

## Accepted Manuscript

Title: New modules for membrane bioreactors: improving fouling control

Authors: Robson Rodrigues Mororó, Cristiano Piacsek Borges, Frederico de Araujo Kronemberger

PII: S0263-8762(18)30274-0  
DOI: <https://doi.org/10.1016/j.cherd.2018.05.035>  
Reference: CHERD 3199

To appear in:

Received date: 5-3-2018  
Revised date: 27-4-2018  
Accepted date: 25-5-2018

Please cite this article as: Mororó, Robson Rodrigues, Borges, Cristiano Piacsek, Kronemberger, Frederico de Araujo, New modules for membrane bioreactors: improving fouling control. *Chemical Engineering Research and Design* <https://doi.org/10.1016/j.cherd.2018.05.035>

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.



## New modules for membrane bioreactors: improving fouling control

Robson Rodrigues Mororó<sup>1</sup>, Cristiano Piacsek Borges<sup>1</sup>, Frederico de Araujo Kronemberger<sup>1,\*</sup>

<sup>1</sup>Chemical Engineering Program – COPPE/Federal University of Rio de Janeiro, Brazil. P.O.

Box: 68502, ZIP CODE: 21941-972, Rio de Janeiro, RJ.

\*Corresponding author email: frederico@peq.coppe.ufrj.br

### Highlights:

- New module for submerged membrane bioreactors with integrated aeration was evaluated;
- The lower the packing density, the smaller the transport resistance;
- A high number of air injectors in the module base resulted in elevated flux values;
- Reduction in transport resistance was correlated to the aeration energy expenditure.

**Abstract:** New hollow fiber membrane modules with air injectors coupled to their base are presented in this paper. The transport resistances were analyzed through permeation tests with yeast cells suspensions varying parameters such as surface air velocity and filtration pressure. Five different modules were investigated, and the lowest resistances were observed in the module with 64 holes in the air injector and packing density equal to  $650 \text{ m}^2 \cdot \text{m}^{-3}$ . The

Download English Version:

<https://daneshyari.com/en/article/7005645>

Download Persian Version:

<https://daneshyari.com/article/7005645>

[Daneshyari.com](https://daneshyari.com)