عنوان مقاله:

Investigation of the performance of a fuzzy logic controller in control of a methanol-water distillation column

محل انتشار:

نهمین کنگره ملی مهندسی شیمی ایران (سال: 1383)

تعداد صفحات اصل مقاله: 13

نویسندگان:

Ali Farzi - *Chemical Engineering Department, Isfahan University of Technology, Isfahan*

Arjomand Mehrabani - *Chemical Engineering Department, Isfahan University of Technology, Isfahan*

خلاصه مقاله:

A fuzzy logic controller similar to a proportional controller, with different types of membership functions is implemented on a distillation system and the performances of these membership functions were compared to each other and to traditional proportional and proportional-integral controllers. It is evident that a fuzzy logic controller with Gaussian membership function responds more rapidly to a step change in the set point of methanol concentration in top product of the distillation column. The offset is very small. The effect of the boundaries of input and output membership functions is tested. Extending the boundaries results in a smaller rise time for responses, but the system goes into instability. The effect of extending boundaries of membership functions is similar to rising gain of a proportional controller.

کلمات کلیدی:

Fuzzy sets, Fuzzy logic controller, Membership functions, Distillation column, Simulation

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/29754