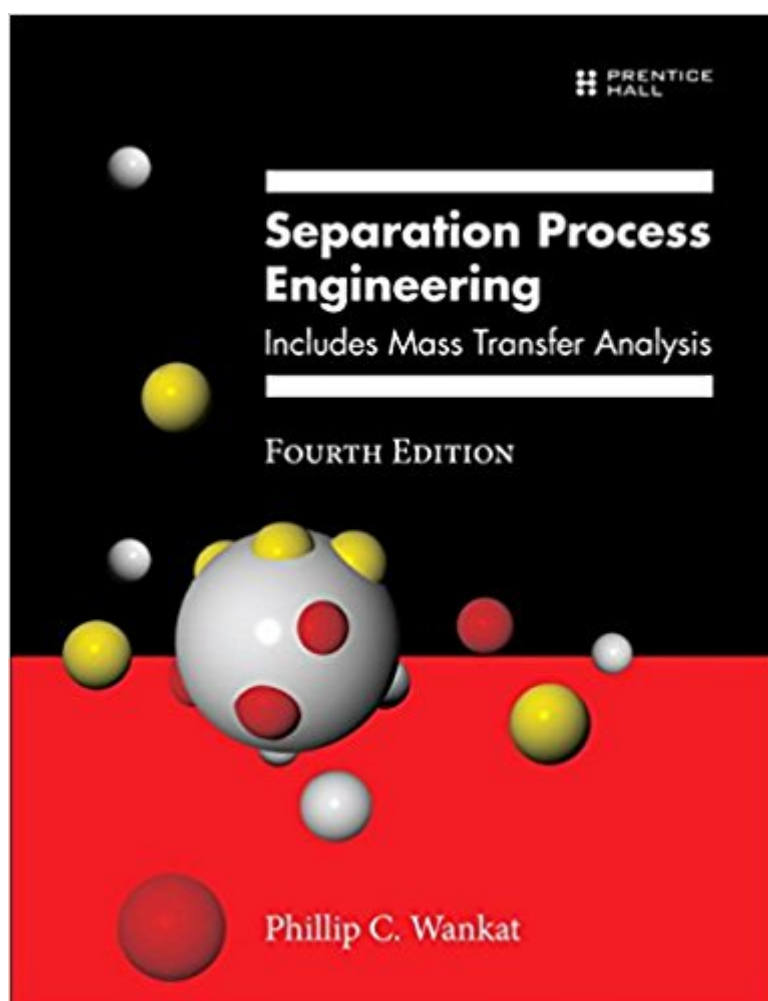


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# Separation Process Engineering: Includes Mass Transfer Analysis (4th Edition)



## Synopsis

The Definitive, Up-to-Date, Student-Friendly Guide to Separation Process Engineering – With More Mass Transfer Coverage and a New Chapter on Crystallization – Separation Process Engineering, Fourth Edition, is the most comprehensive, accessible guide available on modern separation processes and the fundamentals of mass transfer. In this completely updated edition, Phillip C. Wankat teaches each key concept through detailed, realistic examples using real data – including up-to-date simulation practice and spreadsheet-based exercises. – Wankat thoroughly covers each separation process, including flash, column, and batch distillation; exact calculations and shortcut methods for multicomponent distillation; staged and packed column design; absorption; stripping; and more. This edition provides expanded coverage of mass transfer and diffusion, so faculty can cover separations and mass transfer in one course. – Detailed discussions of liquid-liquid extraction, adsorption, chromatography, and ion exchange prepare students for advanced work. Wankat presents coverage of membrane separations, including gas permeation, reverse osmosis, ultrafiltration, pervaporation, and applications. An updated chapter on economics and energy conservation in distillation adds coverage of equipment costs. – This edition contains more than 300 new, up-to-date homework problems, extensively tested in undergraduate courses at Purdue University and the University of Canterbury (New Zealand). – Coverage includes

- New chapter on crystallization from solution, including equilibrium, chemical purity, crystal size distribution, and pharmaceutical applications
- Thirteen up-to-date Aspen Plus process simulation labs, adaptable to any simulator
- Eight detailed Aspen Chromatography labs
- Extensive new coverage of ternary stage-by-stage distillation calculations
- Fraction collection and multicomponent calculations for simple batch distillation
- New mass transfer analysis sections on numerical solution for variable diffusivity
- Mass transfer to expanding or contracting objects, including ternary mass transfer
- Expanded coverage of pervaporation
- Updated Excel spreadsheets offering more practice with distillation, diffusion, mass transfer, and membrane separation problems

## Book Information

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## Customer Reviews

Phillip C. Wankat is the Clifton L. Lovell Distinguished Professor of Chemical Engineering and Engineering Education at Purdue University. His research interests include adsorption, large-scale chromatography, simulated moving bed systems, distillation, and improvements in engineering education. He received Purdue University's highest faculty award, the Morrill Award, in 2016. With K. S. Knaebel, he contributed the Mass Transfer section to Perry's Chemical Engineers' Handbook, Eighth Edition (McGraw-Hill, 2008).

For a seps book, this wasn't bad at all. I'd recommend it. The whole book is in black and white with no pretty colorful pictures but its an engineering textbook so that's kind of how it is.

### Good Explanation

I simply ordered this book as a gift for my sister, who is in a mass transfer course for her chemical engineering program. It was a required book, and seems to do the trick, as it has been used since the first edition in that class. The book contains homework problems (which aren't used in the course, but my sister has done to solidify her understanding of the material) and, while being highly technical, explains concepts adequately. It's especially useful if required for your coursework. was definitely the cheapest place that I found it (at least compared to the school bookstore and online websites).

The methods/theories discussed here are important to modern clinical trials; especially when the tailored medicine is concerned. It can be a good reference for persons working on this area -- theory and application.

This books pretty good as far as ChemE text books go. There was enough theory backed by actually showing you examples on how to do the math. Of course it probably won't hurt if you go

look else where for clarification while taking your Mass Transfer class.I can't give it higher than three-stars however, when taking my unit operations lab when I went back to review the material from this book I found it difficult to accurately apply the techniques to separation processes which are not set up in the same manner as the examples within the book.This all may not matter since you'll be buying this for your mass transfer class one way or the other.

One of the more Valuable and easy to understand chemical engineering textbooks. I'm definitely going to hold on to this one.

A bit old school, some formulas are not written well, but content is good. Recommended as a support book for the course together with another book.

This book was everything I needed for my separations class. So many other people ordered the wrong book by mistake and this one was cheaper than in local bookstores!

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