

High-Throughput Liquid Crystals for Liquid-Bottom Membranes

N. P. G. ^{1,2}, R. P. T. ², J. L. M. ^{1,*}, J. C. ¹, L. ²,
F. S. ¹, I. S. ^{2,3}

¹SOC&SAM group, ², and Departament de Química Física, Universitat de Barcelona,
Martí i Franquès 1, 08028 Barcelona, Catalonia, Spain

²Department of Physics and Liquid Crystal Materials Research Center, University of Colorado, Boulder, Colorado 80309, USA

³Renewable and Sustainable Energy Institute, National Renewable Energy Laboratory
and University of Colorado, Boulder, Colorado 80309, USA

(Received 31 March 2011; revised 17 October 2011)

Liquid-crystal-based membranes for water desalination and other applications are of great interest. However, the design of such membranes is a complex task due to the need to combine the high permeability of liquid crystals with the mechanical strength and chemical stability of the membrane support. In this work, we report the synthesis and characterization of a new family of liquid-crystal-based membranes. These membranes are composed of a liquid-crystal phase dispersed in a polymer matrix. The liquid-crystal phase is formed by the self-assembly of liquid-crystal molecules, which are functionalized with hydrophilic groups. The polymer matrix is formed by a cross-linked network of polymer chains. The resulting membranes exhibit high permeability and mechanical strength, and are suitable for water desalination and other applications.

1. s^2 s^2 s^2 T s^2 s^2 r s^2 l r
r 5 60 m. C l s^2 r ll s^2 ll r
FIG. s^2 s^2 .

1(1. 100C ll

ll r ll r

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【Q922001... s72001 ... s7768.2 2D5(2) s7