عنوان مقاله:

Using PERVAPÒ 2201 Membrane in Vapor Permeation Facilitated Isopropanol Propionate Production through Esterification Reaction

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 6

نویسندگان:

E Ameri, - *Department of Chemical Engineering, Isfahan University of Technology*

A Moheb, - *Department of Chemical Engineering, Isfahan University of Technology*

خلاصه مقاله:

A commercial flat polymeric membrane (PERVAPÒ 2201) was employed in vapor permeation process to selectively remove water from the reaction atmosphere during the synthesis of isopropyl propionate from iso-propanol and propionic acid. .The reaction was carried out in a batch reactor with 3 wt.% para toluene sulfonic acid (respect to acid) as catalyst. Three values of alcohol/acid molar ratio (1:1, 1.5:1 and 3:1) were used in these experiments respectively. The polymeric membrane worked stably for the long period, because of contacting with only the volatile components, namely water and isopropanol. This combination of the chemical reaction with the vapor permeation process enhanced the conversion of the reversible esterification reaction, where in a set of experiments almost complete conversion was achieved after only 140 minutes. Also results revealed that initial molar ratio of the reactants had strong effects on the values of acid conversion and flux of permeated water through the membrane.

کلمات کلیدی:

Esterification, Membrane Reactor, Isopropyl Propionate, Polymeric Membrane

لینک ثابت مقاله در پایگاه سیویلیکا: