Supporting Information

for The Soret Effect in Dry Polymer Electrolyte

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Figure S1. (Left) Representative open circuit voltage measurements of symmetric lithium cell containing PEO + LiTFSI electrolyte ($r = 0.085 \text{ mol}_{Li}/\text{mol}_{EO}$) for cold and hot plate set temperatures noted in legend. (**Right**) Actual temperature collected during the OCV measurement from fine-gauge thermocouples on the cold and hot sides of a spacer designed to mimic the electrolyte and placed in a cell similar to the symmetric lithium cell. Note that due to heat transfer the actual temperature gradient is much less than the difference in set points of the cold and hold plates. Actual temperatures were used for all calculations in the manuscript. (**Both**) Every 30th data point is shown for clarity. Insets, with all data points plotted, demonstrate that early time transients are gone in less than 5 minutes.



Figure S2. Voltage sweeps for the thermogalvanic cells containing polymer electrolyte with salt concentration: (a) $m = 0.234 \ mol_{LiTFSI}/kg_{EO}$, $\Delta T \approx 10.5 \ K$, and voltage swept at 5 mV/s; (b) $m = 1.929 \ mol_{LiTFSI}/kg_{EO}$, $\Delta T \approx 11.6 \ K$, and voltage was swept at 10 mV/s; (c) $m = 2.331 \ mol_{LiTFSI}/kg_{EO}$, $\Delta T \approx 3.9 \ K$, and voltage was swept at 20 mV/s; and (c) $m = 2.331 \ mol_{LiTFSI}/kg_{EO}$, $\Delta T \approx 3.9 \ K$, and voltage was swept at 5 mV/s. These data are representative of the current and power curves observed in this work. Most power measurements reported in the manuscript were conducted at 5 or 10 mV/s in order to yield more precise determination of maximum power.