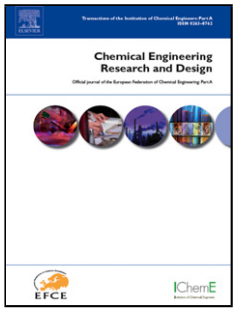
Accepted Manuscript



Title: A kinetic model for calculating total membrane fouling resistance in chemical cleaning process

Authors: Lei Hou, Kui Gao, Ping Li, Ximing Zhang, Zhan Wang, Peng Song, Wei Yao

PII: S0263-8762(17)30558-0
DOI: https://doi.org/10.1016/j.cherd.2017.10.004
Reference: CHERD 2844

To appear in:

Received date: 7-2-2017
Revised date: 3-9-2017
Accepted date: 3-10-2017

Please cite this article as: Hou, Lei, Gao, Kui, Li, Ping, Zhang, Ximing, Wang, Zhan, Song, Peng, Yao, Wei, A kinetic model for calculating total membrane fouling resistance in chemical cleaning process.Chemical Engineering Research and Design https://doi.org/10.1016/j.cherd.2017.10.004

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

A kinetic model for calculating total membrane fouling resistance in chemical cleaning process

Lei Hou, Kui Gao, Ping Li, Ximing Zhang, Zhan Wang[*]*,Peng Song, Wei Yao*

Beijing Key Laboratory for Green Catalysis and Separation, Department of Chemistry and Chemical Engineering, Beijing University of Technology, Beijing 100124, P.R. China.

[*] Corresponding author. Tel.: +861067396186; fax:+8610 67391983.
Emails: wangzhan3401@163.com (Z. Wang).

Highlights:

- A kinetic model with three variables for chemical cleaning was established
- Good model prediction in total fouling resistance during chemical cleaning
- Potential engineering tool to optimize chemical cleaning conditions

Abstract:

In this study, a kinetic model was developed based on Hom–Haas model to describe the total membrane fouling resistance ($R_{tf}(t)$) during the chemical cleaning process of 0.1 μm PAN microfiltration (MF) membrane fouled with activated sludge suspension from submerged membrane bioreactors (SBR). The quantitative effects of different chemical cleaning conditions (temperature, TMP and stirring speed) on model parameters were determined. Results showed that the cleaning effency of

Download English Version:

https://daneshyari.com/en/article/7006385

Download Persian Version:

https://daneshyari.com/article/7006385

Daneshyari.com