagulation process) to calculate the cost of the operation.Eutrophication is one of the most prevalent water quality problems in the United States as well as other parts of the world. It has led to excessive growth of algal blooms, which not only cause the death of aquatic plants and animals, but also produce high levels of toxins and odorous compounds. The authors examine the performance of the coagulation/flocculation process using aluminum and ferric salt coagulants for the removal of microcystins.One study focuses on the coagulation flocculation of young leachate from the Kenitra city landfill. Tests were carried out by adding ferric chloride mixed with three flocculants, namely: the chitosan, the Superfloc SD2065 and the Himoloc.The authors outline researches about combining assisted sedimentation with other operations such as oxidation processes in order to evaluate the solids removal of the complete designed wastewater treatment focusing on OMW treatment.The penultimate chapter focuses on the preparation and characterization of the chitosan based flocculant for removal of heavy metal ion prepared from chitosan by N-acylation with ethylenediaminetetraacetic acid monoanhydride.The concluding study aims to apply the Bratby method in the characterization of the turbidity removal process, through the determination of the kinetic aggregation coefficient (KA) of the flocs and the kinetic coefficient of rupture (KB) of the flocs.

“Process Plant Equipment Book is another greatpublication from Wiley as a reference book for final year studentsas well as those who will work or are working in chemicalproduction plants and refinery…” -Associate Prof.Dr. Ramli Mat, Deputy Dean (Academic), Faculty of ChemicalEngineering, Universiti Teknologi Malaysia “…give[s] readers access to both fundamentalinformation on process plant equipment and to practical ideas, bestpractices and experiences of highly successful engineers fromaround the world… The book is illustrated throughout withnumerous black & white photos and diagrams and also containscase studies demonstrating how actual process plants haveimplemented the tools and techniques discussed in the book. Anextensive list of references enables readers to explore eachindividual topic in greater depth…”–Stainless Steel World and Valve World, November 2012 Discover how to optimize process plant equipment, fromselection to operation to troubleshooting From energy to pharmaceuticals to food, the world depends onprocessing plants to manufacture the products that enable people tosurvive and flourish. With this book as their guide, readers havethe information and practical guidelines needed to select, operate,maintain, control, and troubleshoot process plant equipment so thatit is efficient, cost-effective, and reliable throughout itslifetime. Following the authors' careful explanations andinstructions, readers will find that they are better able to reducedowntime and unscheduled shutdowns, streamline operations, andmaximize the service life of processing equipment. Process Plant Equipment: Operation, Control, andRelia-

bility is divided into three sections: Section One: Process Equipment Operations covers suchkey equipment as valves, pumps, cooling towers, conveyors, andstorage tanks Section Two: Process Plant Reliability sets forth avariety of tested and proven tools and methods to assess and ensurethe reliability and mechanical integrity of process equipment,including failure analysis, Fitness--for-Service assessment,engineering economics for chemical processes, and process componentfunction and performance criteria Section Three: Process Measurement, Control, andModeling examines flow meters, process control, and processmodeling and simulation Throughout the book, numerous photos and diagrams illustrate theoperation and control of key process equipment. There are also casestudies demonstrating how actual process plants have implementedthe tools and techniques discussed in the book. At the end of eachchapter, an extensive list of references enables readers to exploreeach individual topic in greater depth. In summary, this text offers students, process engineers, andplant managers the expertise and technical support needed tostreamline and optimize the operation of process plant equipment,from its initial selection to operations to troubleshooting.

Reviews the circumstances surrounding the Challenger accident to establish the probable cause or causes of the accident. Develops recommendations for corrective or other action based upon the Commission1s findings and determinations. Color photos, charts and tables.

Process Oriented Guided Inquiry Learning (POGIL) is a pedagogy that is based on research on how people learn and has been shown to lead to better student outcomes in many contexts and in a variety of academic disciplines. Beyond facilitating students' mastery of a discipline, it promotes vital educational outcomes such as communication skills and critical thinking. Its active international community of practitioners provides accessible educational development and support for anyone developing related courses. Having started as a process developed by a group of chemistry professors focused on helping their students better grasp the concepts of general chemistry, The POGIL Project has grown into a dynamic organization of committed instructors who help each other transform classrooms and improve student success, develop curricular materials to assist this process, conduct research expanding what is known about learning and teaching, and provide professional development and collegiality from elementary teachers to college professors. As a pedagogy it has been shown to be effective in a variety of content areas and at different educational levels. This is an introduction to the process and the community. Every POGIL classroom is different and is a reflection of the uniqueness of the particular context – the institution, department, physical space, student body, and instructor – but follows a common structure in which students work cooperatively in self-managed small groups of three or four. The group work is focused on activities that are carefully designed and scaffolded to enable students to develop important concepts or to deepen and refine their understanding of those ideas or concepts for themselves, based entirely on data provided in class, not on prior reading of the textbook or other introduction to the topic. The learning environment is structured to support the development of process skills –– such as teamwork, effective communication, information processing, problem solving, and critical thinking. The instructor's role is to facilitate the development of student concepts and process skills, not to simply deliver content to the students. The first part of this book introduces the theoretical and philosophical foundations of POGIL pedagogy and summarizes the literature demonstrating its efficacy. The second part of the book focusses on implementing POGIL, covering the formation and effective management of student teams, offering guidance on the selection and writing of POGIL activities, as well as on facilitation, teaching large classes, and assessment. The book concludes with examples of implementation in STEM and non-STEM disciplines as well as guidance on how to get started. Appendices provide additional resources and information about The POGIL Project.

Chromatography is a powerful separation tool that is used in all branches of science, and is often the only means of separating components from complex mixtures. The Russian botanist Mikhail Tswett coined the term chromatography in 1906. The first analytical use of chromatography was described by James and Martin in 1952, for the use of gas chromatography for the analysis of fatty acid mixtures. A wide range of chromatographic procedures makes use of differences in size, binding affinities, charge, and other properties. Many types of chromatography have been developed. These include Column chromatography, High performance liquid chromatography (HPLC), Gas chromatography, Size exclusion chromatography, Ion exchange chromatography etc. In this book contains more details about the applications of chromatography by various research findings. Each and every topics of this book have included lists of references at the end to provide students and researchers with starting points for independent chromatography explorations. I welcome comments, criticisms, and suggestions from students, faculty and researchers.

Accompanying DVD-ROM contains many realistic, interactive simulations.

This project addressed the admissibility of expert evidence in criminal proceedings in England and Wales. Currently, too much expert opinion evidence is admitted without adequate scrutiny because no clear test is being applied to determine whether the evidence is sufficiently reliable to be admitted. Juries may therefore be reaching conclusions on the basis of unreliable evidence, as confirmed by a number of miscarriages of justice in recent years. Following consultation on a discussion paper (LCCP 190, 2009, ISDBN 9780118404655) the Commission recommends that there should be a new reliability-based admissibility test for expert evidence in criminal proceedings. The test would not need to be applied routinely or unnecessarily, but it would be applied in appropriate cases and it would result in the exclusion of unreliable expert opinion evidence. Under the test, expert opinion evidence would not be admitted unless it was adjudged to be sufficiently reliable to go before a jury. The draft Criminal Evidence (Experts) Bill published with the report (as Appendix A) sets out the admissibility test and also provides the guidance judges would need when applying the test, setting out the key reasons why an expert's opinion evidence might be unreliable. The Bill also codifies (with slight modifications) the uncontroversial aspects of the present law, so that all the admissibility requirements for expert evidence would be set out in a single Act of Parliament and carry equal authority.

Introduction to Chemical Processes: Principles, Analysis, Synthesis enhances student understanding of the connection between the chemistry and the process. Users will find strong coverage of chemistry, gain a solid understanding of what chemical processes do (convert raw materials into useful products using energy and other resources), and learn about the ways in which chemical engineers make decisions and balance constraints to come up with new processes and products. The author presents material and energy balances as tools to achieve a real goal: workable, economical, and safe chemical processes and products. Loaded with in-

triguing pedagogy, this text is essential to a students first course in Chemical Engineering. Additional resources intended to guide users are also available as package options, such as ChemSkill Builder.

Microfabrication for Industrial Applications focuses on the industrial perspective for micro- and nanofabrication methods including large-scale manufacturing, transfer of concepts from lab to factory, process tolerance, yield, robustness, and cost. It gives a history of miniaturization, micro- and nanofabrication, and surveys industrial fields of application, illustrating fabrication processes of relevant micro and nano devices. Concerning sub-micron feature manufacture, the book explains: the philosophy of micro/ nanofabrication for integrated circuit industry; thin film deposition; (waveguide, plastic, semiconductor) material processing; packaging; interconnects; stress (e.g., thin film residual); economic; and environmental aspects. Micro/nanomechanical sensors and actuators are explained in depth with information on applications, materials (incl. functional polymers), methods, testing, fabrication, integration, reliability, magnetic microstructures, etc. Shows engineers & students how to evaluate the potential value of current and nearfuture manufacturing processes for miniaturized systems in industrial environments Explains the top-down and bottom up approaches to nanotechnology, nanostructures fabricated with beams, nano imprinting methods, nanoparticle manufacturing (and their health aspects), nanofeature analysis, and connecting nano to micro to macro Discusses issues for practical application cases; possibilities of dimension precision; large volume manufacturing of micro- & nanostructures (machines, materials, costs) Explains applications of Microsystems for information technology, e.g.: data recording (camera, microphone), storage (memories, CDs), communication; computing; and displays (beamers, LCD, TFT) Case studies are given for sensors, resonators, probes, transdermal medical systems, micro- pumps & valves, inkjets, DNA-analysis, lab-on-a-chip, & micro-cooling

Learning the basics of physical chemistry with a unique, innovative approach. Georg Job and Regina Rueffler introduce readers to an almost intuitive understanding of the two fundamental concepts, chemical potential and entropy. Avoiding complex mathematics, these concepts are illustrated with the help of numerous demonstration experiments. Using these concepts, the subjects of chemical equilibria, kinetics and electrochemistry are presented at an undergraduate level. The basic quantities and equations necessary for the qualitative and quantitative description of chemical transformations are introduced by using everyday experiences and particularly more than one hundred illustrative experiments, many presented online as videos. These are in turn supplemented by nearly 400 figures, and by learning objectives for each chapter. From a review of the German edition: “This book is the most revolutionary textbook on physical chemistry that has been published in the last few decades.”

As read on BBC Radio 4 THE #1 SUNDAY TIMES and #1 NEW YORK TIMES BESTSELLER Winner of the Goodreads Choice Best Debut Novel Award India Knight's SUNDAY TIMES Book of the Year A Book of the Year for: Guardian, Times, Sunday Times, Good Housekeeping, Woman & Home, Stylist, TLS, Oprah Daily, Newsweek, Mail on Sunday, Daily Express, Daily Mirror, Evening Standard, New York Times, India Knight, Hay Festival and many others 'Sparky, rip-roaring, funny, with big-hearted fully formed, loveable characters' SUNDAY TIMES 'The most charming, life-enhancing novel I've read in ages. Strongly recommend' INDIA KNIGHT 'Laugh-out-loud funny and brimming with life, generosity and courage' RACHEL JOYCE 'A novel that sparks joy with every page' ELIZABETH DAY _____ Your ability to change everything - including yourself - starts here Chemist Elizabeth Zott is not your average woman. In fact, Elizabeth Zott would be the first to point out that there is no such thing. But it's the early 1960s and her all-male team at Hastings Research Institute take a very unscientific view of equality. Except for one: Calvin Evans, the lonely, brilliant, Nobel-prize nominated grudge-holder who falls in love with - of all things - her mind. True chemistry results. Like science, life is unpredictable. Which is why a few years later, Elizabeth Zott finds herself not only a single mother, but the reluctant star of America's most beloved cooking show, Supper at Six. Elizabeth's unusual approach to cooking ('combine one tablespoon acetic acid with a pinch of sodium chloride') proves revolutionary. But as her following grows, not everyone is happy. Because as it turns out, Elizabeth Zott isn't just teaching women to cook. She's daring them to change the status quo. _____ SOON TO BE A MAJOR APPLE TV SERIAL, STARRING BRIE LARSON 'I loved Lessons in Chemistry and am devastated to have finished it!' NIGELLA LAWSON 'Elizabeth Zott is an iconic heroine - a feminist who refuses to be quashed, a mother who believes that her child is a person to behold, rather than to mould, and who will leave you, and the lens through which you see the world, quite changed' PANDORA SYKES 'It's the world versus Elizabeth Zott, and I had no trouble choosing a side. A page-turning and highly satisfying tale: zippy, zesty, and Zotty' MAGGIE SHIPSTEAD, author of GREAT CIRCLE This text explains the concepts behind process design. It uses a case study approach, guiding readers through realistic design problems, and referring back to these cases at the end of each chapter. Throughout, the author uses shortcut techniques that allow engineers to obtain the whole focus for a design in a very short period (generally less than two days).

Horizons in Sustainable Industrial Chemistry and Catalysis, Volume 178, presents a comprehensive picture of recent developments in terms of sustainable industrial processes and the catalytic needs and opportunities to develop these novel routes. Each chapter includes an introduction and state-of-the-art in the field, along with a series of specific aspects and examples. The book identifies new opportunities for research that will help us transition to low carbon and sustainable energy and chemical production. Users will find an integrated view of the new possibilities in this area that unleashes new possibilities in energy and chemistry. Combines an analysis of each scenario, the state-of-the art, and specific examples to help users better understand needs, opportunities, gaps and challenges Offers an integrated view of new catalytic technologies that are needed for future use Presents an interdisciplinary approach that combines broad expertise Brings together experts in the area of sustainable industrial chemistry

Oil and gas are the most important non-renewable sources of energy. Exploring, producing and managing these resources in compliance with HSE standards are challenging tasks. New technologies, workflows and procedures have to be implemented.This book deals with some of these themes and describes some of the advanced technologies related to the oil and gas industry from HSE to field management issues. Some new technologies for geo--modeling, transient well testing and digital rock physics are also introduced. There are many more technical topics to be addressed in future books. This book is aimed at researchers, petroleum engineers, geoscientists and people working within the petroleum industry.

Chemical Methods, a new release in the Enhanced Oil Recovery series, helps engineers focus on the latest developments in one

fast-growing area. Different techniques are described in addition to the latest technologies in data mining and hybrid processes. Beginning with an introduction to chemical concepts and polymer flooding, the book then focuses on more complex content, guiding readers into newer topics involving smart water injection and ionic liquids for EOR. Supported field case studies illustrate a bridge between research and practical application, thus making the book useful for academics and practicing engineers. This series delivers a multi-volume approach that addresses the latest research on various types of EOR. Supported by a full spectrum of contributors, this book gives petroleum engineers and researchers the latest developments and field applications to drive innovation for the future of energy. Presents the latest research and practical applications specific to chemical enhanced oil recovery methods Helps users understand new research on available technology, including chemical flooding specific to unconventional reservoirs and hybrid chemical options Includes additional methods, such as data mining applications and economic and environmental considerations

This report presents an overview of performance-related pay policies (PRP) for government employees in selected OECD member countries over the past two decades. Both the strengths and the weaknesses of PRP policies are assessed. The report explores ...

Now in its 2nd edition, Medical Terminology Express adapts Barbara Gylys's proven word-building techniques for the short--course. Organized by body system, this text shows the connection between anatomical structures and associated medial word roots.

The book explains the principles and fundamentals of Green Analytical Chemistry (GAC) and highlights the current developments and future potential of the analytical green chemistry-oriented applications of various solutions. The book consists of sixteen chapters, including the history and milestones of GAC; issues related to teaching of green analytical chemistry and greening the university laboratories; evaluation of impact of analytical activities on the environmental and human health, direct techniques of detection, identification and determination of trace constituents; new achievements in the field of extraction of trace analytes from samples characterized by complex composition of the matrix; "green" nature of the derivatization process in analytical chemistry; passive techniques of sampling of analytes; green sorption materials used in analytical procedures; new types of solvents in the field of analytical chemistry. In addition green chromatography and related techniques, fast tests for assessment of the wide spectrum of pollutants in the different types of the medium, remote monitoring of environmental pollutants, qualitative and comparative evaluation, quantitative assessment, and future trends and perspectives are discussed. This book appeals to a wide readership of the academic and industrial researchers. In addition, it can be used in the classroom for undergraduate and graduate Ph.D. students focusing on elaboration of new analytical procedures for organic and inorganic compounds determination in different kinds of samples characterized by complex matrices composition.Jacek Namieśnik was a Professor at the Department of Analytical Chemistry, Gdańsk University of Technology, Poland. Justyna Płotka-Wasylka is a teacher and researcher at the same department.

Examines the biochemistry, physiology, and anatomy of the olfactory, gustatory, and trigeminal chemosensory systems. The text explores the role of olfactory assessment in disease diagnosis and provides an up-to-date review of chemosensory research. in the medical, food, beverage, flavour, perfume, and energy industries.

Gasification is the thermochemical process of converting carbonaceous material in the presence of an oxidant less than stoichiometric to form a gaseous product, known as synthesis gas or syngas, at high temperatures. The gas produced can have different uses depending on its quality. Among these uses are to drive internal combustion engines and gas turbines, direct burning, and synthesis of chemical components. This book provides a comprehensive overview of the various techniques and applications of syngas developed thus far to contribute to a better understanding of this important process of obtaining a renewable fuel, which is essential for the development of a sustainable economy.