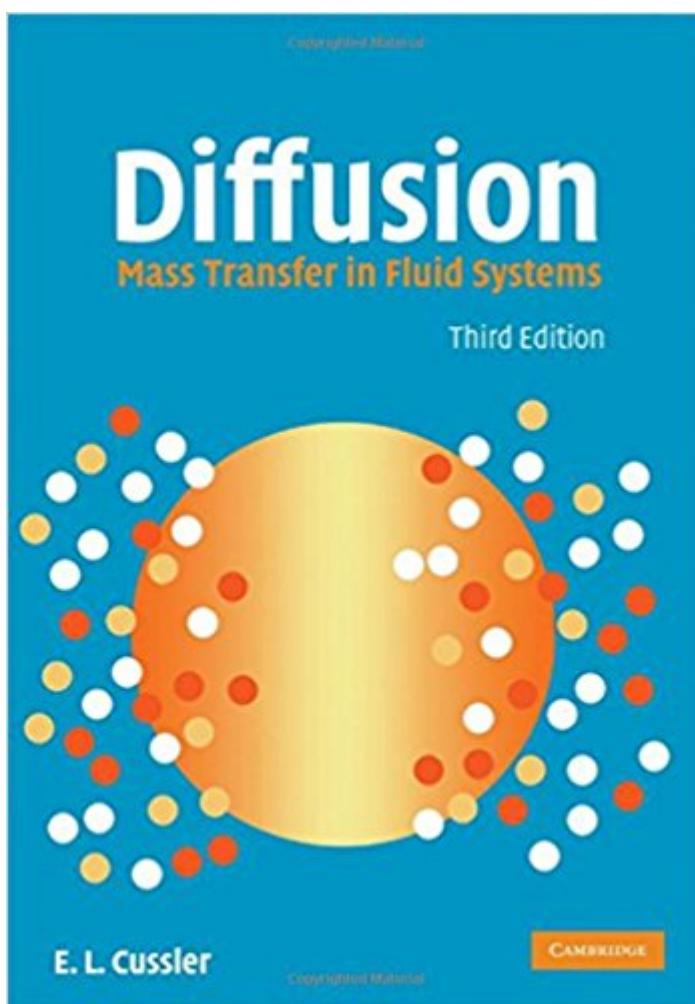


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Diffusion: Mass Transfer In Fluid Systems (Cambridge Series In Chemical Engineering)



Synopsis

This overview of diffusion and separation processes brings unsurpassed, engaging clarity to this complex topic. Diffusion is a key part of the undergraduate chemical engineering curriculum and at the core of understanding chemical purification and reaction engineering. This spontaneous mixing process is also central to our daily lives, with importance in phenomena as diverse as the dispersal of pollutants to digestion in the small intestine. For students, Diffusion goes from the basics of mass transfer and diffusion itself, with strong support through worked examples and a range of student questions. It also takes the reader right through to the cutting edge of our understanding, and the new examples in this third edition will appeal to professional scientists and engineers. Retaining the trademark enthusiastic style, the broad coverage now extends to biology and medicine.

Book Information

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Customer Reviews

."..I am very impressed with the lucid style, clarity of presentation, quality of the illustrative examples and the large number of very interesting problems appended at the end...I heartily recommend this book to anyone interested in diffusion in fluid systems." Canadian Chemical News --This text refers to an out of print or unavailable edition of this title.

This overview of diffusion and separation processes brings unsurpassed clarity to this complex topic. For students, Diffusion goes from the basics of mass transfer and diffusion itself, with strong support through worked examples and student questions. Retaining the trademark enthusiastic

style, the coverage now extends to biology and medicine.

I had Cussler as my Fluids professor. While it wasn't diffusion, the textbook is written in Cussler's language - when you read it, it's like you're hearing the man give you a drawn out lecture. There's a few Minnesota references (Go Gophers!) and a lot of content on diffusion and mass transfer. The textbook starts out with the fundamentals of diffusion - the small scale stuff. After you've struggled with diffusion coefficients, it gets into mass transfer and a lot of weird mass transfer scenarios. The end of the book is applications of mass transfer - distillation's the main one. There are tons of end of the chapter problems that are very abstract and can be really difficult to solve. There are some examples in the chapters, but they really don't help you solve the problems. If you can figure out Cussler's puzzles, this is the book you want to learn diffusion from. If not, Google the problems and someone else solved them for you.

I encountered Cussler's book after I worked through BSL, after I worked through Deen. I was fortunate to grasp the mathematics required to wrestle through those two tomes, but always had difficulty putting the bigger picture together for applications. The Cussler text opened my eyes, and made me fall in love with the subject. It is now the only transport text I reference regularly, and it is the first place I stop when I want to relearn an old subject. I was an advanced student when I read it, but highly recommend it to anybody wishing to strengthen their understanding of the subject. I would not use it as an introductory text for third/fourth year chemical engineering undergrads. I would jump at the opportunity to teach from it at an intermediate level, though. The focus on applications and intuition over rote mathematics is in-line with the 'real world' of mass transport, which was lost on me when I was spending hours upon hours working the math of BSL and Deen.

The standard in the field, at a good softcover price.

I like the approach the author takes and the emphasis he places in understanding the physics rather than throwing endless diff equations at the reader. The book needs a revision, though.. Quite a few mistakes in the text and solutions to the problems.

Many of the problems I've solved from the back of the chapters for my Mass Transfer and Separations course have been vague, and some even lacked critical information needed to solve the problem. I have found no need continue reading the chapters as this text is a bit dry and

verbose. While some of the examples placed in the chapter are useful, many lack full derivations so the equations are difficult to follow.

Diffusion? This is a nice book.

Good condition. Just as stated in the announcement.

I'm one of Cussler's students at Minnesota. This book is but a mere accessory to CHEN8301: Physical Rate Processes, the graduate course that we take here, and I wish I could share that magical experience with everyone. It really puts this text into perspective as not a go-to handbook, but rather a map for a foray into the world of mass transfer led by one of its greatest navigators. Nevertheless, this text as-read is much less inspiring than the author delivering it in the flesh, so I guess I have high expectations to even give the map 4 stars. As a theory text, it's often lacking. But, Cussler always preaches the message that theory is only useful if it can be practically applied to industrial process and experiment. Nothing echoes that message louder than Diffusion. So if you came to hear the tale of theory, take the 5 hour trip down the road to Madison and pick up BSL.

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