

Abstract Submitted
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Anion Transport in Hydrated Block Copolymers NITASH BALSARA, UC Berkeley, GUILLAUME SUDRE, LBNL, SEBNEM INCEOGLU, UC Berkeley — Polystyrene-block-polychloromethylstyrene (PS-b-PCMS) copolymers, were synthesized by nitroxide-mediated controlled radical polymerization. Separate aliquots of the PS-b-PCMS samples were quarternized to transform the PCMS block. This resulted in block copolymers with ionizable blocks. We refer to ion-containing block copolymers synthesized from the same precursor as matched pairs: SAM (containing trimethylammonium chloride) and SIM (containing n-butylimidazolium chloride). Self-assembly in these copolymers resulted in the formation of lamellar phases regardless of composition, chemical formula of the bound ion, and chain length. Chloride ion conductivity and water uptake measurements on one of the matched pairs led to similar results. The chloride ions in this matched pair were replaced by hydroxide ions and the changes in conductivity due to this are reported.

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