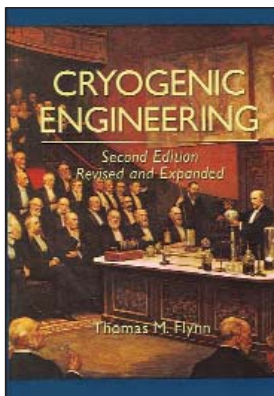


Books

Cryogenic Engineering, 2nd Edition

Thomas M. Flynn, Taylor & Francis/Marcel Dekker, New York, NY, 895 pp., \$229.95, 2005

Written by an engineering consultant with over 48 years of experience in the field, this second edition provides a reader-friendly and thorough discussion of the fundamental principles and science of cryogenic engineering, including the properties of fluids and solids, refrigeration and liquefaction, insulation, instrumentation, natural gas processing, and safety in cryogenic system design. The book contains

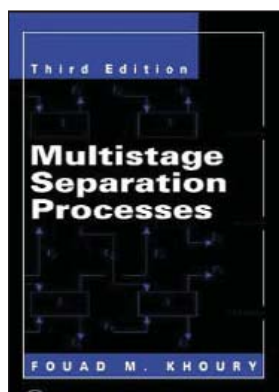


more than 125 new literature citations, over 130 new graphs and tables, and 230 pages of information not found in the first edition. It provides hundreds of charts and tables of cryogenic data unavailable elsewhere in the literature and illustrates key concepts in the text with sample workshop problems. This comprehensive reference offers valuable guidelines for cryogenic equipment selection and analysis. "It was written for a specific audience, namely the professional engineer or physicist, who needs to know some cryogenics to get his or her job done, but not necessarily make a career out of it."

Multistage Separation Processes, 3rd Edition

Fouad M. Khoury, CRC Press, Boca Raton, FL, 468 pp., \$189.95, 2005

The development of computer-aided simulation programs



for separation processes provides engineers with valuable tools to make more reliable quantitative and qualitative decisions in plant design and operation. Written by a specialist in modeling and optimization, this book accentuates performance prediction, an essential component of the efficient design and operation, of multistage separation processes. Unlike other books, this one emphasizes

computer modeling, expert interpretation of models, and it discusses modern simulation techniques. It presents rigorous mathematical models of separation processes, illustrated by numerous examples from a variety of applications. The author also shows how shortcut and graphical methods can be used to make preliminary and reliable decisions on action plans.

Distillation Theory and its Application to Design of Separation Units

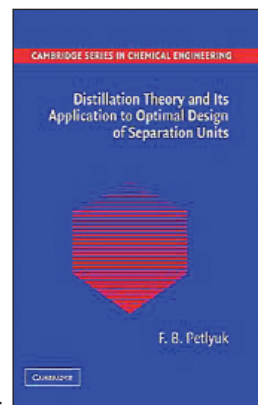
F. B. Petlyuk, Cambridge Series in Chemical Engineering, Cambridge University Press, New York, NY, 336 pp., \$95.00, 2005

This book presents a clear, multidimensional, geometric representation of distillation theory that is valid for all types of distillation columns for all splits, column types and mixtures. This representation answers such fundamental questions as:

- What are the feasible separation products for a given mixture?
- What is the minimum number of trays necessary to separate a given mixture at a fixed-power input?

• What is the minimum power required to separate a given mixture?

Methods of the general geometric theory of distillation, encoded in software, provide quick and reliable solutions to problems of flowsheet synthesis and to optimal design calculations. Distill Designer software allows refinement and confirmation of the algorithms of optimal design. A sample of the software is available at www.petlyuk.com. The book is intended for students and specialists in the design and operation of separation units in the chemical, pharmaceutical, food, wood, petrochemical, oil-refining, and natural gas industries, as well as for software designers.



Design of Experiments in Chemical Engineering

Zivorad R. Lazic, Wiley-VCH, Hoboken, NJ, 610 pp., \$230.00, 2005

While existing books related to design of experiments (DOE) are focused either on process or mixture factors, or analyze specific tools from DOE science, this text covers the three most common objectives of any experimental research: screening design; mathematical modeling; and optimization. Written in a simple and lively manner, and backed by current chemical product studies from around the world, this book elucidates basic concepts of statistical methods, experiment design and optimization techniques as applied to chemical engineering and chemistry. It features 441 tables, 250 diagrams, as well as 200 examples drawn from current chemical product studies.

