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This book comprises the proceedings of the International Conference on Transformations in Engineering Education conducted jointly by BVB College of Engineering & Technology, Hubli, India and Indo US Collaboration for Engineering Education (IUCEE). This event is done in collaboration with International Federation of Engineering Education Societies (IFEES), American Society for Engineering Education (ASEE) and Global Engineering Deans' Council (GEDC). The conference is about showcasing the transformational practices in Engineering Education space.

Petroleum Geoscience is a comprehensive introduction to the application of geology and geophysics to the search for and production of oil and gas. Uniquely, this book is structured to reflect the sequential and cyclical processes of exploration, appraisal, development and production. Chapters dedicated to each of these aspects are further illustrated by case histories drawn from the authors' experiences. Petroleum Geoscience has a global and 'geo-temporal' backdrop, drawing examples and case histories from around the world and from petroleum systems ranging in age from late-Pre-Cambrian to Pliocene. In order to show how geoscience is integrated at all levels within the industry, the authors stress throughout the links between geology and geophysics on the one hand, and drilling, reservoir engineering, petrophysics, petroleum engineering, facilities design, and health, safety and the environment on the other. Petroleum Geoscience is designed as a practical guide, with the basic theory augmented by case studies from a wide spread of geographical locations. Covers all the key aspects of the origin of petroleum, exploration, and production. It takes account of the modern emphasis on the efficient utilisation of reserves, on new methods in exploration (such as 3-D seismics). Book takes 'value-chain' approach to Petroleum Geoscience. First new text on petroleum geology for geology undergraduates to be published in the last ten years. Packed full of real-life case studies from Petroleum industry.

The one-stop resource for all aspects of water treatment engineering—from theory to practice Completely revised and updated to address current practices and technologies, *Water Treatment: Principles and Design, Second Edition* provides unique coverage of both the principles and theory of water treatment, as well as the practical considerations of plant design and distribution. Written by the world's leading water engineering firm, *Water Treatment: Principles and Design, Second Edition* presents the breadth of water treatment engineering—from the theory and principles of water chemistry and microbiology to in-depth discussions of revolutionary treatment processes to concise tips for plant and network design. Material has been extensively updated and revised in response to regulatory requirements and growing public awareness, particularly in the areas of disinfection, membrane filtration, disposal of treatment plant residuals, and basic microbiology with an emphasis on human pathogens and diseases. *Water*

Treatment: Principles and Design, Second Edition provides an essential textbook for students and a reliable resource for environmental and water resources engineers.

This text provides a comprehensive and concise treatment of the topic of traffic flow theory and includes several topics relevant to today's highway transportation system. It provides the fundamental principles of traffic flow theory as well as applications of those principles for evaluating specific types of facilities (freeways, intersections, etc.). Newer concepts of Intelligent transportation systems (ITS) and their potential impact on traffic flow are discussed. State-of-the-art in traffic flow research and microscopic traffic analysis and traffic simulation have significantly advanced and are also discussed in this text. Real world examples and useful problem sets complement each chapter. This textbook is meant for use in advanced undergraduate/graduate level courses in traffic flow theory with prerequisites including two semesters of calculus, statistics, and an introductory course in transportation. The text would also be of interest to transportation professionals as a refresher in traffic flow theory, or as a reference. Students and engineers of diverse backgrounds will find this text accessible and applicable to today's traffic issues.

Published March 2004 Noted for its highly readable style, the new edition of this bestseller provides an updated overview of aeronautical and aerospace engineering. Introduction to Flight blends history and biography with discussion of engineering concepts, and shows the development of flight through this perspective. New content includes coverage of: the last days of the Concorde and the centennial of the Wright Brothers' flight; the Mariner and Voyager 2 missions; geometric and geopotential altitudes; and uninhabited aerial vehicles [UAVs]. Preview Boxes, new to this edition, provide students with a snapshot of what they are to learn in each chapter.

This unique volume provides a comprehensive overview of all the major aspects of modern drinking water systems in the western European context. It not only covers the theoretical principles, but also the historical background and practical aspects of design and operation, legislation, planning and finance of drinking water supply in its social and economic context. The principles and practices are illustrated using experiences from The Netherlands. The Dutch drinking water supply is well known for its multiple barrier systems and high technical standards. The Dutch drinking water is of high quality and does not contain chlorine, and the Dutch therefore readily drink tap water and do not see the need to buy bottled water or in-house filters, with their drawbacks on national economics, public health and the environment. This illustrative overview can be used as a reference for other countries and regions.

This book constitutes the proceedings of the 6th European Conference on Massive Open Online Courses, EMOOCs 2019, held in Naples, Italy, in May 2019. The 15 full and 6 short papers presented in this volume were carefully reviewed and selected from 42 submissions. Massive Open Online Courses

(MOOCs) have marked a milestone in the use of technology for education. The reach, potential, and possibilities of EMOOCs are immense. But they are not only restricted to global outreach: the same technology can be used to improve teaching on campus and training inside companies and institutions. The chapter 'Goal Setting and Striving in MOOCs. A Peek inside the Black Box of Learner Behaviour' is open access under a CC BY 4.0 license at link.springer.com.

Summary: "Backcasting: looking back from a desirable future. Since the 1990s sustainable futures have been explored in backcasting experiments, numerous stakeholders have been involved and first steps have been planned in line with the envisioned sustainable futures. But what is the impact of these so-called backcasting experiments ten years later? Backcasting for a Sustainable Future: The impact after 10 years is the first book that systematically investigates the follow-up and spin-off of backcasting experiments seven to ten years after completion. It presents three case studies about (1) Novel Protein Foods and meat alternatives; (2) Sustainable Households and Nutrition; and (3) Multiple Sustainable Land-use in rural areas. The cases show that participatory backcasting may, but does not automatically lead to substantial follow-up and spinoff. Using innovation and learning theories the factors that affect the emergence of follow-up and new networks are identified and discussed. This book will be of great value to all those who work on sustainable futures and system innovations, such as researchers in system innovations, sustainability and social change, as well as policy-makers, transition experts and backcasting professionals."--Publisher description.

Making Room for People elaborates on preferences in housing. It explores how users, occupants, and citizens can express their needs, searching for the enhancement of individual choice and control over their residential environment, and the predicted positive spin-off's for urban collectives. The central question is: What are the conditions under which an increase of people's choice and voice over the places they inhabit contribute to more liveable urban areas? The options to make choices and to have a say in urban design and housing matters are used as a conceptual framework. "Choice" and "voice" are the main concepts that structure the empirical material.

an overview of product design approaches and methods used at the faculty of Industrial Design Engineering at the TU Delft.

Analog design is one of the more difficult aspects of electrical engineering. The main reason is the apparently vague decisions an experienced designer makes in optimizing his circuit. To enable fresh designers, like students electrical engineering, to become acquainted with analog circuit design, structuring the analog design process is of utmost importance. Structured Electronic Design: Negative-Feedback Amplifiers presents a design methodology for negative-feedback amplifiers. The design methodology enables to synthesize a topology and to, at the same time, optimize the performance of that topology. Key issues in the design methodology are orthogonalization, hierarchy and simple models. Orthogonalization enables the separate optimization of the three fundamental quality aspects: noise, distortion and bandwidth.

Hierarchy ensures that the right decisions are made at the correct level of abstraction. The use of simple models, results in simple calculations yielding maximum-performance indicators that can be used to reject wrong circuits relatively fast. The presented design methodology divides the design of negative-feedback amplifiers in six independent steps. In the first two steps, the

feedback network is designed. During those design steps, the active part is assumed to be a nullor, i.e. the performance with respect to noise, distortion and bandwidth is still ideal. In the subsequent four steps, an implementation for the active part is synthesized. During those four steps the topology of the active part is synthesized such that optimum performance is obtained. Firstly, the input stage is designed with respect to noise performance. Secondly, the output stage is designed with respect to clipping distortion. Thirdly, the bandwidth performance is designed, which may require the addition of an additional amplifying stage. Finally, the biasing circuitry for biasing the amplifying stages is designed. By dividing the design in independent design steps, the total global optimization is reduced to several local optimizations. By the specific sequence of the design steps, it is assured that the local optimizations yield a circuit that is close to the global optimum. On top of that, because of the separate dedicated optimizations, the resource use, like power, is tracked clearly. Structured Electronic Design: Negative-Feedback Amplifiers presents in two chapters the background and an overview of the design methodology. Whereafter, in six chapters the separate design steps are treated with great detail. Each chapter comprises several exercises. An additional chapter is dedicated to how to design current sources and voltage source, which are required for the biasing. The final chapter in the book is dedicated to a thoroughly described design example, showing clearly the benefits of the design methodology. In short, this book is valuable for M.Sc.-curriculum Electrical Engineering students, and of course, for researchers and designers who want to structure their knowledge about analog design further.

Learn GIS skills for catchment hydrology and water management with QGIS for Hydrological Applications! This workbook introduces professionals in the water sector to the state of the art functionality of QGIS 3.x for hydrological applications. The book can also be used as a beginner's course introducing GIS concepts in a problem based learning manner. Designed to take advantage of the latest QGIS features, this book will guide you in improving your maps and analysis. The book is a complete resource and includes: Lab exercises Discussion questions Links to videos with theory and explanations of the exercises By purchasing the book you support the attendance of students at FOSS4G and QGIS events.

Complex Situations in Coaching is a collection of 20 typical yet underdiscussed issues in coaching, ranging from value conflicts, multiple agendas, power dynamics, and emotion management, to the role of money, etc. Organized into ten chapters, they are positioned into the literature and commented on by world-class coaches, coaching researchers, educators, and program directors. This plurality of voices is designed to foster dialogue, questions, and solutions; this setting, supportive of reflexivity, critical thinking, and diversity awareness, is essential to the development and education of coaches in an increasingly complex world where ready-made solutions prove limited. Thus, beyond a 'toolkit approach', this book engages in a thought-provoking and multi-perspective journey in support of the professionalization and continuous education of coaches, instructors, and/or supervisors.

In the past few years the image of tender procedures in which Dutch public clients selected an architect has been dominated by distressing newspaper headlines. Architects fear that the current tender culture will harm the quality of our built environment due to a potential lack of diversity, creativity and innovation in architectural design. Due to potential risks clients often allow legal requirements to overrule their actual wishes. This PhD research addresses the origin of the problems as currently experienced by public commissioning clients in architect selection and proposes pragmatic implications for future practice. It is therefore of interest for commissioning clients, management consultants, policy makers and legal advisors but also for designers and researchers in the field of architecture and decision making.

This comprehensive textbook takes you through everything you need to know about solar energy from the physics of photovoltaic (PV) cells through to the design of PV systems for real-life applications. Solar Energy is an invaluable reference for researchers, industrial engineers

and designers working in solar energy generation. The book is also ideal for university and third-level physics or engineering courses on solar photovoltaics, with exercises to check students' understanding and reinforce learning. It is the perfect companion to the Massive Open Online Course (MOOC) on Solar Energy (DelftX, ET.3034TU) presented by co-author Arno Smets. The course is available in English on the nonprofit open source edX.org platform, and in Arabic on edraak.org. Over 100,000 students have already registered for these MOOCs. What role do universities play in the galloping process of globalization? *The Globalization of Higher Education* is a thoughtful, compelling examination of how the shrinking of the world is affecting universities and how they are responding. The book includes essays on various aspects of the phenomenon from university or research leaders representing 18 nations and five continents.

This comprehensive volume presents a wide spectrum of information about the design, analysis and manufacturing of aerospace structures and materials. Readers will find an interesting compilation of reviews covering several topics such as structural dynamics and impact simulation, acoustic and vibration testing and analysis, fatigue analysis and life optimization, reversing design methodology, non-destructive evaluation, remotely piloted helicopters, surface enhancement of aerospace alloys, manufacturing of metal matrix composites, applications of carbon nanotubes in aircraft material design, carbon fiber reinforcements, variable stiffness composites, aircraft material selection, and much more. This volume is a key reference for graduates undertaking advanced courses in materials science and aeronautical engineering as well as researchers and professional engineers seeking to increase their understanding of aircraft material selection and design.

A comprehensive look at the promise and potential of online learning In our digital age, students have dramatically new learning needs and must be prepared for the idea economy of the future. In *Getting Smart*, well-known global education expert Tom Vander Ark examines the facets of educational innovation in the United States and abroad. Vander Ark makes a convincing case for a blend of online and onsite learning, shares inspiring stories of schools and programs that effectively offer "personal digital learning" opportunities, and discusses what we need to do to remake our schools into "smart schools." Examines the innovation-driven world, discusses how to combine online and onsite learning, and reviews "smart tools" for learning Investigates the lives of learning professionals, outlines the new employment bargain, examines online universities and "smart schools" Makes the case for smart capital, advocates for policies that create better learning, studies smart cultures

More than 2.6 billion people in the developing world lack access to safe water and sanitation service. The Millennium Development Goal's (MDG) target is to halve the number of people without access to a sustainable source of water supply and connection to a sewer network by 2015. That target is unlikely to be met. If there is anything that can be learnt from European experience it is that institutional reform occurs incrementally when politically enfranchised urban populations perceive a threat to their material well-being due to contamination of water sources.

Microgrids are poised to play a big role in the electricity ecosystem of the future—with decarbonization, digitalization, decentralization, and non-wires solutions being key attributes. This handbook serves as a guide to evaluate the feasibility of microgrid systems in enhancing power supply quality and connectivity. It includes information about on-grid microgrids for urban and industrial applications, prevailing business

models, and emerging trends that could shape the future of this sector.

Containing papers presented at the 9th International Conference on Sustainable Development and Planning this volume brings together the work of academics, policy makers, practitioners and other international stakeholders and discusses new academic findings and their application in planning and development strategies, assessment tools and decision making processes. Problems related to development and planning are present in all areas and regions of the world. Accelerated urbanisation has resulted in both the deterioration of the environment and quality of life. Taking into consideration the interaction between different regions and developing new methodologies for monitoring, planning and implementation, new strategies can offer solutions mitigating environmental pollution and non-sustainable use of available resources. Energy saving and eco-friendly buildings have become an important part of modern day progress with emphasis on resource optimisation. Planning is a key part in ensuring that these solutions along with new materials and processes are efficiently incorporated. Planners, environmentalists, architects, engineers and economists have to work collectively to ensure that present and future needs are met. The papers in the book cover a number of topics, including: City planning; Regional planning; Rural developments; Sustainability and the built environment; Sustainability supply chain; Resilience; Environmental management; Energy resources; Cultural heritage; Quality of life; Sustainable solutions in emerging countries; Sustainable tourism; Learning from nature; Transportation; Social and political issues; Community planning; UN Sustainable Development Goals and Timber Structures.

It is estimated that literally billions of residents in urban and peri-urban areas of Africa, Asia, and Latin America are served by onsite sanitation systems (e.g. various types of latrines and septic tanks). Until recently, the management of faecal sludge from these onsite systems has been grossly neglected, partially as a result of them being considered temporary solutions until sewer-based systems could be implemented. However, the perception of onsite or decentralized sanitation technologies for urban areas is gradually changing, and is increasingly being considered as long-term, sustainable options in urban areas, especially in low- and middle-income countries that lack sewer infrastructures. This is the first book dedicated to faecal sludge management. It compiles the current state of knowledge of the rapidly evolving field of faecal sludge management, and presents an integrated approach that includes technology, management, and planning based on Sandecs 20 years of experience in the field. *Faecal Sludge Management: Systems Approach for Implementation and Operation* addresses the organization of the entire faecal sludge management service chain, from the collection and transport of sludge, and the current state of knowledge of treatment options, to the final end use or disposal of treated sludge. The book also presents important factors to consider when evaluating and upscaling new treatment technology options. The book is designed for undergraduate and graduate students, and engineers and practitioners in the field who have some basic knowledge of environmental and/or wastewater engineering.

Engineering Mechanics: Statics in SI Units, 12e provides students with a clear and thorough presentation of the theory and applications of this subject. By improving on the content, pedagogy, presentation and currency over the 12 editions, Hibbeler's *Engineering Mechanics* series is renowned for its clarity of explanation and robust

problem sets; making it the best-selling course text for this subject. This pack includes the study pack, which contains chapter reviews and a free-body diagram workbook, and a student access card for Mastering Engineering. Mastering Engineering is a powerful online assessment, tutorial and self-study system designed to help students understand and apply the key concepts in Engineering Mechanics. Individual, formative feedback, student support features such as hints and video solutions, and automatic grading make Mastering Engineering the perfect tool to enhance your student's learning. We live in an ever-modifying world, where people with different interests and goals have to deal with a constantly changing future. Problem solving is a daily experience for everyone. But, especially when problems become highly complex, how does one achieve the best solution to a problem? How are the different insights and interests of those involved included in the problem solving? How is a desired future outcome reached? People are best motivated to act upon complex problems when the essence of the problem is captured in a simple way. This book presents new and practical techniques to do so. Applying these techniques will help the reader to understand and oversee a problem and, eventually, to make decisions and act in situations in which it is not at all obvious what to do. The techniques in this second edition of Solving Complex Problems cover rational problem analysis, creative idea generation, dealing with uncertainty, and comparing different possible solutions. [Subject: Public Administration, Business Management, Sales and Marketing]

This book is published open access under a CC BY 4.0 license. Over the past decades, rapid developments in digital and sensing technologies, such as the Cloud, Web and Internet of Things, have dramatically changed the way we live and work. The digital transformation is revolutionizing our ability to monitor our planet and transforming the way we access, process and exploit Earth Observation data from satellites. This book reviews these megatrends and their implications for the Earth Observation community as well as the wider data economy. It provides insight into new paradigms of Open Science and Innovation applied to space data, which are characterized by openness, access to large volume of complex data, wide availability of new community tools, new techniques for big data analytics such as Artificial Intelligence, unprecedented level of computing power, and new types of collaboration among researchers, innovators, entrepreneurs and citizen scientists. In addition, this book aims to provide readers with some reflections on the future of Earth Observation, highlighting through a series of use cases not just the new opportunities created by the New Space revolution, but also the new challenges that must be addressed in order to make the most of the large volume of complex and diverse data delivered by the new generation of satellites.

Annotation. Many of China's rivers and lakes are strongly polluted, the air in cities is amongst the worst in the world, while some have warned that if the country is not careful it may soon have insufficient arable land to feed its population. This book looks at why the protection of natural resources through stricter legislation and more stringent law enforcement has been so difficult. It does so through a combination of a local case with comparative and theoretical insights about

lawmaking, compliance and enforcement. It offers a unique view on how law functions in the world's largest legal system, and how such law interacts with the social, economic and political circumstances at hand. This book offers an incomparable body of empirical and theoretical knowledge for those interested in how law functions in China, as well as those interested in the workings of regulatory lawmaking, compliance, and enforcement in a comparative perspective. This title can be previewed in Google Books - <http://books.google.com/books?vid=ISBN9789087280130>.

Structured Electronic Design Negative-feedback amplifiers Springer Science & Business Media

This open access book is unique in its contents. No other title in the book market has tackled this important subject. It introduces innovation as a way of practice for world-class universities. It, then, discusses the criteria for being innovative in the academic world. The book selects some of the top innovative world-class universities to study the factors that qualified them to be innovative, so that any other university can follow their steps to become innovative. The final chapter of the book presents some recommendations in this regard.

The photovoltaic (PV) industry has seen recent unprecedented growth in interest around the world. Many see this clean and abundant technology as the perfect power of the future. written to those new to the industry, Introduction to Photovoltaics provides readers with an overview of PV principles and concepts and lays the groundwork for future study. With a focus on the fundamentals, this text highlights the components, system types, business aspects, and the future of this advancing industry. It provides readers with a solid foundation for continuing a PV-related career.

Over the past twenty years, the knowledge and understanding of wastewater treatment has advanced extensively and moved away from empirically based approaches to a fundamentally-based first principles approach embracing chemistry, microbiology, and physical and bioprocess engineering, often involving experimental laboratory work and techniques. Many of these experimental methods and techniques have matured to the degree that they have been accepted as reliable tools in wastewater treatment research and practice. For sector professionals, especially a new generation of young scientists and engineers entering the wastewater treatment profession, the quantity, complexity and diversity of these new developments can be overwhelming, particularly in developing countries where access to advanced level laboratory courses in wastewater treatment is not readily available. In addition, information on innovative experimental methods is scattered across scientific literature and only partially available in the form of textbooks or guidelines. This book seeks to address these deficiencies. It assembles and integrates the innovative experimental methods developed by research groups and practitioners around the world. Experimental Methods in Wastewater Treatment forms part of the internet-based curriculum in wastewater treatment at UNESCO-IHE and, as

such, may also be used together with video records of experimental methods performed and narrated by the authors including guidelines on what to do and what not to do. The book is written for undergraduate and postgraduate students, researchers, laboratory staff, plant operators, consultants, and other sector professionals.

In economics, business, and government policy, innovation policy requires the creation of new approaches based on insight in what happens in innovation processes, on the micro level of people, firms and interaction between them. In innovation policy it should also be recognized that innovation entails a whole range of activities beyond R&D, such as entrepreneurship, design, commercialization, organization, collaboration and the diffusion of knowledge and innovations . This edited volume explores the roles of individuals and organizations involved in the creation and application of innovations. Covering topics as diverse as the macro-economic importance of innovation, theories of knowledge and learning, entrepreneurship, education and research, organizational innovation, networks and regional innovation systems, *Micro-Foundations for Innovation Policy* provides critical insights into the development of innovation policy.

Process engineering emerged at the beginning of the 20th Century and has become an essential scientific discipline for the matter and energy processing industries. Its success is incontrovertible, with the exponential increase in techniques and innovations. Rapid advances in new technologies such as artificial intelligence, as well as current societal needs – sustainable development, climate change, renewable energy, the environment – are developments that must be taken into account in industrial renewal. *Process Engineering Renewal 1* – the first volume of three – focuses on training, demonstrating the need for innovation in order for the field to have a framework that is sustainable, in a highly changeable world.

Biological Wastewater Treatment in Warm Climate Regions gives a state-of-the-art presentation of the science and technology of biological wastewater treatment, particularly domestic sewage. The book covers the main treatment processes used worldwide with wastewater treatment in warm climate regions given a particular emphasis where simple, affordable and sustainable solutions are required. This comprehensive book presents in a clear and informative way the basic principles of biological wastewater treatment, including theory and practice, and covering conception, design and operation. In order to ensure the practical and didactic view of the book, 371 illustrations, 322 summary tables and 117 examples are included. All major wastewater treatment processes are covered by full and interlinked design examples which are built up throughout the book, from the determination of wastewater characteristics, the impact of discharge into rivers and lakes, the design of several wastewater treatment processes and the design of sludge treatment and disposal units. The 55 chapters are divided into 7 parts over two volumes: *Volume One*: (1) Introduction to wastewater characteristics, treatment and disposal; (2) Basic principles of wastewater treatment; (3) Stabilisation ponds; (4) Anaerobic reactors; *Volume Two*:

(5) Activated sludge; (6) Aerobic biofilm reactors; (7) Sludge treatment and disposal. As well as being an ideal textbook, *Biological Wastewater Treatment in Warm Climate Regions* is an important reference for practising professionals such as engineers, biologists, chemists and environmental scientists, acting in consulting companies, water authorities and environmental agencies.

Fatigue of structures and materials covers a wide scope of different topics. The purpose of the present book is to explain these topics, to indicate how they can be analyzed, and how this can contribute to the designing of fatigue resistant structures and to prevent structural fatigue problems in service. Chapter 1 gives a general survey of the topic with brief comments on the significance of the aspects involved. This serves as a kind of a program for the following chapters. The central issues in this book are predictions of fatigue properties and designing against fatigue. These objectives cannot be realized without a physical and mechanical understanding of all relevant conditions. In Chapter 2 the book starts with basic concepts of what happens in the material of a structure under cyclic loads. It illustrates the large number of variables which can affect fatigue properties and it provides the essential background knowledge for subsequent chapters. Different subjects are presented in the following main parts: • Basic chapters on fatigue properties and predictions (Chapters 2–8) • Load spectra and fatigue under variable-amplitude loading (Chapters 9–11) • Fatigue tests and scatter (Chapters 12 and 13) • Special fatigue conditions (Chapters 14–17) • Fatigue of joints and structures (Chapters 18–20) • Fiber-metal laminates (Chapter 21) Each chapter presents a discussion of a specific subject.

This book reports new results in condensed matter physics for which topological methods and ideas are important. It considers, on the one hand, recently discovered systems such as carbon nanocrystals and, on the other hand, new topological methods used to describe more traditional systems such as the Fermi surfaces of normal metals, liquid crystals and quasicrystals. The authors of the book are renowned specialists in their fields and present the results of ongoing research, some of it obtained only very recently and not yet published in monograph form.

The ninth key stage 2 resource book in New Horizons Science 5-16 course.

The term 'transport phenomena' describes the fundamental processes of momentum, energy, and mass transfer. This text provides a thorough discussion of transport phenomena, laying the foundation for understanding a wide variety of operations used by chemical engineers. The book is arranged in three parallel parts covering the major topics of momentum, energy, and mass transfer. Each part begins with the theory, followed by illustrations of the way the theory can be used to obtain fairly complete solutions, and concludes with the four most common types of averaging used to obtain approximate solutions. A broad range of technologically important examples, as well as numerous exercises, are provided throughout the text. Based on the author's extensive teaching experience, a suggested lecture outline is also included. This book is intended for first-year graduate engineering students; it will be an equally useful reference for researchers in this field.

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