

SUPPORTING INFORMATION

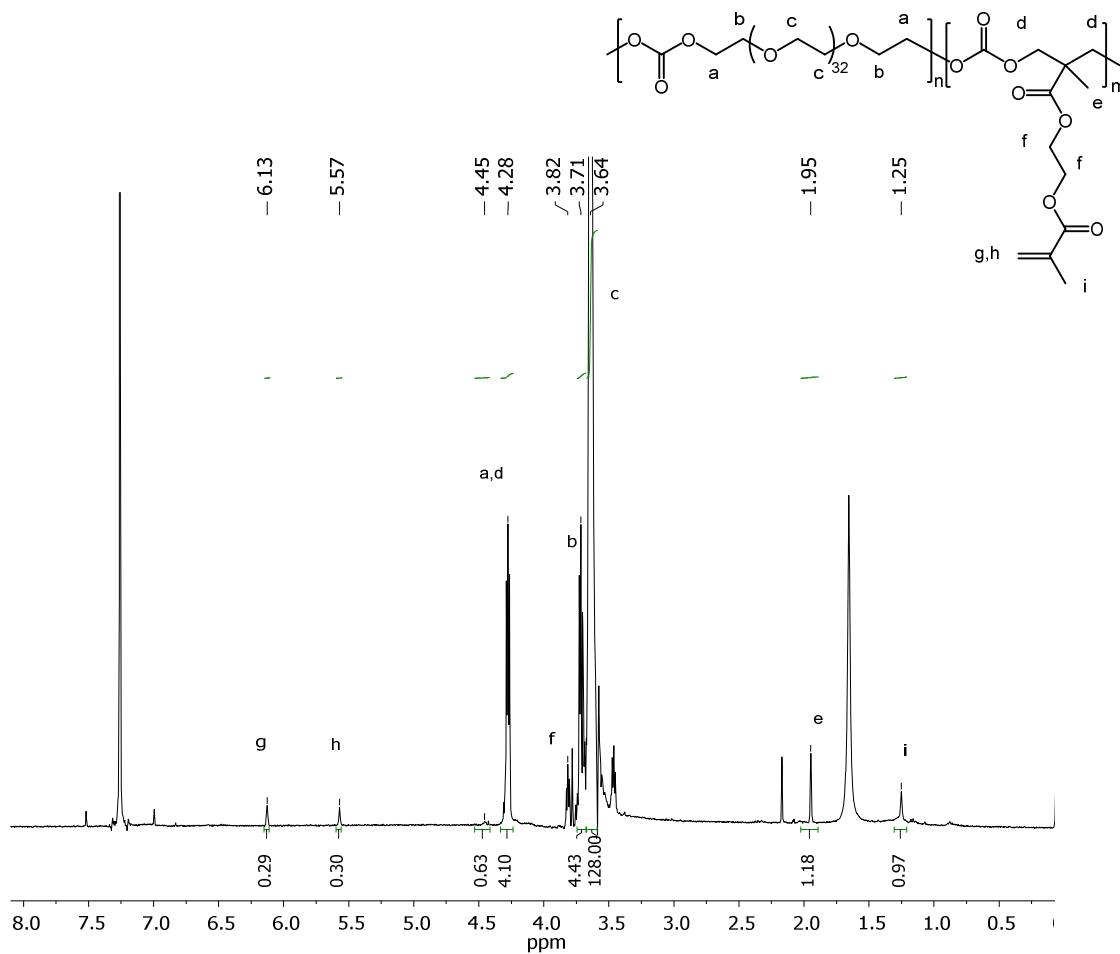


Figure S1. <sup>1</sup>H NMR of PEO<sub>34</sub>-PC 10 wt% MA

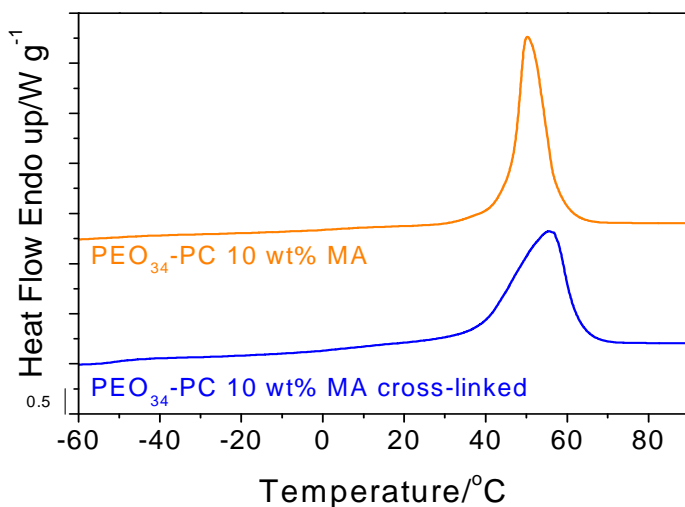
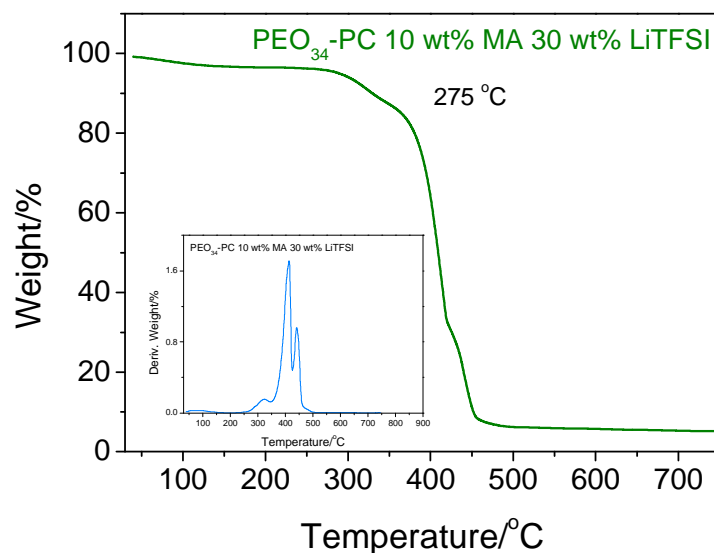
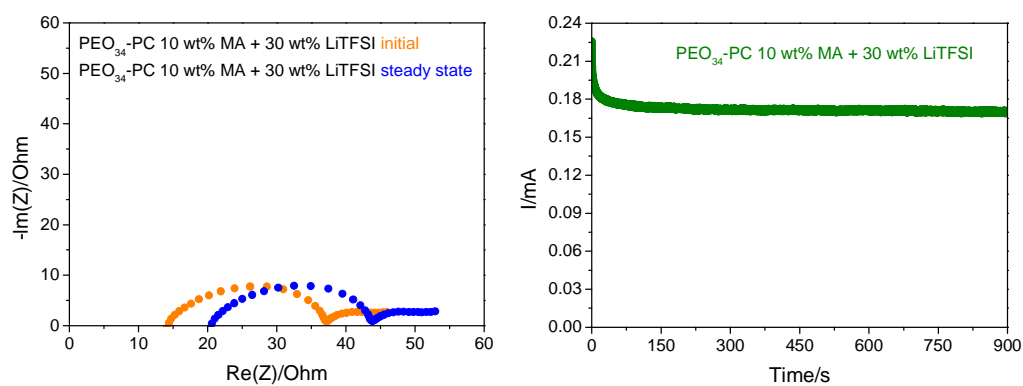


Figure S2. DSC traces of non-cross-linked and cross-linked PEO<sub>34</sub>-PC 10 wt% MA during the second heating scan at 20 K min<sup>-1</sup>.



**Figure S3.** Thermogravimetric analysis of cross-linked PEO<sub>34</sub>-PC 10 wt% MA containing 30 wt% LiTFSI.



**Figure S4.** Lithium transference number analysis at 70 °C. Impedance spectroscopy and chronoamperometry analysis for PEO<sub>34</sub>-PC 10 wt% MA containing 30 wt% LiTFSI.