

## عنوان مقاله:

The simultaneous effect of different fluxes and enzymes in a membrane system containing cherry juice: membrane fouling assessment

## محل انتشار:

هفدهمین کنگره ملی مهندسی شیمی ایران (سال: 1400)

تعداد صفحات اصل مقاله: 5

## نویسندگان:

Neda Rahaei - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

Ali Hashemi - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

Soroush Azizi - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

Monire Moslemi - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

Mosayeb Mohammadi - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

Farshid Pajoum Shariati - *Chemical Engineering Department, Islamic Azad University, Science and Research branch of Tehran, Iran*

## خلاصه مقاله:

Nowadays, diminishing fouling issue through membrane systems are one the biggest challenges in the industry. In this study, the simultaneous effect of two fluxes  $8.62$  and  $17.24 \text{ L m}^{-2} \text{ h}^{-1}$  and two enzymes pectinase and protease on the fouling subject in the designed membrane system were analyzed. The results depicted that when the flux values rose two-fold (from  $8.62$  to  $17.24 \text{ L m}^{-2} \text{ h}^{-1}$ ) the ratios of cake hydraulic resistance (RC) to total hydraulic resistance (Rt) were increased  $31\%$  and  $10\%$  for no-enzyme and with-enzyme streams, respectively. These rises were so severe in the ratios of pore-blockings (RC) to total resistances (Rt) with almost  $27\%$  and  $108\%$  for  $8.62$  and  $17.24 \text{ L m}^{-2} \text{ h}^{-1}$  fluxes, respectively. Likewise, using enzymes caused a decrease in the RC/Rt ratios for about  $46\%$  and  $54\%$ , respectively. However, applying these enzymes led to a  $3.45$ -fold and  $6.28$ -fold rise when the flux was raised from  $8.62$  and  $17.24 \text{ L m}^{-2} \text{ h}^{-1}$ .

## کلمات کلیدی:

.Cherry Juice, Membrane, Clarification, Fouling

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1378414>

