Title: A strategy to extend reactive distillation column performance under catalyst deactivation

Author(s): Filipe, Rui M.; Matos, Henrique A.; Novais, Augusto Q.

Source: 21st European Symposium on Computer Aided Process Engineering

Book Series: Computer-Aided Chemical Engineering

Volume: 29 Pages: 241-245 Published: 2011

Document Type: Proceedings Paper

Language: English

Abstract: This work addresses the effects of catalyst deactivation and investigates methods to reduce their impact on the reactive distillation columns performance. The use of variable feed quality and reboil ratio are investigated using a rigorous dynamic model developed in gPROMS and applied to an illustrative example, i.e., the olefin metathesis system, wherein 2-pentene reacts to form 2-butene and 3-hexene. Three designs and different strategies on column energy supply to tackle catalyst deactivation are investigated and the results compared.

Author Keywords: Reactive Distillation; Catalyst Deactivation; Feed Quality; Modeling; Simulation

KeyWords Plus: Feasible Regions; Design

Reprint Address: Filipe, RM (reprint author), Inst Super Engn Lisboa, Area Dept Engn Quim, R Conselheiro Emídio Navarro 1, P-1959007 Lisbon, Portugal.

Addresses:
1. Inst Super Engn Lisboa, Area Dept Engn Quim, P-1959007 Lisbon, Portugal

Publisher: Elsevier Science BV

Publisher Address: Sara Burgerhartstraat 25, Po Box 211, 1000 AE Amsterdam, Netherlands

ISSN: 1570-7946

ISBN: 978-0-444-53895-6