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<td>Mathematical Prediction of Effects of Gasoline Composition on Reid Vapor Pressure, Refueling Emissions and Their Reactivity - J. W. Shiller - 1986</td>
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**Characterization and Properties of Petroleum Fractions** - M. R. Riazi - 2005

The last three chapters of this book deal with application of methods presented in previous chapters to estimate various thermodynamic, physical, and transport properties of petroleum fractions. In this chapter, various methods for prediction of physical and thermodynamic properties of pure hydrocarbons and their mixtures, petroleum fractions, crude oils, natural gases, and reservoir fluids are presented. As it was discussed in Chapters 5 and 6, properties of gases may be estimated more accurately than properties of liquids. Theoretical methods of Chapters 5 and 6 for estimation of thermophysical properties generally can be applied to both liquids and gases; however, more accurate properties can be predicted through empirical correlations particularly developed for liquids. When these correlations are developed with some theoretical basis, they are more accurate and have wider range of applications. In this chapter some of these semitheoretical correlations are presented. Methods presented in Chapters 5 and 6 can be used to estimate properties such as density, enthalpy, heat capacity, heat of vaporization, and vapor
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**Applied Hydrocarbon Thermodynamics** - Wayne C. Edmister - 1988

**Thermodynamics** - Wayne C. Edmister - 1988

**Manual on Hydrocarbon Analysis** - -

**Manual on Hydrocarbon Analysis** - -

**Catalysis by Transition Metal Sulphides** - RAYBAUD Pascal - 2013-03-01
The main application of Transition Metal Sulphides (TMS) as solid catalysts is for production of clean fuels in petroleum refineries. The various feedstocks to be processed all contain more or less sulphur, included in highly stable heteroaromatic molecules. In order to meet the stringent specifications imposed worldwide nowadays on transportation fuels to reduce their environmental impact, catalytic hydroprocessing remains essential. In this process, sulphur is removed as H2S following the reaction between molecular hydrogen and the heteroaromatics. The reaction conditions and reaction medium composition
years of research. The preface provide stable catalysts, generally supported on alumina. Both for their fundamental and applied interest, these fascinating systems are still the subject of a very significant research effort, while major advances have been made over the past 30 years, involving innovative preparation routes, sophisticated surface science experiments for characterisation, detailed kinetic and mechanistic studies, and state of the art DFT simulations giving unprecedented insight into the local structure as well as elementary steps at microscopic level. This book aims at providing a complete, comprehensive and updated survey of the field, useful for anyone involved: the student starting a research project, the academic researcher or the refinery engineer willing to deepen their knowledge on the catalytic as well as on the process aspects. 37 specialists from IFP Energies nouvelles, CNRS, or French universities have contributed, reporting a unique synthesis of the last 15 written by Michèle Breysse, a well known leading scientist who devoted most of her fruitful career to this topic, puts this collective work into a meaningful historical perspective. Contents: Part 1. Fundamental Aspects: Insights from DFT calculations and experimental surface sciences. 1. Periodic trends in catalysis by sulphides. 2. Atomic scale structures of mixed lamellar sulphides. 3. Theoretical and microkinetic studies of hydrotreatment reactions. 4. Models of supported Co(Ni)MoS Catalysts. Part 2. Progress in the preparation and characterisation of industrial hydrotreating catalysts. 1. Principles involved in the preparation of hydrotreatment catalysts. 2. Progress in the preparation of new catalysts. 3. Progress in the preparation of catalysts with controlled acidity: case of aluminosilicate supports. 4. Activation and genesis of the active phase by sulidation. 5. Life cycle of an HDT catalyst. 6. Characterisation of catalysts. Part 3. Applications
The main application of Transition Metal Sulphides (TMS) as solid catalysts is for production of clean fuels in petroleum refineries. The various feedstocks to be processed all contain more or less sulphur, included in highly stable heteroaromatic molecules. In order to meet the stringent specifications imposed worldwide nowadays on transportation fuels to reduce their environmental impact, catalytic hydroprocessing remains essential. In this process, sulphur is removed as H2S between molecular hydrogen and the heteroaromatics. The reaction conditions and reaction medium composition are such that only TMS provide stable catalysts, generally supported on alumina. Both for their fundamental and applied interest, these fascinating systems are still the subject of a very significant research effort, while major advances have been made over the past 30 years, involving innovative preparation routes, sophisticated surface science experiments for characterisation, detailed kinetic and mechanistic studies, and state of the art DFT simulations giving unprecedented insight into the local structure as well as elementary steps at microscopic level. This book aims at providing a complete, comprehensive and updated survey of the field, useful for anyone involved: the student starting a research project, the academic researcher or the refinery engineer willing to deepen their knowledge on the catalytic as well as on the...

**Fossil Energy Update** - - 1983

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In recent years, intelligent control has emerged as one of the most active and fruitful areas of research and analysis of biological and industrial applications. Intelligent Control Systems Using Soft Computing Methodologies does all that and more. Beginning with an overview of intelligent control methodologies, the contributors present the fundamentals of neural networks, supervised and unsupervised learning, and recurrent networks. They address various implementation issues, then explore design and verification of neural networks for a variety of applications, including medicine, biology, digital signal processing, object recognition, computer networking, desalination technology, and oil refinery and chemical processes. The focus then shifts to fuzzy logic, with a review of the fundamental and theoretical aspects, discussion of implementation issues, and examples of applications, including control of autonomous underwater vehicles, image processing, robotics, and energy management systems. The book concludes with the integration of genetic algorithms into the paradigm of soft computing methodologies, including several more industrial examples, implementation issues, and open problems and open problems related to intelligent control technology. Suitable as a textbook or a reference, Intelligent Control Systems explores recent advances in the field from both the theoretical and the practical viewpoints. It also integrates intelligent control design methodologies to give designers a set of flexible, robust controllers and provide students with a tool for solving the examples and exercises within the book.

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Properties of Oils and
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**Petroleum Refiner** - - 1961

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**Hydrocarbon Processing & Petroleum Refiner** - - 1961

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**Acid Precipitation** - - 1986

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**Motor Gasolines** - - 1974

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**Methods and Applications of Intelligent Control** - S.G. Tzafestas - 2012-12-06

This book is concerned with Intelligent Control methods and applications. The field of intelligent control has been expanded very much during the recent years and a solid body of theoretical and practical results are now available. These results have been obtained through the synergetic fusion of concepts and techniques from a variety of fields such as automatic control, systems science, neurophysiology and operational research.

Intelligent control systems have to perform anthropomorphic tasks fully autonomously or interactively with the human under known or unknown and uncertain environmental conditions. Therefore the basic components of any intelligent control system include cognition, perception, learning, sensing, planning, numeric and symbolic processing, fault detection/repair, reaction, and control action. These components must be linked in a systematic, synergetic and efficient way. Predecessors of intelligent control are adaptive control, self-organizing control, and learning control which are well documented in the literature. Typical application examples of intelligent controls are intelligent robotic systems, intelligent manufacturing systems, intelligent medical systems, and intelligent space teleoperators. Intelligent controllers must employ both
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Handbook of Raman Spectroscopy - Ian R. Lewis - 2001-08-08
This work covers principles of Raman theory, analysis, instrumentation, and measurement, specifying up-to-the-minute benefits of Raman spectroscopy in a variety of industrial and academic fields, and how to cultivate growth in new disciplines. It contains case studies that illustrate current techniques in data extraction and analysis, as well as over 500 drawings and photographs that clarify and reinforce critical text material. The authors discuss Raman spectra of gases; Raman spectroscopy applied to crystals, applications to gemology, in vivo Raman spectroscopy, applications in forensic science, and collectivity of vibrational modes, among many other topics.

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"Written by engineers for engineers (with over 150 International Editorial Advisory Board members), this highly lauded resource provides up-to-the-minute information on the chemical processes, methods, practices, products, and standards in the chemical, and related, industries."

Statistical Postprocessing of Ensemble Forecasts - Stéphane Vannitsem - 2018-05-17
Statistical Postprocessing of Ensemble Forecasts brings together chapters contributed by international subject-matter experts describing the current state of the art in the statistical postprocessing of ensemble forecasts. The book illustrates the use of these methods in several important applications including weather, hydrological and climate forecasts, and renewable energy forecasting. After an introductory section on ensemble forecasts and prediction systems, the
second section of the book is devoted to exposition of the methods available for statistical postprocessing of ensemble forecasts: univariate and multivariate ensemble postprocessing are first reviewed by Wilks (Chapters 3), then Schefzik and Möller (Chapter 4), and the more specialized perspective necessary for postprocessing forecasts for extremes is presented by Friederichs, Wahl, and Buschow (Chapter 5). The second section concludes with a discussion of forecast verification methods devised specifically for evaluation of ensemble forecasts (Chapter 6 by Thorarinsdottir and Schuhen). The third section of this book is devoted to applications of ensemble postprocessing. Practical aspects of ensemble postprocessing are first detailed in Chapter 7 (Hamill), including an extended and illustrative case study. Chapters 8 (Hemri), 9 (Pinson and Messner), and 10 (Van Schaeybroeck and Vannitsem) discuss ensemble postprocessing specifically for postprocessing in support of renewable energy applications, and postprocessing of long-range forecasts from months to decades. Finally, Chapter 11 (Messner) provides a guide to the ensemble-postprocessing software available in the R programming language, which should greatly help readers implement many of the ideas presented in this book. Edited by three experts with strong and complementary expertise in statistical postprocessing of ensemble forecasts, this book assesses the new and rapidly developing field of ensemble forecast postprocessing as an extension of the use of statistical corrections to traditional deterministic forecasts. Statistical Postprocessing of Ensemble Forecasts is an essential resource for researchers, operational practitioners, and students in weather, seasonal, and climate forecasting, as well as users of such forecasts in fields involving renewable energy, conventional energy, hydrology, environmental
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Must-have reference for processes involving liquids, gases, and mixtures Reap the time-saving, mistake-avoiding benefits enjoyed by thousands of chemical and process design engineers, research scientists, and educators. Properties of Gases and Liquids, Fifth Edition, is an all-inclusive, critical survey of the most reliable estimating methods in use today --now completely rewritten and reorganized by Bruce Poling, John Prausnitz, and John O’Connell to reflect every late-breaking development. You get on-the-spot information for estimating both physical and thermodynamic properties in
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**Predicting Chemical Toxicity and Fate** - Mark T.D. Cronin - 2004-05-10
Quantitative Structure-Activity Relationships (QSARs) are increasingly used to predict the harmful effects of chemicals to humans and the environment. The increased use of these methods in a variety of areas (academic, industrial, regulatory) results from a realization that very little toxicological or fate data is available on the vast amount of chemicals to which humans and the environment are exposed. Predicting Chemical Toxicity and Fate provides a comprehensive explanation of the state-of-the-art methods that are available to predict the effects of chemicals on humans and the environment. It describes the use of predictive methods to estimate the physiochemical properties, biological chemicals. The methods described may be used to predict the properties of drugs before their development, and to predict the environmental effects of chemicals. These methods also reduce the cost of product development and the need for animal testing. This book fills an obvious need by providing a comprehensive explanation of these prediction methods. It is a practical book that illustrates the use of these techniques in real life scenarios. This book will demystify QSARs for those students unsure of them, and professionals in environmental toxicology and chemistry will find this a useful reference in their everyday working lives.

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**Ionic Liquids** - Scott Handy - 2017-02-22

Ionic liquids, including the newer subcategory of deep eutectic solvents, continue to attract a great deal of research attention in an even increasing number of areas, including traditional areas such as synthesis (organic and materials), electrochemistry, and physical property studies and predictions, as well as less obvious areas such as lubrication and enzymatic transformations. In this volume, recent advances in a number of these different areas are reported and reviewed, thus granting some appreciation for the future that ionic liquid research holds and affording inspiration for those who have not previously considered the application of ionic liquids in their area of interest.
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**Air Quality Criteria for Particulate Matter**
National Center for Environmental Assessment (Research Triangle Park, N.C.) - 1996

**A Positron Named Priscilla**
National Academy of Sciences - 1994-02-01
A Positron Named Priscilla is a book of wonder, offering a fascinating, readable overview of cutting-edge investigations by many of today's leading young scientists. Written for anyone who loves science, this volume reports on some of the most exciting recent discoveries and advances in fields from astronomy to molecular biology. This new book is from one of the world's most prestigious scientific institutions, the National Academy of Sciences. The Academy

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**Proceedings, Annual Convention**
Gas Processors Association - 1999
answers to the AIDS epidemic. Physics and our new-found ability to move and manipulate individual atoms on a surface. The book also tells the remarkable story of "buckyballs," or buckminsterfullerenenes, a form of carbon discovered only a few years ago, that have the potential to be used in a variety of important applications, from superconductivity to nanotechnology. Mathematics and the rise of "wavelet" theory, and how mathematicians are applying it in sometimes startling ways, from assisting the FBI with fingerprint storage to coaxing the secrets from a battered recording of Brahms playing the piano. Geosciences and the search for "clocks in the earth" to make life-saving earthquake predictions. A Positron Named Priscilla is a "must" read for anyone who wants to keep up with a broad range of scientific endeavor.

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**Artificial Intelligence and Data Driven Optimization of Internal Combustion Engines - Jihad Badra - 2022-01-21**

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### Advisory Committee for Aeronautics - United States. National Advisory Committee for Aeronautics - 1954


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**Process Analytical Technology** - Katherine A. Bakeev - 2010-04-01

Process Analytical Technology explores the concepts of PAT and its application in the chemical and pharmaceutical industry from the point of view of the analytical chemist. In this new edition all of the original chapters have been updated and revised, and new chapters covering the important topics of sampling, NMR, fluorescence, and acoustic chemometrics have been added. Coverage includes: Implementation of Process Analytical Technologies UV-Visible Spectroscopy for On-line Analysis Infrared Spectroscopy for Process Analytical Applications Process Raman Spectroscopy Process NMR Spectroscopy: Technology and On-line
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Applications Fluorescent Sensing and Process Analytical Applications Chemometrics in Process Analytical Technology (PAT) On-Line PAT Applications of Spectroscopy in the Pharmaceutical Industry Future Trends for PAT for Increased Process Understanding and Growing Applications in Biomanufacturing NIR Chemical Imaging This volume is an important starting point for anyone wanting to implement PAT and is intended not only to assist a newcomer to the field but also to provide up-to-date information for those who practice process analytical chemistry and PAT. It is relevant for chemists, chemical and process engineers, and analytical chemists working on process development, scale-up and production in the pharmaceutical, fine and specialty chemicals industries, as well as for academic chemistry, chemical engineering, chemometrics and pharmaceutical science research groups focussing on
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The only work to date to collect data gathered during the American and Soviet missions in an accessible and complete reference of current scientific and technical information about the Moon.

**Tools For Chemical**
Chemical product design has become increasingly important over the past decade and includes a wide range of sectors including gasoline additives and blends in the petroleum industry, active ingredients and excipients in the pharmaceutical industry, and a variety of consumer products and specialty chemicals. Traditionally, such products have been designed through trial and error methods, which not only are time-consuming, but more importantly only provide limited knowledge that can be translated into next generation products. Features an impressive collection of contributions from leading researchers in the field. Presents the latest tools available across a variety of industries. Describes the challenges involved in systematic product design as well as the latest methods for solving such problems. Covers a wide range of sectors including gasoline additives and blends in the petroleum industry, active ingredients and excipients in the pharmaceutical industry, and a variety of consumer products and specialty chemicals.

**Tools For Chemical Product Design** - Mariano Martín Martín - 2016-09-19
Tools for Chemical Product Design: From Consumer Products to Biomedicine describes the challenges involved in systematic product design across a variety of industries and provides a comprehensive overview of mathematical tools aimed at the design of chemical products, from molecular design to customer products.

**Tools For Chemical Product Design** - Mariano Martín Martín - 2016-09-19
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**On the Continuity of the Gaseous and Liquid States** - J. D. Van Der Waals - 2004-01-01
This much-cited thesis by J. D. van der Waals, the recipient of the 1910 Nobel Prize in physics, is accompanied by an introductory essay by J. S. Rowlinson and another work by van der Waals on the theory of liquid mixtures. 1988 edition.

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**Selected Technical Papers** - Ethyl Corporation - 1960

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Chemical Thermodynamics for Process Simulation
Jürgen Gmehling - 2019-06-10

The only textbook that applies thermodynamics to real-world process engineering problems. This must-read for advanced students and professionals alike is the first book to demonstrate how chemical thermodynamics work in the real world by applying them to actual engineering examples. It also discusses the advantages and disadvantages of the particular models and procedures, and explains the most important models that are applied in process industry. All the topics are illustrated with examples that are closely related to practical process simulation problems. At the end of each chapter, additional calculation examples are given to enable readers to extend their comprehension. Chemical Thermodynamics for Process Simulation instructs on the behavior of fluids for pure fluids, describing the main types of equations of state and their abilities. It discusses the various quantities of their correlation, and prediction in detail. Chapters look at the important terms for the description of the thermodynamics of mixtures; the most important models and routes for phase equilibrium calculation; models which are applicable to a wide variety of non-electrolyte systems; membrane processes; polymer thermodynamics; enthalpy of reaction; chemical equilibria, and more. - Explains thermodynamic fundamentals used in process simulation with solved examples - Includes new chapters about modern measurement techniques, retrograde condensation, and simultaneous description of chemical equilibrium - Comprises numerous solved examples, which simplify the understanding of the often complex calculation procedures, and discusses advantages and disadvantages of models and procedures - Includes estimation methods for thermophysical properties and phase equilibria thermodynamics of alternative
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Research and Application: condensation, and simultaneous description of chemical equilibrium - Comprises numerous solved examples, which simplify the understanding of the often complex calculation procedures, and discusses advantages and disadvantages of models and procedures - Includes estimation methods for thermophysical properties and phase equilibria thermodynamics of alternative separation processes - Supplemented with MathCAD-sheets and DDBST programs for readers to reproduce the examples Chemical Thermodynamics for Process Simulation is an ideal resource for those working in the fields of process development, process synthesis, or process optimization, and an excellent book for students in the engineering sciences.

Inorganic Carbon Compounds—Advances in Research and Application: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Inorganic Carbon Compounds. The editors have built Inorganic Carbon Compounds—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews™. You can expect the information about Inorganic Carbon Compounds in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Inorganic Carbon Compounds—Advances in Research and Application: 2012 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us.
Inorganic Carbon Compounds—Advances in Research and Application: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Inorganic Carbon Compounds. The editors have built Inorganic Carbon Compounds—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews™. You can expect the information about Inorganic Carbon Compounds in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of

Compounds—Advances in Research and Application: 2012 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Index to ASTM standards issued as last part of each vol.

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This research suggests two new group contribution methods to facilitate phase behavior calculation when reliable experimental data are lacking. The first method pertains to the implementation of an updated version of the Elliott and Natarajan method to the Statistical Associating Fluid Theory (SAFT) and Perturbed-Chain Statistical Associating Fluid Theory (PC-SAFT) equations of state. Shape factor parameters have been correlated for 878 compounds including different variety of families and the parameters from Elliott and Natarajan have been updated to improve accuracy for alcohols. Thereafter, thermodynamic properties such as boiling temperatures and vapor pressures have been predicted. We obtain 36%, 65%, and 32% AAD% in pressures for the ESD, SAFT, and PC-SAFT equations of state. Additionally, we have compared our GC-PC-SAFT to the one by Tihic et al., applying their suggested First-Order and Second-Order groups for 650 non-associating compounds. We observed higher accuracy for our method relative to the Tihic et al. The resulting P AAD% were 53% for Tihic FOG and 42% for Tihic SOG. The second method suggests a new group contribution model for Tb at 760mmHg and Tb at 10 mmHg. These correlations recognize a finite limit in boiling temperature as infinite molecular weight is approached. The availability of two vapor pressures enables straightforward application of the Clausius-Clapeyron equation to estimate boiling temperatures at other points. In the presented approach, there are 3 parameters and 72 functional groups for each temperature which are regressed through a database consisting of 336 hydrocarbons and 642 non-hydrocarbons. The average absolute percent deviations (AAD%) between the correlated and experimental
generally provide accuracy of in comparison with Joback-Reid and Gani approaches. We obtain 3.5, 4.7, and 4.1 AAD% in temperature for the present work, Joback, and Gani methods, respectively. Additionally, the accuracy of the present work is evaluated by calculating the vapor pressures from the DIPPR correlation at the predicted temperatures of each model. We obtained 33.2, 104.3 and 48.1 AAD% in pressure for the present work, Joback, and Gani methods. Finally, the accuracy of the presented correlations are tested against Asher and Pankow model, UNIFAC-PL°, for 66 volatile compounds in the temperature range of 290-320 K. For the vapor pressure at the 10mmHg boiling temperature, we obtain 36.9 AAD% for the present work and 94.5 AAD% for the Asher method. Overall, these group contribution methods establish a standard for comparison of more fundamental methods like molecular simulations with transferable potentials. Transferable potentials 10-30AAD% in pressure, but have only been developed for relatively small databases over narrow temperature ranges.

**Prediction of Thermodynamic Properties by Structure-based Group Contribution Approaches** - Fatemesadat Emami - 2008

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the key data required for
effect a standard for
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Transferable potentials
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relatively small databases
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**Petroleum Refinery Process Modeling** - Y. A. Liu
- 2018-02-09
A comprehensive review of
the theory and practice of the
simulation and optimization of
the petroleum refining
processes. *Petroleum Refinery Process Modeling* offers a
thorough review of how to
quantitatively model key
refinery reaction and
fractionation processes. The
text introduces the basics of
dealing with the
thermodynamics and physical
property predictions of
hydrocarbon components in
the context of process
modeling. The authors - three
experts on the topic - outline
the procedures and include
building reaction and
fractionation models with
commercial software. The text
shows how to filter through
the extensive data available at
the refinery and using plant
data to begin calibrating
available models and extend
the models to include key
fractionation sub-models. It
provides a sound and
informed basis to understand
and exploit plant phenomena
to improve yield, consistency,
and performance. In addition,
the authors offer information
on applying models in an
overall refinery context
through refinery planning
based on linear programming.
This important resource:
- Offers the basic information
  of thermodynamics and
  physical property predictions
  of hydrocarbon components in
  the context of process
  modeling
- Uses the key
  concepts of fractionation
  lumps and physical properties
to develop detailed models
  and workflows for
  atmospheric (CDU) and
  vacuum (VDU) distillation
  units
- Discusses modeling
  FCC, catalytic reforming and
fractionation models with commercial software. The text shows how to filter through the extensive data available at the refinery and using plant data to begin calibrating available models and extend the models to include key fractionation sub-models. It provides a sound and informed basis to understand and exploit plant phenomena to improve yield, consistency, and performance. In addition, the authors offer information on applying models in an overall refinery context through refinery planning based on linear programming. This important resource:

- Offers the basic information of thermodynamics and physical property predictions of hydrocarbon components in the context of process modeling
- Uses the key concepts of fractionation lumps and physical properties to develop detailed models and workflows for atmospheric (CDU) and vacuum (VDU) distillation units
- Discusses modeling FCC, catalytic reforming and hydروprocessing units

Written for chemical engineers,
spreadsheets and simulation engineers for measurement and control, this resource explores the advanced simulation tools and techniques that are available to support experienced and aid new operators and engineers.

**Refinery Engineering** - Ai-Fu Chang - 2013-03-01
A pioneering and comprehensive introduction to the complex subject of integrated refinery process simulation, using many of the tools and techniques currently employed in modern refineries. Adopting a systematic and practical approach, the authors include the theory, case studies and hands-on workshops, explaining how to work with real data. As a result, senior-level undergraduate and graduate students, as well as industrial engineers learn how to develop and use the latest computer models for the predictive modeling and optimization of integrated refinery processes. Additional material is available online providing relevant spreadsheets and simulation files for all the models and examples presented in the book.
Natural gas continues to be the fuel of choice for power generation and feedstock for a range of petrochemical industries. This trend is driven by environmental, economic and supply considerations with a balance clearly tilting in favor of natural gas as both fuel and feedstock. Despite the recent global economic uncertainty, the oil and gas industry is expected to continue its growth globally, especially in emerging economies. The expansion in LNG capacity beyond 2011 and 2012 coupled with recently launched and on-stream GTL plants poses real technological and environmental challenges. These important developments coupled with a global concern on green house gas emissions provide a fresh impetus to engage in new and more focused research activities aimed at mitigating or resolving the challenges facing the industry. Academic researchers and plant engineers in the gas processing industry will benefit from the state of the art papers published in this collection that cover natural gas utilization, sustainability and excellence in gas processing. Provides state-of-the-art contributions in the area of gas processing Covers solutions to technical and environmental problems Input from academia and industry
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**The Omen Machine** - Terry Goodkind - 2012-07-31
A deep underground machine awakens after thousands of years and foretells ominous events including a catastrophic prediction involving Richard Rahl and Kahlan Amnell.
