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Transport Phenomena Transport Phenomena Fundamentals Transport Phenomena Transport Phenomena Fundamentals of Transport Phenomena Transport Phenomena and Unit Operations A Modern Course in Transport Phenomena Transport Phenomena: Part II- Applications of transport phenomena, Part III- Transport property Advances in Transport Phenomena Analysis of Transport Phenomena Fundamentals of Transport Phenomena in Porous Media Advances in Transport Phenomena Elements of Transport Phenomena Computational Transport Phenomena Analysis Of Transport Phenomena Transport Phenomena Advanced Transport Phenomena Computational Transport Phenomena for Engineering Analyses Transport Phenomena Modelling in Transport Phenomena Transport Phenomena in Materials Processing Transport Phenomena in Multiphase Flows Transport Phenomena Advanced Transport Phenomena Advances in Transport Phenomena in Porous Media Transport Phenomena in Multiphase Systems Introduction to Transport Phenomena Introduction to Modeling of Transport Phenomena in Porous Media Modeling in Transport Phenomena Basic Transport Phenomena in Materials Engineering Transport Phenomena in Porous Media Mass

Transport Phenomena Transport Phenomena in Micro Process Engineering Modelling and Applications of Transport Phenomena in Porous Media An Introduction to Transport Phenomena in Materials Engineering Fundamentals of transport phenomena in porous media Transport Phenomena Transport Phenomena in Medicine and Biology Interfacial Transport Phenomena Transport Processes and Separation Technologies

Transport Phenomena

2001

the third edition of transport phenomena fundamentals continues with its streamlined approach to the subject of transport phenomena based on a unified treatment of heat mass and momentum transport using a balance equation approach the new edition makes more use of modern tools for working problems such as comsol maple and matlab it introduces new problems at the end of each chapter and sorts them by topic for ease of use it also presents new concepts to expand the utility of the text beyond chemical engineering the text is divided into two parts which can be used for teaching a two term course part i covers the balance equation in the context of diffusive transport momentum energy mass and charge each chapter adds a term to the balance equation highlighting that term s effects on the physical behavior of the system and the underlying mathematical description chapters familiarize students with modeling and developing mathematical expressions based on the analysis of a control volume the derivation of the governing differential equations and the solution to those equations with appropriate boundary conditions part ii builds on the diffusive transport balance equation by introducing convective transport terms focusing on partial rather than ordinary differential equations the text describes paring down the microscopic equations to simplify the models and solve problems and it introduces macroscopic versions of the balance equations for when the microscopic approach fails or is too cumbersome the text discusses the momentum

bernoulli energy and species continuity equations including a brief description of how these equations are applied to heat exchangers continuous contactors and chemical reactors the book also introduces the three fundamental transport coefficients the friction factor the heat transfer coefficient and the mass transfer coefficient in the context of boundary layer theory the final chapter covers the basics of radiative heat transfer including concepts such as blackbodies graybodies radiation shields and enclosures the third edition incorporates many changes to the material and includes updated discussions and examples and more than 70 new homework problems

Transport Phenomena Fundamentals

2014-01-23

this book teaches the basic equations of transport phenomena in a unified manner and uses the analogy between heat transfer and mass and momentum to explain the more difficult concepts part i covers the basic concepts in transport phenomena part ii covers applications in greater detail part iii deals with the transport properties the three transport phenomena heat mass and momentum transfer are treated in depth through simultaneous or parallel developments transport properties such as viscosity thermal conductivity and mass diffusion coefficient are introduced in a simple manner early on and then applied throughout the rest of the book advanced discussion is provided separately an entire chapter is devoted to the crucial material of non

newtonian phenomena this book covers heat transfer as it pertains to transport phenomena and covers mass transfer as it relates to the analogy with heat and momentum the book includes a complete treatment of fluid mechanics for ch e s the treatment begins with newton s law and including laminar flow turbulent flow fluid statics boundary layers flow past immersed bodies and basic and advanced design in pipes heat exchanges and agitation vessels this text is the only one to cover modern agitation design and scale up thoroughly the chapter on turbulence covers not only traditional approaches but also includes the most contemporary concepts of the transition and of coherent structures in turbulence the book includes an extensive treatment of fluidization computer programs and numerical methods are integrated throughout the text especially in the example problems

Transport Phenomena

2003-02

transport phenomena has been revised to include deeper and more extensive coverage of heat transfer enlarged discussion of dimensional analysis a new chapter on flow of polymers systematic discussions of convective momentum and energy topics also include mass transport momentum transport and energy transport which are presented at three different scales molecular microscopic and macroscopic if this is your first look at transport phenomena you ll quickly learn that its balanced introduction to the subject of transport phenomena is the foundation of its long standing

success

Transport Phenomena

2006-12-11

the subject of transport phenomena has long been thoroughly and expertly addressed on the graduate and theoretical levels now transport phenomena and unit operations a combined approach endeavors not only to introduce the fundamentals of the discipline to a broader undergraduate level audience but also to apply itself to the concerns of practicing engineers as they design analyze and construct industrial equipment richard griskey s innovative text combines the often separated but intimately related disciplines of transport phenomena and unit operations into one cohesive treatment while the latter was an academic precursor to the former undergraduate students are often exposed to one at the expense of the other transport phenomena and unit operations bridges the gap between theory and practice with a focus on advancing the concept of the engineer as practitioner chapters in this comprehensive volume include transport processes and coefficients frictional flow in conduits free and forced convective heat transfer heat exchangers mass transfer molecular diffusion equilibrium staged operations mechanical separations each chapter contains a set of comprehensive problem sets with real world quantitative data affording students the opportunity to test their knowledge in practical situations transport phenomena and unit operations is an ideal text for undergraduate engineering students as well as for

engineering professionals

Fundamentals of Transport Phenomena

1983-01-01

integrating nonequilibrium thermodynamics and kinetic theory this unique text presents a novel approach to the subject of transport phenomena

Transport Phenomena and Unit Operations

2005-01-14

the term transport phenomena is used to describe processes in which mass momentum energy and entropy move about in matter advances in transport phenomena provide state of the art expositions of major advances by theoretical numerical and experimental studies from a molecular microscopic mesoscopic macroscopic or megascopic point of view across the spectrum of transport p nomena from scientific enquiries to practical applications the annual review series intends to fill the information gap between regularly published journals and university level textbooks by providing in depth review articles over a broader scope than in journals the authoritative articles contributed by international leading scientists and practitioners establish the state of the art disseminate the latest research

discoveries serve as a central source of reference for fundamentals and applications of transport phenomena and provide potential textbooks to senior undergraduate and graduate students the series covers mass transfer fluid mechanics heat transfer and thermo namics the 2009 volume contains the four articles on biomedical environmental and nanoscale transports the editorial board expresses its appreciation to the c tributing authors and reviewers who have maintained the standard associated with advances in transport phenomena we also would like to acknowledge the efforts of the staff at springer who have made the professional and attractive pr entation of the volume serial editorial board editor in chief professor l q wang the university of hong kong hong kong lqwang hku hk editors professor a r balakrishnan indian institute of technology madras india professor a

A Modern Course in Transport Phenomena

2018-03-15

analysis of transport phenomena second edition provides a unified treatment of momentum heat and mass transfer emphasizing the concepts and analytical techniques that apply to these transport processes the second edition has been revised to reinforce the progression from simple to complex topics and to better introduce the applied mathematics that is needed both to understand classical results and to model novel systems a common set of formulation simplification and solution methods is applied

first to heat or mass transfer in stationary media and then to fluid mechanics convective heat or mass transfer and systems involving various kinds of coupled fluxes features explains classical methods and results preparing students for engineering practice and more advanced study or research covers everything from heat and mass transfer in stationary media to fluid mechanics free convection and turbulence improved organization including the establishment of a more integrative approach emphasizes concepts and analytical techniques that apply to all transport processes mathematical techniques are introduced more gradually to provide students with a better foundation for more complicated topics discussed in later chapters

Transport Phenomena: Part II- Applications of transport phenomena, Part III- Transport property

1988

this volume contains the lectures presented at the nato advanced study institute that took place at the university of delaware newark delaware july 18 27 1982 the purpose of this institute was to provide an international forum for exchange of ideas and dissemination of knowledge on some selected topics in mechanics of fluids in porous media processes of transport of such extensive quantities as mass of a phase mass of a component of a phase momentum and or heat occur in diversified fields such as petroleum reservoir

engineer ing groundwater hydraulics soil mechanics industrial filtration water purification wastewater treatment soil drainage and irri gation and geothermal energy production in all these areas scientists engineers and planners make use of mathematical models that describe the relevant transport processes that occur within porous medium domains and enable the forecasting of the future state of the latter in response to planned activities the mathe matical models in turn are based on the understanding of phenomena often within the void space and on theories that re late these phenomena to measurable quantities because of the pressing needs in areas of practical interest such as the develop ment of groundwater resources the control and abatement of groundwater contamination underground energy storage and geo thermal energy production a vast amount of research efforts in all these fields has contributed especially in the last t o decades to our understanding and ability to describe transport phenomena

Advances in Transport Phenomena

2009-10-15

the term transport phenomena is used to describe processes in which mass momentum energy and entropy move about in matter advances in transport phenomena provide state of the art expositions of major advances by theoretical numerical and experimental studies from a molecular microscopic mesoscopic macroscopic or megascopic point of view across the spectrum of transport phenomena from scientific enquiries to practical applications the annual

review series intends to fill the information gap between regularly published journals and university level textbooks by providing in depth review articles over a broader scope than in journals the authoritative articles contributed by internationally leading scientists and practitioners establish the state of the art disseminate the latest research discoveries serve as a central source of reference for fundamentals and applications of transport phenomena and provide potential textbooks to senior undergraduate and graduate students this review book provides state of the art expositions of major advances by theoretical numerical and experimental studies from a molecular microscopic mesoscopic macroscopic or megascopic point of view across the spectrum of transport phenomena from scientific enquiries to practical applications this new volume of the annual review advances in transport phenomena series provides in depth review articles covering the fields of mass transfer fluid mechanics heat transfer and thermodynamics this review book provides state of the art expositions of major advances by theoretical numerical and experimental studies from a molecular microscopic mesoscopic macroscopic or megascopic point of view across the spectrum of transport phenomena from scientific enquiries to practical applications this new volume of the annual review advances in transport phenomena series provides in depth review articles covering the fields of mass transfer fluid mechanics heat transfer and thermodynamics

Analysis of Transport Phenomena

2012

a clear user oriented introduction to the subject of computational transport phenomena first published in 1997

Fundamentals of Transport Phenomena in Porous Media

2012-12-06

advanced transport phenomena is ideal as a graduate textbook it contains a detailed discussion of modern analytic methods for the solution of fluid mechanics and heat and mass transfer problems focusing on approximations based on scaling and asymptotic methods beginning with the derivation of basic equations and boundary conditions and concluding with linear stability theory also covered are unidirectional flows lubrication and thin film theory creeping flows boundary layer theory and convective heat and mass transport at high and low reynolds numbers the emphasis is on basic physics scaling and nondimensionalization and approximations that can be used to obtain solutions that are due either to geometric simplifications or large or small values of dimensionless parameters the author emphasizes setting up problems and extracting as much information as possible short of obtaining detailed solutions of differential equations the book also focuses on the solutions of representative problems this reflects the book s goal of

teaching readers to think about the solution of transport problems

Advances in Transport Phenomena

2011-04-06

although computer technology has dramatically improved the analysis of complex transport phenomena the methodology has yet to be effectively integrated into engineering curricula the huge volume of literature associated with the wide variety of transport processes cannot be appreciated or mastered without using innovative tools to allow comprehen

Elements of Transport Phenomena

1972

enables readers to apply transport phenomena principles to solve advanced problems in all areas of engineering and science this book helps readers elevate their understanding of and their ability to apply transport phenomena by introducing a broad range of advanced topics as well as analytical and numerical solution techniques readers gain the ability to solve complex problems generally not addressed in undergraduate level courses including nonlinear multidimensional transport and transient molecular and convective transport scenarios avoiding rote memorization the author emphasizes a dual approach to learning in which physical understanding and problem

solving capability are developed simultaneously moreover the author builds both readers interest and knowledge by demonstrating that transport phenomena are pervasive affecting every aspect of life offering historical perspectives to enhance readers understanding of current theory and methods providing numerous examples drawn from a broad range of fields in the physical and life sciences and engineering contextualizing problems in scenarios so that their rationale and significance are clear this text generally avoids the use of commercial software for problem solutions helping readers cultivate a deeper understanding of how solutions are developed references throughout the text promote further study and encourage the student to contemplate additional topics in transport phenomena transport phenomena is written for advanced undergraduates and graduate students in chemical and mechanical engineering upon mastering the principles and techniques presented in this text all readers will be better able to critically evaluate a broad range of physical phenomena processes and systems across many disciplines

Computational Transport Phenomena

1997-08-13

modelling in transport phenomena a conceptual approach aims to show students how to translate the inventory rate equation into mathematical terms at both the macroscopic and microscopic levels the emphasis is on obtaining the equation representing a physical phenomenon and its

interpretation the book begins with a discussion of basic concepts and their characteristics it then explains the terms appearing in the inventory rate equation including rate of input and rate of output the rate of generation in transport of mass momentum and energy is also described subsequent chapters detail the application of inventory rate equations at the macroscopic and microscopic levels this book is intended as an undergraduate textbook for an introductory transport phenomena course in the junior year it can also be used in unit operations courses in conjunction with standard textbooks although it is written for students majoring in chemical engineering it can also serve as a reference or supplementary text in environmental mechanical petroleum and civil engineering courses

Analysis Of Transport Phenomena

2008-09-26

this text provides a teachable and readable approach to transport phenomena momentum heat and mass transport by providing numerous examples and applications which are particularly important to metallurgical ceramic and materials engineers because the authors feel that it is important for students and practicing engineers to visualize the physical situations they have attempted to lead the reader through the development and solution of the relevant differential equations by applying the familiar principles of conservation to numerous situations and by including many worked examples in each chapter the book is organized in a manner characteristic of other texts in transport phenomena section i

deals with the properties and mechanics of fluid motion section ii with thermal properties and heat transfer and section iii with diffusion and mass transfer the authors depart from tradition by building on a presumed understanding of the relationships between the structure and properties of matter particularly in the chapters devoted to the transport properties viscosity thermal conductivity and the diffusion coefficients in addition generous portions of the text numerous examples and many problems at the ends of the chapters apply transport phenomena to materials processing

Transport Phenomena

1960

this textbook provides a thorough presentation of the phenomena related to the transport of mass with and without electric charge momentum and energy it lays all the basic physical principles and then for the more advanced readers it offers an in depth treatment with advanced mathematical derivations and ends with some useful applications of the models and equations in specific settings the important idea behind the book is to unify all types of transport phenomena describing them within a common framework in terms of cause and effect respectively represented by the driving force and the flux of the transported quantity the approach and presentation are original in that the book starts with a general description of transport processes providing the macroscopic balance relations of fluid dynamics and heat and mass transfer before diving into the mathematical realm of continuum mechanics

to derive the microscopic governing equations at the microscopic level the book is a modular teaching tool and is used either for an introductory or for an advanced graduate course the last six chapters are of interest to more advanced researchers who might be interested in applications in physics mechanical engineering or biomedical engineering in particular this second edition of the book includes two chapters about electric migration that is the transport of mass that takes place in a mixture under the action of electro magnetic fields electric migration finds many applications in the modeling of energy storage devices such as batteries and fuel cells all chapters are complemented with solved exercises that are essential to complete the learning process

Advanced Transport Phenomena

2007-06-18

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

Computational Transport Phenomena for Engineering Analyses

2009-06-03

this volume contains the lectures presented at the nato advanced study institute that took place at newark delaware u s a july 14 23 1985 the objective of this meeting was to present and discuss selected topics associated with transport phenomena in porous media by their very nature porous media and phenomena of transport of extensive quantities that take place in them are very complex the solid matrix may be rigid or deformable elastically or following some other constitutive relation the void space may be occupied by one or more fluid phases each fluid phase may be composed of more than one component with the various components capable of interacting among themselves and or with the solid matrix the transport process may be isothermal or non isothermal with or without phase changes porous medium domains in which extensive quantities such as mass of a fluid phase component of a fluid phase or heat of the porous medium as a whole are being transported occur in the practice in a variety of disciplines

Transport Phenomena

2010-12-01

this book presents a collection of recent contributions in the field of transport phenomena in multiphase systems namely heat and mass transfer it discusses various topics related to the transport phenomenon in engineering including state of the art theory and applications and introduces some of the most important theoretical advances computational developments and technological applications in multiphase systems domain providing a self contained key reference that is appealing to scientists researchers and engineers alike at the same time these topics are relevant to a variety of scientific and engineering disciplines such as chemical civil agricultural and mechanical engineering

Modelling in Transport Phenomena

2002-08-15

professor william j thomson emphasizes the formulation of differential equations to describe physical problems helping readers understand what they are doing and why the solutions are either simple separable linear second order or derivable with a differential equation solver book jacket

Transport Phenomena in Materials

Processing

2016-12-06

the main purpose of this book is to provide the theoretical background to engineers and scientists engaged in modeling transport phenomena in porous media in connection with various engineering projects and to serve as a text for senior and graduate courses on transport phenomena in porous media such courses are taught in various disciplines e g civil engineering chemical engineering reservoir engineering agricultural engineering and soil science in these disciplines problems are encountered in which various extensive quantities e g mass and heat are transported through a porous material domain often the porous material contains several fluid phases and the various extensive quantities are transported simultaneously throughout the multiphase system in all these disciplines management decisions related to a system s development and its operation have to be made to do so the manager or the planner needs a tool that will enable him to forecast the response of the system to the implementation of proposed management schemes this forecast takes the form of spatial and temporal distributions of variables that describe the future state of the considered system pressure stress strain density velocity solute concentration temperature etc for each phase in the system and sometime for a component of a phase may serve as examples of state variables the tool that enables the required predictions is the model a model may be defined as a simplified version of the real porous medium system that approximately simulates the excitation response relations of

crestron tps 5000 user guide

the latter

Transport Phenomena in Multiphase Flows

2023-06-12

modeling in transport phenomena second edition presents and clearly explains with example problems the basic concepts and their applications to fluid flow heat transfer mass transfer chemical reaction engineering and thermodynamics a balanced approach is presented between analysis and synthesis students will understand how to use the solution in engineering analysis systematic derivations of the equations and the physical significance of each term are given in detail for students to easily understand and follow up the material there is a strong incentive in science and engineering to understand why a phenomenon behaves the way it does for this purpose a complicated real life problem is transformed into a mathematically tractable problem while preserving the essential features of it such a process known as mathematical modeling requires understanding of the basic concepts this book teaches students these basic concepts and shows the similarities between them answers to all problems are provided allowing students to check their solutions emphasis is on how to get the model equation representing a physical phenomenon and not on exploiting various numerical techniques to solve mathematical equations a balanced approach is presented between analysis and synthesis students will understand how to use the solution in engineering analysis systematic derivations of

the equations as well as the physical significance of each term are given in detail many more problems and examples are given than in the first edition answers provided

Transport Phenomena

1956

this book presents the basic theory and experimental techniques of transport phenomena in materials processing operations such fundamental knowledge is highly useful for researchers and engineers in the field to improve the efficiency of conventional processes or develop novel technology divided into four parts the book comprises 11 chapters describing the principles of momentum transfer heat transfer and mass transfer in single phase and multiphase systems each chapter includes examples with solutions and exercises to facilitate students learning diagnostic problems are also provided at the end of each part to assess students comprehension of the material the book is aimed primarily at students in materials science and engineering however it can also serve as a useful reference text in chemical engineering as well as an introductory transport phenomena text in mechanical engineering in addition researchers and engineers engaged in materials processing operations will find the material useful for the design of experiments and mathematical models in transport phenomena this volume contains unique features not usually found in traditional transport phenomena texts it integrates experimental techniques and theory both of which are required to adequately solve the inherently complex

problems in materials processing operations it takes a holistic approach by considering both single and multiphase systems augmented with specific practical examples there is a discussion of flow and heat transfer in microscale systems which is relevant to the design of modern processes such as fuel cells and compact heat exchangers also described are auxiliary relationships including turbulence modeling interfacial phenomena rheology and particulate systems which are critical to many materials processing operations

Advanced Transport Phenomena

1999-07-13

this monograph presents an integrated perspective of the wide range of phenomena and processes applicable to the study of transport of species in porous materials in order to formulate the entire range of porous media and their uses this book gives the basics of continuum mechanics thermodynamics seepage and consolidation and diffusion including multiscale homogenization methods the particular structure of the book has been chosen because it is essential to be aware of the true properties of porous materials particularly in terms of nano micro and macro mechanisms this book is of pedagogical and practical importance to the fields covered by civil environmental nuclear and petroleum engineering and also in chemical physics and geophysics as it relates to radioactive waste disposal geotechnical engineering mining and petroleum engineering and chemical engineering

Advances in Transport Phenomena in Porous Media

2012-12-06

molecular mass transport phenomena in fluids transport phenomena and the basic equations of change molecular mass transport phenomena in liquids mass transport phenomena in solids unsteady state diffusion mass transfer coefficients in laminar and turbulent flow interphase mass transport continuous two phase mass transport processes mass transport in state processes analog computer methods

Transport Phenomena in Multiphase Systems

2018-05-09

in this book the fundamentals of chemical engineering are presented with respect to applications in micro system technology microfluidics and transport processes within microstructures special features of the book include the state of the art in micro process engineering a detailed treatment of transport phenomena for engineers and a design methodology from transport effects to economic considerations

Introduction to Transport Phenomena

2000

transport phenomenain porous media are encounteredin various disciplines e g civil engineering chemical engineering reservoir engineering agricul tural engineering and soil science in these disciplines problems are en countered in which various extensive quantities e g mass and heat are transported through a porous material domain often the void space of the porous material contains two or three fluid phases and the various ex tensive quantities are transported simultaneously through the multiphase system in all these disciplines decisions related to a system s development and its operation have to be made to do so a tool is needed that will pro vide a forecast of the system s response to the implementation of proposed decisions this response is expressed in the form of spatial and temporal distributions of the state variables that describe the system s behavior ex amples of such state variables are pressure stress strain density velocity solute concentration temperature etc for each phase in the system the tool that enables the required predictions is the model a model may be defined as a simplified version of the real porous medium system and the transport phenomena that occur in it because the model is a sim plified version of the real system no unique model exists for a given porous medium system different sets of simplifying assumptions each suitable for a particular task will result in different models

Introduction to Modeling of Transport Phenomena in Porous Media

2012-12-06

an introduction to transport phenomena in materials engineering elucidates the important role of conduction convection and radiation heat transfer mass transport in solids and fluids and internal and external fluid flow in the behavior of materials processes these phenomena are critical in materials engineering because of the connection of transport to the evolution and distribution of microstructural properties during processing from making choices in derivation of fundamental conservation equations to using scaling order of magnitude analysis showing relationships among different phenomena to giving examples of how to represent real systems by simple models the book takes the reader through the fundamentals of transport phenomena applied to materials processing fully updated this third edition of a classic textbook offers a significant shift from the previous editions in the approach to this subject representing an evolution incorporating the original ideas and extending them to a more comprehensive approach to the topic the text introduces order of magnitude scaling analysis and uses it to quickly obtain approximate solutions for complicated problems throughout the book focuses on building models to solve practical problems adds new sections on non newtonian flows turbulence and measurement of heat transfer coefficients and offers expanded sections on thermal

resistance networks transient heat transfer two phase diffusion mass transfer and flow in porous media additional features more homework problems mostly on the analysis of practical problems and new examples from a much broader range of materials classes and processes including metals ceramics polymers and electronic materials includes homework problems for the review of the mathematics required for a course based on this book and connects the theory represented by mathematics with real world problems this text is aimed at advanced engineering undergraduates and students early in their graduate studies as well as practicing engineers interested in understanding the behavior of heat and mass transfer and fluid flow during materials processing while it is designed primarily for materials engineering education it is a good reference for practicing materials engineers looking for insight into phenomena controlling their processes a solutions manual lectures slides and figure slides are available for qualifying adopting professors

Modeling in Transport Phenomena

2007-07-17

fundamentals of transport phenomena in porous media

Basic Transport Phenomena in Materials Engineering

2013-09-12

this is an extensively revised second edition of interfacial transport phenomena a unique presentation of transport phenomena or continuum mechanics focused on momentum energy and mass transfer at interfaces it discusses transport phenomena at common lines or three phase lines of contact the emphasis is upon achieving an in depth understanding based upon first principles it includes exercises and answers and can serve as a graduate level textbook

Transport Phenomena in Porous Media

2012-02-10

this book presents recent research in the field of transport phenomena in porous materials including heat and mass transfer drying and adsorption covering a comprehensive range of topics related to the transport phenomenon in engineering including state of the art theory and technological applications it discusses some of the most important theoretical advances computational developments and applications in porous materials domain providing an update on the current state of knowledge this self contained reference resource will appeal to scientists researchers and engineers in a variety of disciplines such as chemical civil agricultural and mechanical engineering

Mass Transport Phenomena

1972

Transport Phenomena in Micro Process Engineering

2007-11-12

Modelling and Applications of Transport Phenomena in Porous Media

2012-12-06

An Introduction to Transport Phenomena in Materials Engineering

2023-11

Fundamentals of transport phenomena in porous media

1972-01-01

Transport Phenomena

1994

Transport Phenomena in Medicine and Biology

1975

Interfacial Transport Phenomena

2007-04-13

Transport Processes and Separation Technologies

2020-07-07

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