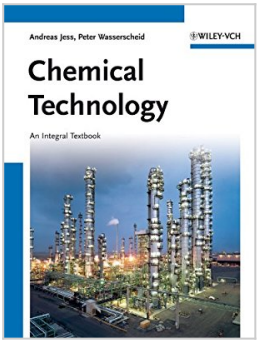

Chemical Technology: An Integral Textbook

By Andreas Jess, Peter Wasserscheid

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This textbook provides an integral and integrated treatment of industrial-relevant problems for students of both chemistry and chemical engineering.

As such, this work combines the four disciplines of chemical technology - chemistry, thermal and mechanical unit operations, chemical reaction engineering and general chemical technology - and is organized into two main parts. The first covers the fundamentals, as well as the analysis and design of industrial processes, while the second section presents 20 concrete processes, exemplifying the inherent applied nature of chemical technology. These are selected so that they all differ with respect to at least one important aspect, such as the type and design of the reactor, the chemistry involved or the separation process used. As a result, readers will recapitulate, deepen and exercise the chemical and engineering principles and their interplay, as well as being able to apply them to industrial practice.

Instructive figures, rules of thumb for swift but reliable estimating of parameters, data of chemical media, and examples utilizing data from industrial processes facilitate and enhance the study process. A small general survey of selected modern trends, such as multifunctional and micro reactors, or new solvents for homogeneous catalysis, such as ionic liquids, point out to the reader that this is not a concluded discipline,
but a developing field with many challenges waiting to be solved.

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- Rank: #2348416 in eBooks
- Published on: 2013-03-11
- Released on: 2013-03-11
- Format: Kindle eBook

Editorial Review

Review
“This is an excellent book. The authors have set themselves a daunting task: combining in one volume the basics of industrial chemistry, physical chemistry, catalysis, and chemical engineering. The result is a highly readable and useful textbook that covers all the fundamental aspects of technical chemistry and fits well with today’s curricula… There are several other good textbooks that target one or more of the specific subjects…, but this is the first well written and clearly presented comprehensive textbook on modern chemical technology. In summary, this book is timely, useful, well thought out and well presented. It contains lots of useful knowledge. I highly recommend it to teachers of chemical technology, to senior undergraduates and graduate students in chemistry who are interested in the industrial aspects of their profession, and of course to chemical engineers.” –Angewandte Chemie, Int. Ed. 2013

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About the Author
Andreas Jess studied at the Technical University of Aachen. He obtained his PhD and habilitation from the University of Karlsruhe for his work on syngas formation and up-grading of raw coke-oven gas. In 1998 he became professor for technical chemistry in Aachen. Since 2001 he is owner of the chair of Chemical Engineering at the University of Bayreuth. His research interests are the optimization and modeling of catalytic processes, utilization of ionic liquids, and processes for production of fuels and chemicals from fossil and renewable resources.

Peter Wasserscheid studied chemistry at the Technical University of Aachen and obtained his PhD for the work on the use of ionic liquids. After a postdoc at BP Chemicals in Great Britain Wasserscheid returned to Aachen. In 2001 he became Scientific Supervisor of the Solvent Innovation Company and since 2003 he owns the chair of Chemical Reaction Engineering at the University of Erlangen-N?rnberg.
At present he researches the development of concepts for highly selective catalytic processes. He has received several awards including the Max-Buchner-Award of DECHEMA (2001), the Innovation Award of the German Economy (2003, together with Solvent Innovation GmbH, Cologne) and the Leibniz Award of the German Science Foundation (2006).

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