

Abstract Submitted
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Ionic conductivity of mesoporous block copolymer membranes in liquid electrolyte as a function of copolymer and homopolymer molecular weight¹ DAVID WONG, SCOTT MULLIN, GREG STONE, University of California, Berkeley, VINCENT BATTAGLIA, Lawrence Berkeley National Labs, NITASH BALSARA, University of California, Berkeley — Mesoporous block copolymer membranes have been synthesized using poly(styrene-block-ethylene-block-polystyrene) (SES). A series of symmetric SES copolymers and PS homopolymers have been studied at different blending fractions. Ionic conductivities of the porous films in a liquid electrolyte, 1.0 M LiPF₆ in ethylene carbonate/diethyl carbonate, compare favorably to conventional battery separators and generally increase with internal surface area, as measured by nitrogen adsorption. Characterization of the effects of pore structure and SES morphology on conductivity will be presented.

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