图书基本信息

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前言

This book is intended to be the text for a course in thermodynamics for undergrad-uate students in chemical engineering. It has been used in this manner at the University of Delaware for more than twenty years, originally as a course for third-yearstudents and currently for sophomores. I had two objectives in writing the first edi-tion of this book, which have been retained in the succeeding editions. The first wasto develop a modern applied thermodynamics text especially for chemical engineering students, that was relevant to other parts of the curriculum, specifically courses in separations processes, chemical reactor analysis, and process design. The otherobjective was to organize and present material in sufficient detail, and in such a waythat the student obtained a good understanding of the principles of thermodynamics, and a proficiency in applying these principles to the solution of a large variety of energy flow and equilibrium problems. Since the first two editions largely met these goals, and the principles of thermo-dynamics have not changed in the last decade, this edition is similar in structure to the earlier ones. However, there have been three important changes in engineeringeducation in the recent decades. The first is the availability of powerful desktop com-puters. The second is greater concerns about safety and the environment. The third is the application of chemical engineering principles to new technology areas suchas biotechnology, polymers, solidstate processing, etc. In the current edition of thistext I have made changes to address each of these issues. The availability of desktop computers and equationsolving software has nowmade it possible to bring engineering science, industrial practice, and undergraduateeducation much closer together. In particular, students in their dormitory rooms orat home can now perform sophisticated thermodynamics and phase equilibrium cal-culations similar to those that they will encounter in industry. I provide two differentways to accomplish this.

内容概要

本书强调通过专业英语学习,建立和充实专业知识框架。教材分为"化学工业"、"化工工艺简介" 、"化学工程"和"化工前沿领域"四大部分,有利专业英语教师进行主题教学。每个单元选用的原 版专著和论文均达10处以上,语言丰富,有关化学工程和工艺的英语词汇反复出现。教材选用的语言 材料新(大部分为90年代出版物)、范围广(选自国外40余种专著、教科书、专业期刊等)。学生可 以通过学习这些材料,从各个层面上接触和深化主题,使基础比较差的学生得到明显提高,使基础比 较好的学生能提高语言应用的熟练程度。与教材配套的教师参考资料随书赠送交流,已受到使用该教 材的20余所高校有关教师的欢迎,并提供配套教辅材料。本教材提供了化学工程与工艺专业的比较丰 富的语言材料,教师可以根据实际情况,加以深化处理,借以提高学生在专业英语方面听、说、写的 能力。



作者简介

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章节摘录

插图:

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