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Supporting Information:



Figure 1: SEC traces of poly(VBIm-*co*-DEGMEMA) (top figure) and A-BC-A triblock copolymers poly(sty-b-(MVBIm-Tf₂N-co-DEGMEMA)-b-sty) (bottom figure).



Figure 2: Cyclic voltammetry showing electrochemical stability from - 4 V to + 4 V.



Figure 3: TGA-SA of A-BC-A triblock copolymers poly(sty-b-(MVBIm-Tf₂N-co-DEGMEMA)-b-sty) and random copolymers with similar ion content.



Figure 4: Still images of electromechanical transducer made from poly[Sty-b-(MVBIm-Tf₂N₅₂-co-DEGMEMA₄₈)-b-Sty] having 26 mol% ion content under applied potential of 4 V.