

Author's Accepted Manuscript

A facile approach to construct hierarchical dense membranes via polydopamine for enhanced popylene/nitrogen separation

Manquan Fang, Haotian Zhang, Jinxun Chen, Tao Wang, Jie Liu, Xiang Li, Jiding Li, Xingzhong Cao



PII: S0376-7388(15)30276-3
DOI: <http://dx.doi.org/10.1016/j.memsci.2015.10.046>
Reference: MEMSCI14069

To appear in: *Journal of Membrane Science*

Received date: 8 July 2015
Revised date: 13 October 2015
Accepted date: 19 October 2015

Cite this article as: Manquan Fang, Haotian Zhang, Jinxun Chen, Tao Wang, Jie Liu, Xiang Li, Jiding Li and Xingzhong Cao, A facile approach to construct hierarchical dense membranes via polydopamine for enhanced popylene/nitrogen separation, *Journal of Membrane Science* <http://dx.doi.org/10.1016/j.memsci.2015.10.046>

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 galley proof before it is published in its final citable 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.

A facile approach to construct hierarchical dense membranes via polydopamine for enhanced propylene/nitrogen separation

Manquan Fang ^a, Haotian Zhang ^a, Jinxun Chen ^a, Tao Wang ^a, Jie Liu ^a, Xiang Li ^a, Jiding Li ^{a*},
Xingzhong Cao ^b

a. The State Key Laboratory of Chemical Engineering, Department of Chemical Engineering, Tsinghua University, Beijing 100084, China.

b. Key Laboratory of Nuclear Radiation and Nuclear Energy Technology, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing 100049, China.

* Corresponding author, E-mail: lijiding@tsinghua.edu.cn, Tel: +86-10-62782432

Abstract

Bio-inspired polydopamine has been established as a facile and versatile surface modification agent in recent years, many applications have been found such as tailoring the wettability of membrane surfaces, constructing antifouling or antimicrobial surface and serving as a platform for further modifications. To our knowledge, these applications were almost all aimed at liquid systems. For gas separations, however, polydopamine (PDA) was rarely investigated and exploited in literature. In this work, we report a facile method to fabricate ultrathin reverse-selective gas separation membranes (bigger molecules permeate more) via self-polymerization and adhesion of

Download English Version:

<https://daneshyari.com/en/article/632610>

Download Persian Version:

<https://daneshyari.com/article/632610>

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