

عنوان مقاله:

Modeling, simulation and control of a tubular fixed-bed dimethyl ether reactor

محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

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نویسندگان:

Elham Yasari - *Department of Chemical & Petroleum Engineering, Sharif University of Technology, Tehran, Iran*

Mohammad Shahrokhi - *Department of Chemical & Petroleum Engineering, Sharif University of Technology, Tehran, Iran*

خلاصه مقاله:

In this paper modeling and control of a tubular fixed bed reactor with recycle stream for dimethyl ether (DME) production has been considered. A pseudo homogeneous model is used for simulating the process. Reactor behavior is modeled using reaction kinetics and conservation laws. For cooling the reactor a steam drum is coupled with the reactor which uses the heat of reaction to produce steam. Two control loops are considered for controlling the reactor temperature and steam drum level. Controllers are conventional PI controllers. By defining an objective function, the DME production is maximized and the optimum shell temperature is obtained.

کلمات کلیدی:

Dimethyl ether, Dynamic modelling, Optimization, Fixed bed reactor

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