

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Tuning of thin film composite nanofiltration membranes containing poly(vinylidene fluoride)-g-poly(oxyethylene) methacrylate** AYSE ASATEKIN, ARIYA AKTHAKUL, Department of Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, RICHARD F. SALINARO, Pall Corporation, Port Washington, NY 11050, ANNE M. MAYES, Department of Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139 — Thin film composite nanofiltration membranes have applications in many fields ranging from water purification to molecular separations. The microphase separation of amphiphilic graft copolymers consisting of a hydrophobic poly(vinylidene fluoride) (PVDF) backbone and poly(oxyethylene) methacrylate (POEM) side-chains, PVDF-g-POEM, was previously employed to create nanochannel membranes with subnanometer size selectivity [1]. Here we explored means of tuning the molecular size cut-off of these membranes by a simple processing approach: Widening of the hydrophilic nanochannels by the addition of poly(ethylene oxide) (PEO) to the casting solution. PEO is subsequently removed by the immersion of the membrane in a solvent such as isopropanol. [1] A. Akthakul, R.F. Salinaro, A.M. Mayes, *Macromolecules* 2004, 37, 7663-7668

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Date submitted: 16 Dec 2004

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