

Block Copolymers Used as Ultrafiltration Membranes

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The growing world population is causing water resources to be stressed to levels not previously seen. This stress is motivating scientists to explore new methods for purifying water to drinking level standards. One technique gaining popularity is ultrafiltration; current ultrafiltration processes use membranes made by a phase inversion process. These membranes are compromised by a wide distribution of pore sizes. Our research aims to make membranes with a monodisperse pore size by taking advantage of block copolymer self-assembly. This talk with focus on our efforts to make membranes with 14 nm pores from poly(styrene)-b-poly(lactide). Membrane synthesis, gas diffusion, liquid flux, solute rejection and fouling experiments will be discussed.