Electronic Supplementary Material (ESI) for CrystEngComm

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Effect of ionic liquid on the crystallization kinetics behaviour of polymer poly(ethylene oxide)

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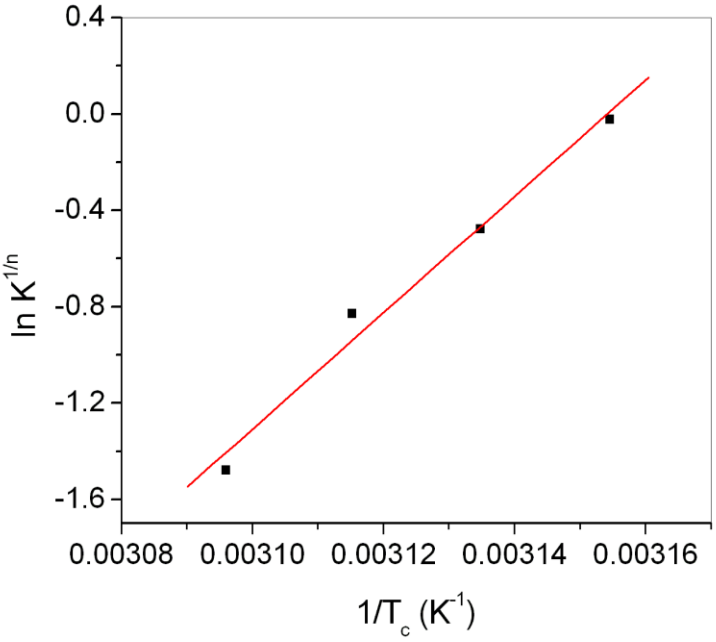

Fig. S1 ln $K^{1/n}$ vs. $1/T_c$ plot for evaluating the isothermal crystallization activation energy for PEO+20wt.%$BMIMPF_6$ film.

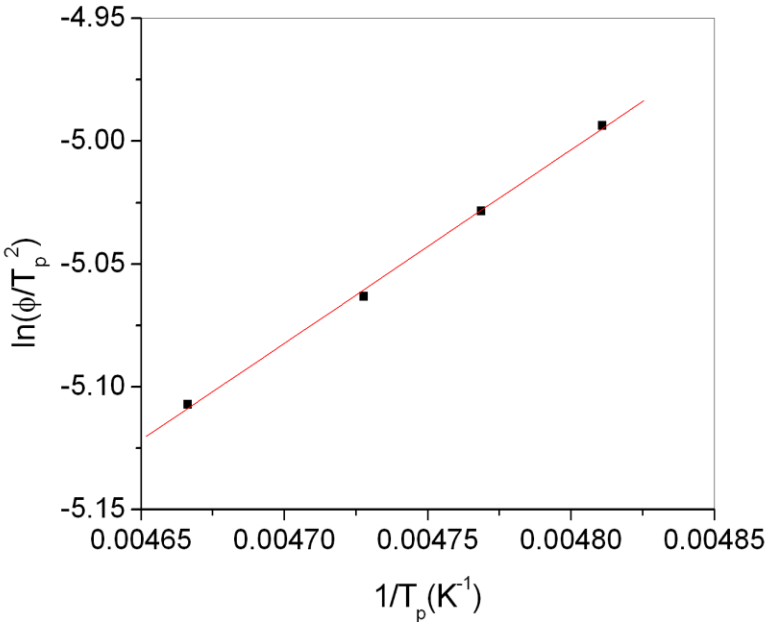

Fig. S2 $\ln(\phi/T_p^2)$ vs.$1/T_p$ plot for evaluating the non-isothermal crystallization activation energy for PEO+20 wt.% $BMIMPF_6$ film.

Calculation of degree of crystallinity:

The relative degree of crystallinity of PEO and for PEO+x wt.% $BMIMPF_6$ for different values of 'x' is calculated from the melting enthalpy values obtained from the area of the melting curves for PEO in DSC thermograms as shown in Fig. S1 using the following equation:

$$\text{Degree of crystallinity} = \left(\frac{\Delta H_m}{\Delta H^o{}_m} \right).100 \ \ \%$$

where, ΔH_m is the melting enthalpy of PEO+x wt.% $BMIMPF_6$ films and ΔH^o_m =213.7 J/g is melting enthalpy of 100% crystalline PEO.

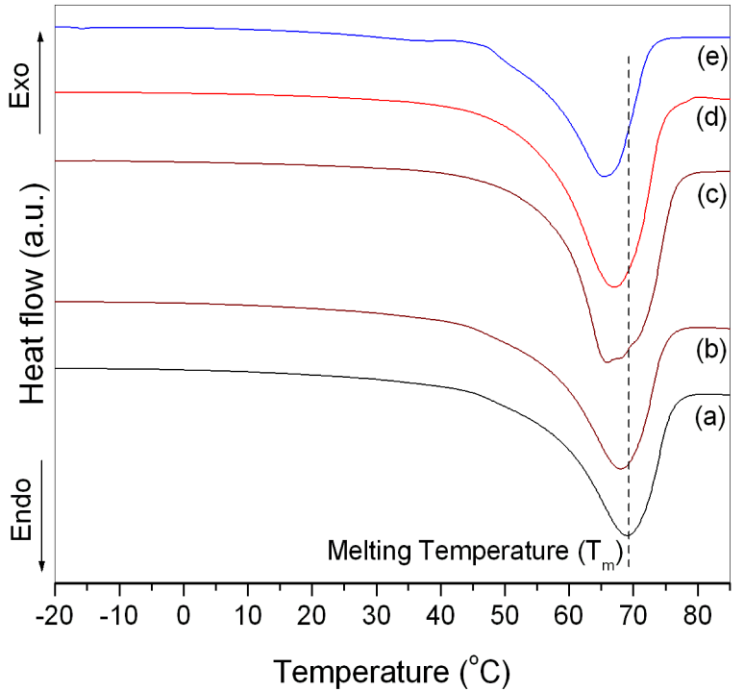

Fig. S3 DSC thermograms of PEO+xwt.% $BMIMPF_6$ films for (a) x=0 (b) x=5 (c) x=10 (d) x=15 and (e) x=20. The respective values of ΔH_m obtained by DSC thermograms are 162, 130, 125, 112, 92 J/g.