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Abstract

The purpose of this book is to present the physical processes of chemical engineering, with an emphasis on the computational tools currently available for describing, analyzing, and designing these processes. The textbook covers all basic physical processes, and in more detail heat transfer, evaporation, drying, distillation, gas absorption, extraction, crystallization, and adsorption. Information is also provided on membrane separation and energy recovery/conservation issues. Each chapter includes the theoretical background of the process under consideration, its basic applications, and a brief description of the equipment used in industry to implement it. Each chapter develops in detail

a comprehensive application of the model to a specific production process, with the development of the model in a spreadsheet. The application (for each chapter) accompanies the textbook and enables the reader/user to gain a comprehensive picture of the development and configuration of the models and their functionality in the form of spreadsheets, and, on the other hand, to modify problem data and obtain new sets of solution values. It should be noted that only in recent years have a number of Chemical Engineering textbooks been published with an emphasis on modern computational methods, but none have been written in Greek, and this is the innovative character of this textbook.

