1. Record Nr. UNINA9910820392303321 Autore Aida Takashi Titolo Cyclic separating reactors / / Takashi Aida, Peter L. Silveston Pubbl/distr/stampa Ames, Iowa, : Blackwell Pub., 2005 **ISBN** 9786611320195 9781281320193 1281320196 9780470988688 0470988681 9780470994177 0470994177 Edizione [1st ed.] Descrizione fisica 1 online resource (402 p.) Altri autori (Persone) SilvestonPeter L Disciplina 660/.2842 Separation (Technology) Soggetti Chemistry, Technical Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references (p. [353]-367) and indexes. Nota di contenuto Cyclic Separating Reactors; Contents; About the Authors; Preface; Acknowledgments; I: INTRODUCTION; 1 Separating Reactors; 1.1 What are they?: 1.2 Process intensification and multifunctionality: 1.3 Potential advantages of separating reactors; 1.4 The trapping reactor; 1.5 Some examples of separating reactors; 2 Periodic Operation; 2.1 Operation options for periodic separating reactors: 2.1.1 Constraints on options; 2.1.2 Establishing periodic operation; 2.1.3 Reactor type and effect; 2.1.4 Manipulated inputs; 2.2 Characteristics of periodic process; 2.2.1 Cycle structure 2.2.2 Transients and the cyclic stationary state2.2.3 Frequency behavior; 2.2.4 Amplitude behavior; 2.2.5 Phase lag; 2.2.6 Complications; 2.3 Advantages of periodic processes and basis for choice; 2.3.1 Process enhancement; 2.3.2 Process stability; 2.3.3 Online optimization; 2.3.4 Problems with periodic operation; 2.4 Movingbed systems; 2.5 Neglect of periodic processes; II: CHROMATOGRAPHIC

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## Sommario/riassunto

Cyclic Separating Reactors is a critical examination of the literature covering periodically operated separating reactors incorporating an adsorbent as well as a catalyst, aiming to establish the magnitude of performance improvement available with this type of reactor compared to systems in which the reactor and separator are separate units. The adequacy of present models is considered by comparison of simulation and experimental studies, and gaps in understanding or experimental verification of model predictions are identified. Separating reactors, including chromatographic react