

1. Record Nr.	UNINA9911004742103321
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Titolo	Industrial Separation Processes : Fundamentals / / André B de Haan, Hans Bosch
Pubbl/distr/stampa	Berlin ; ; Boston : , : De Gruyter, , [2013] ©2013
ISBN	9781628708875 1628708875 9783110306729 3110306727
Descrizione fisica	1 online resource (384 p.)
Collana	De Gruyter Textbook
Disciplina	660.2842 660/.2842
Soggetti	Chemistry, Technical Separation (Technology)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Frontmatter -- Preface -- Contents -- 1 Characteristics of separation processes -- 2 Evaporation and distillation -- 3 Absorption and stripping -- 4 General design of gas/liquid contactors -- 5 Liquid-liquid extraction -- 6 Adsorption and ion exchange -- 7 Drying of solids -- 8 Crystallization and precipitation -- 9 Sedimentation and settling -- 10 Filtration -- 11 Membrane filtration -- 12 Separation method selection -- Appendix -- Answers to exercises -- References and further reading -- Index
Sommario/riassunto	Separation operations are crucial throughout the process industry with respect to energy consumption, contribution to investments and ability to achieve the desired product with the right specifications. Our main objective in creating this graduate level textbook is to present an overview of the fundamentals underlying the most frequently used industrial separation methods. We focus on their physical principles and the basic computation methods that are required to assess their technical and economical feasibility. The textbook is organized into three main parts. Separation processes for homogeneous mixtures are

treated in the parts on equilibrium based molecular separations and rate-controlled molecular separations. The part on mechanical separation technology presents an overview of the most important techniques for heterogeneous mixture separation. Each chapter provides a condensed overview of the most commonly used equipment types. The textbook is concluded with a final chapter on the main considerations in selecting an appropriate separation process for a separation task. As the design of separation processes can only be learned by doing, we have included exercises at the end of each chapter. Short answers are given at the end of this book; detailed solutions are given in a separate solution manual.
