

Highly efficient separation of 5-hydroxymethylfurfural from imidazolium-based ionic liquids

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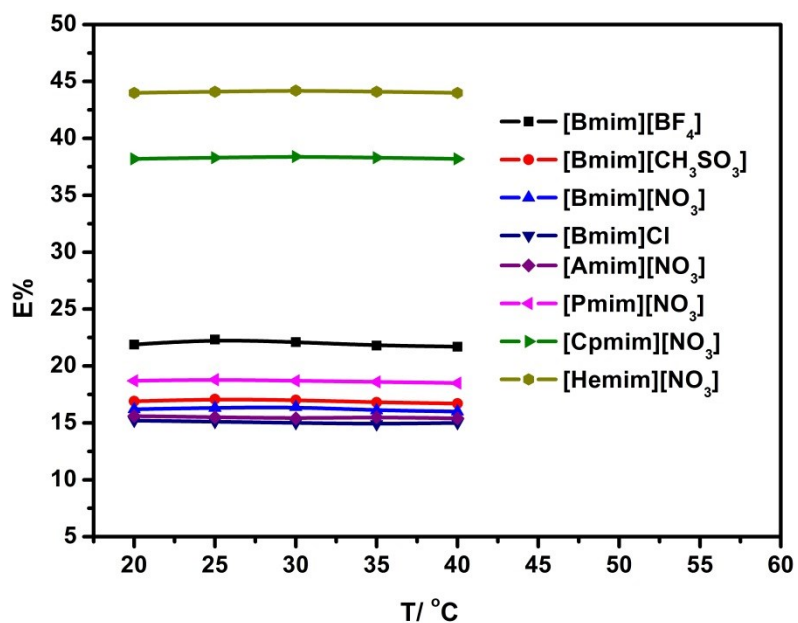


Fig. S1 The effect of system temperature on the extraction efficiency of 5-HMF from different ILs by using THF.

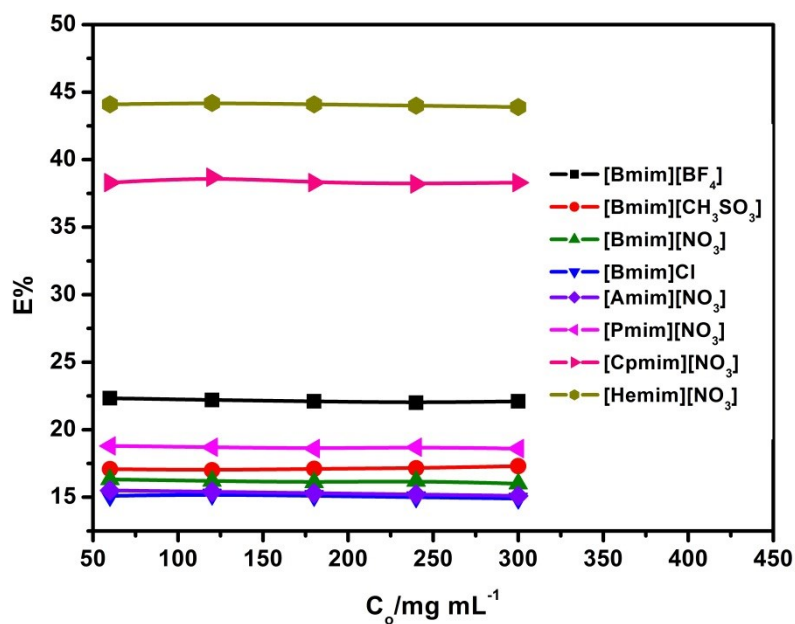


Fig. S2 The effect of initial concentrations of 5-HMF in the ILs on the extraction efficiency of 5-HMF from different ILs by using THF.

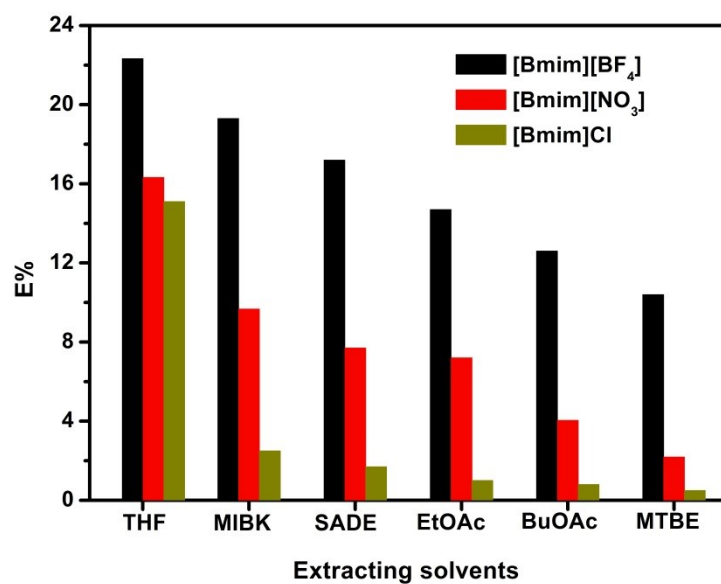


Fig. S3 The extraction efficiency of 5-HMF from [Bmim]X (X=[BF₄], [NO₃] and Cl) by different extracting solvents at 25 °C.

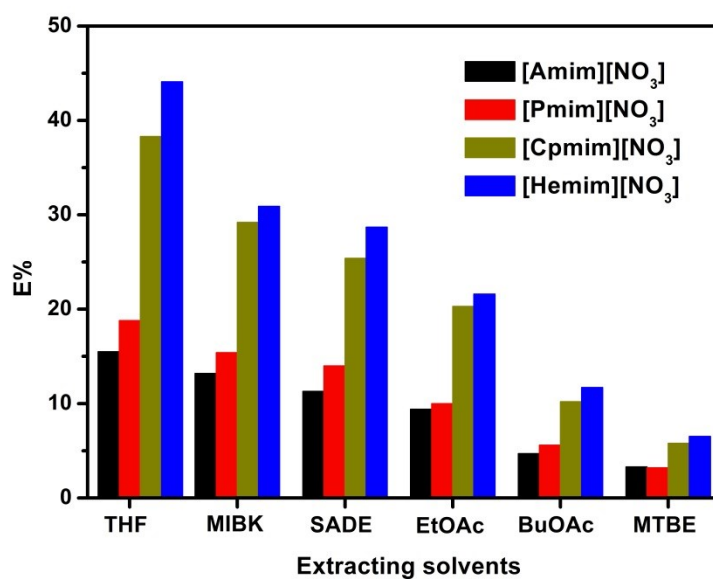


Fig. S4 The extraction efficiency of 5-HMF from the [NO₃]⁻ anion based ILs with different cations by different extracting solvents at 25 °C.

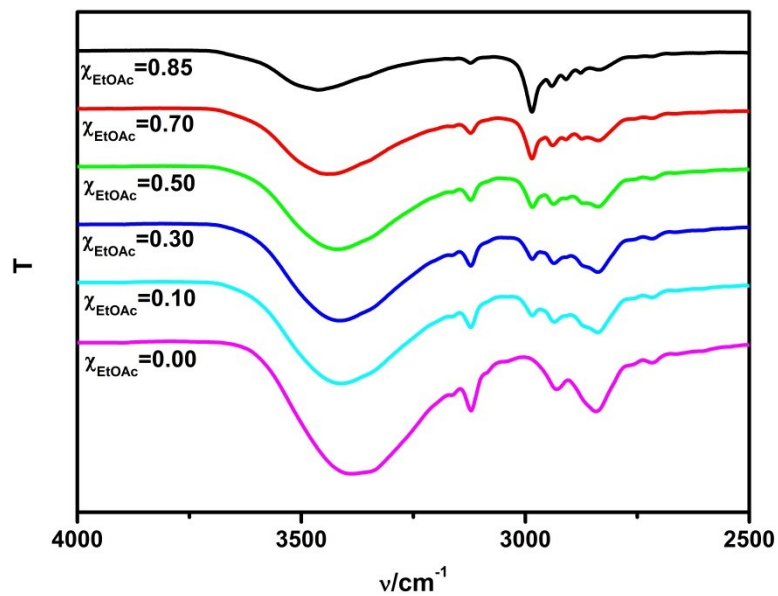


Fig. S5 O–H stretching of 5-HMF in 5-HMF- EtOAc mixtures as a function of mole fraction of EtOAc.

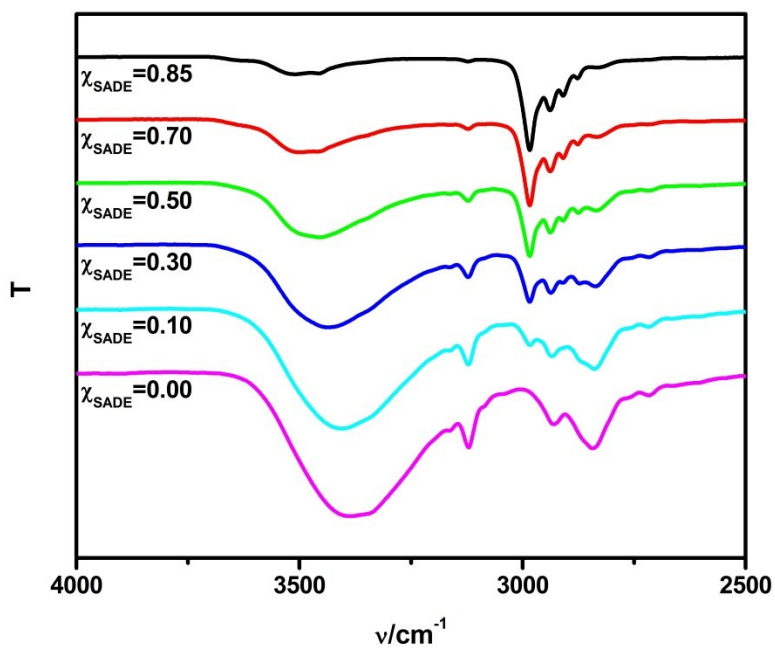


Fig. S6 O–H stretching of 5-HMF in 5-HMF- SADE mixtures as a function of mole fraction of SADE.

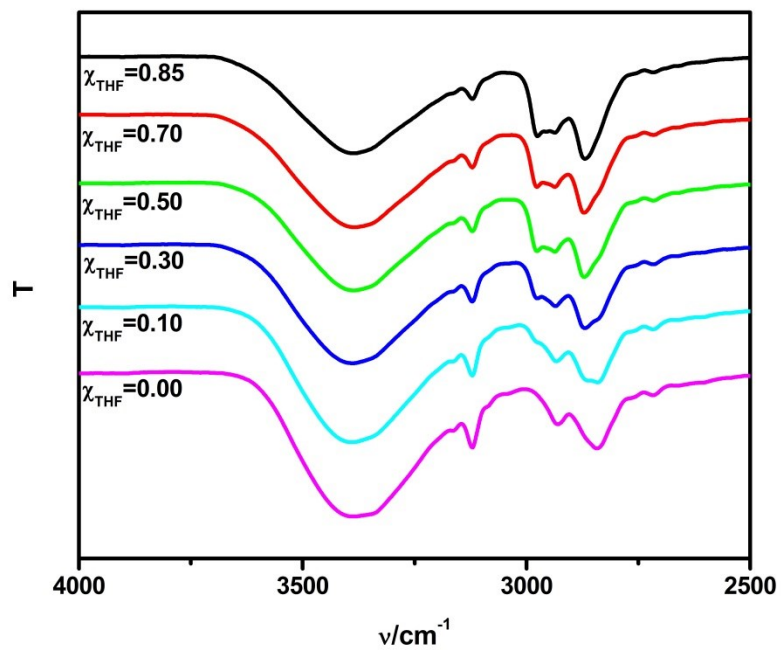


Fig. S7 O–H stretching of 5-HMF in 5-HMF- THF mixtures as a function of mole fraction of THF.

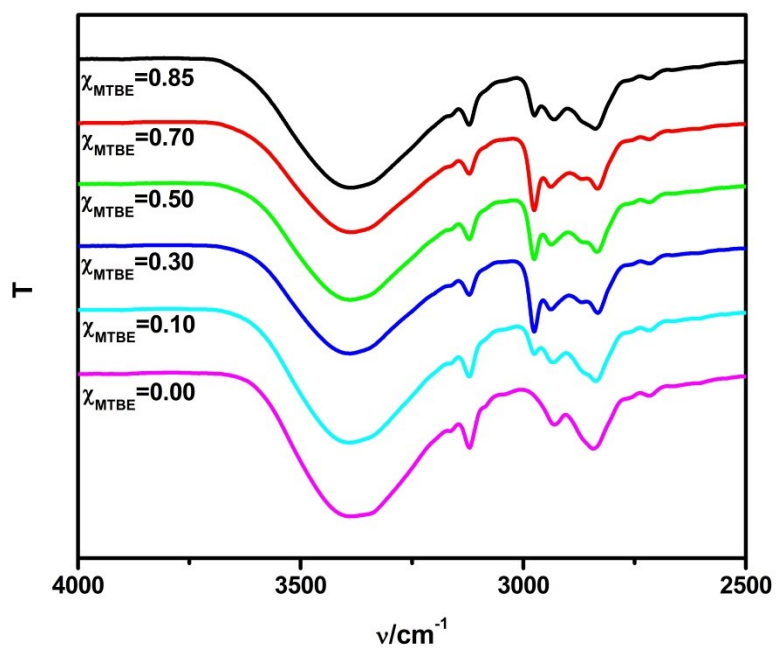


Fig. S8 O–H stretching of 5-HMF in 5-HMF- MTBE mixtures as a function of mole fraction of MTBE.

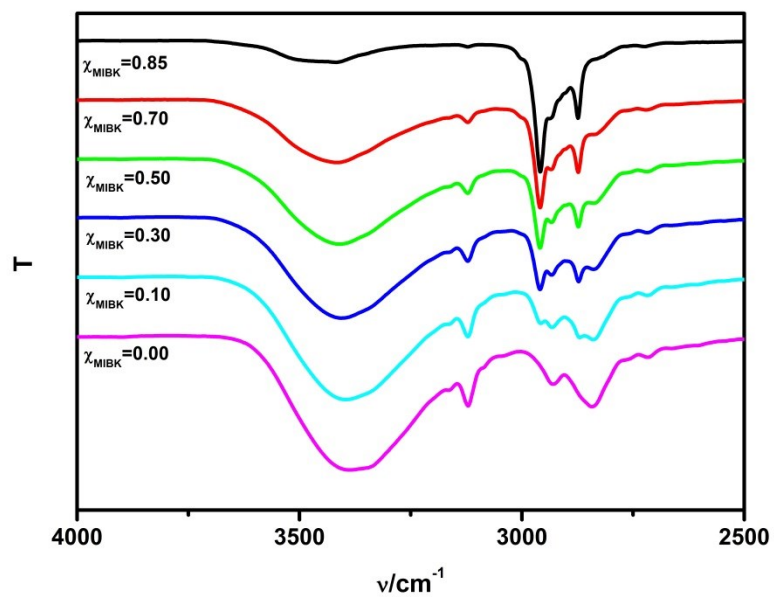


Fig. S9 O–H stretching of 5-HMF in 5-HMF- MIBK mixtures as a function of mole fraction of MIBK.

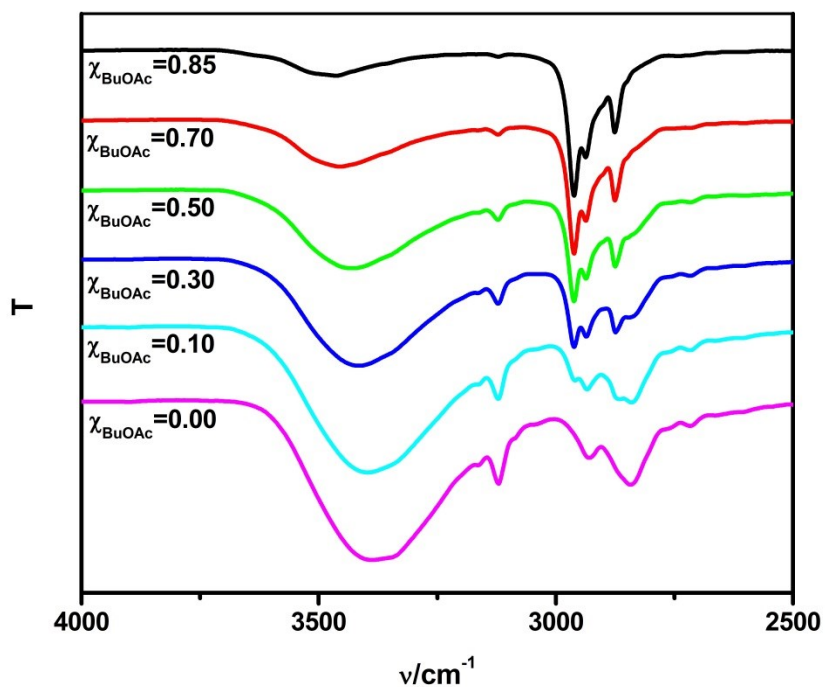


Fig. S10 O–H stretching of 5-HMF in 5-HMF- BuOAc mixtures as a function of mole fraction of BuOAc.

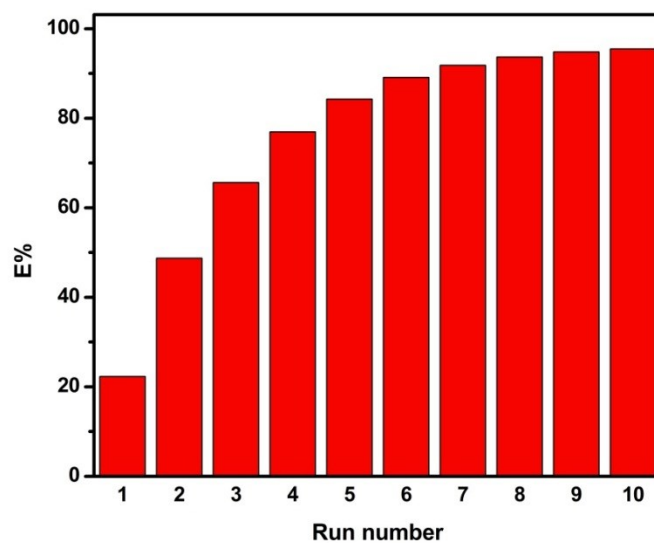


Fig. S11 The effect of run number on the cumulative extraction efficiency of 5-HMF in [Bmim][BF₄] by THF

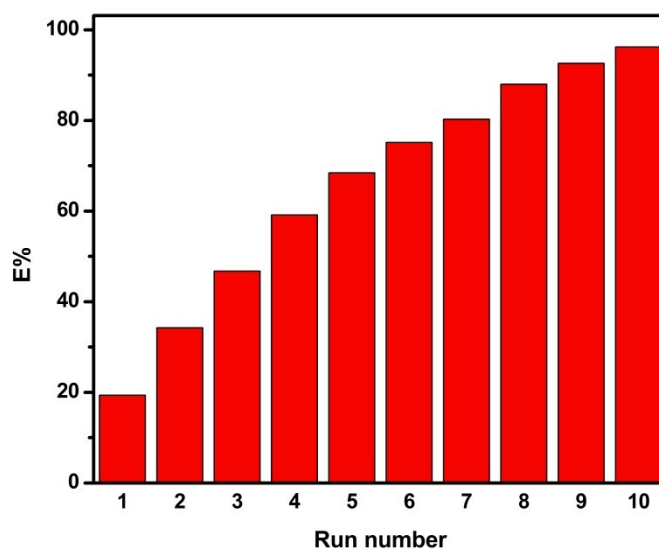


Fig. S12 The effect of run number on the cumulative extraction efficiency of 5-HMF in [Bmim][CH₃SO₃] by THF

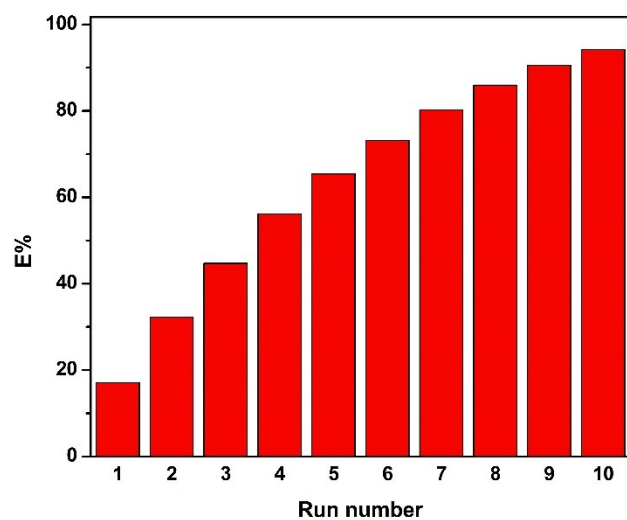


Fig. S13 The effect of run number on the cumulative extraction efficiency of 5-HMF in [Bmim][CH₃OSO₃] by THF

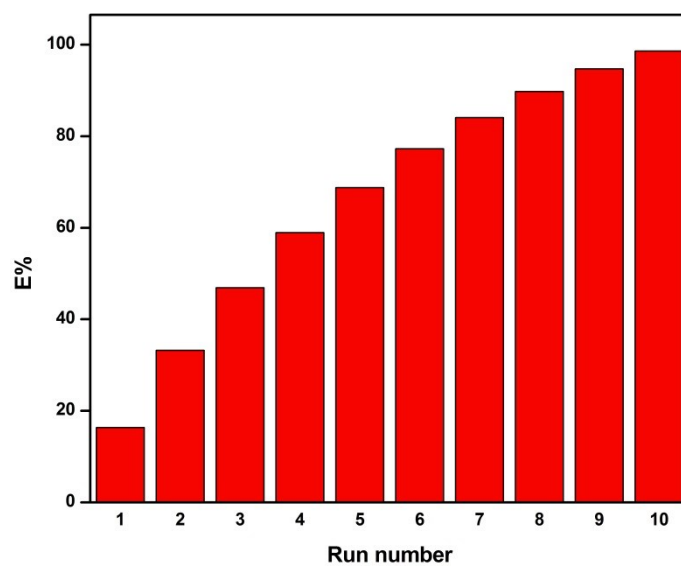


Fig. S14 The effect of run number on the cumulative extraction efficiency of 5-HMF in [Bmim][NO₃] by THF

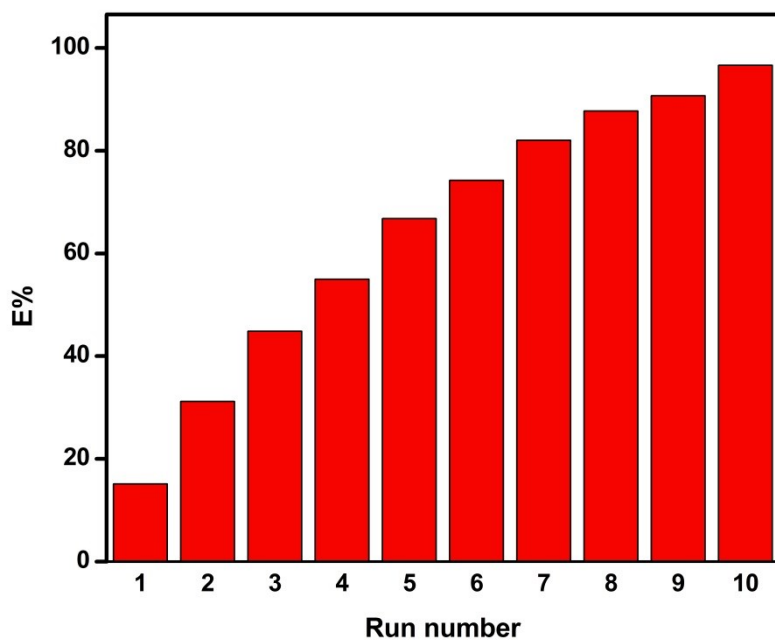


Fig. S15 The effect of run number on the cumulative extraction efficiency of 5-HMF in [Bmim]Cl by THF

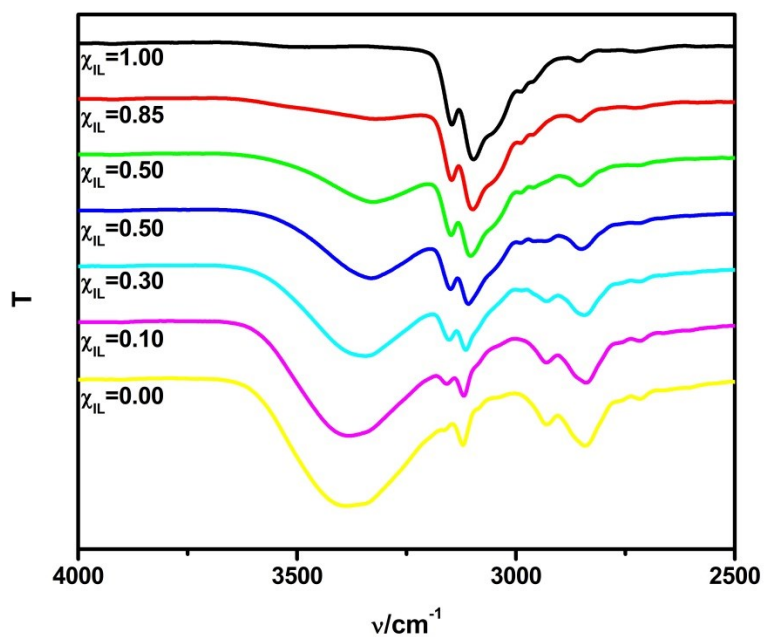


Fig. S16 O–H stretching of 5-HMF in 5-HMF- [Amim][NO₃] mixtures as a function of mole fraction of [Amim][NO₃].

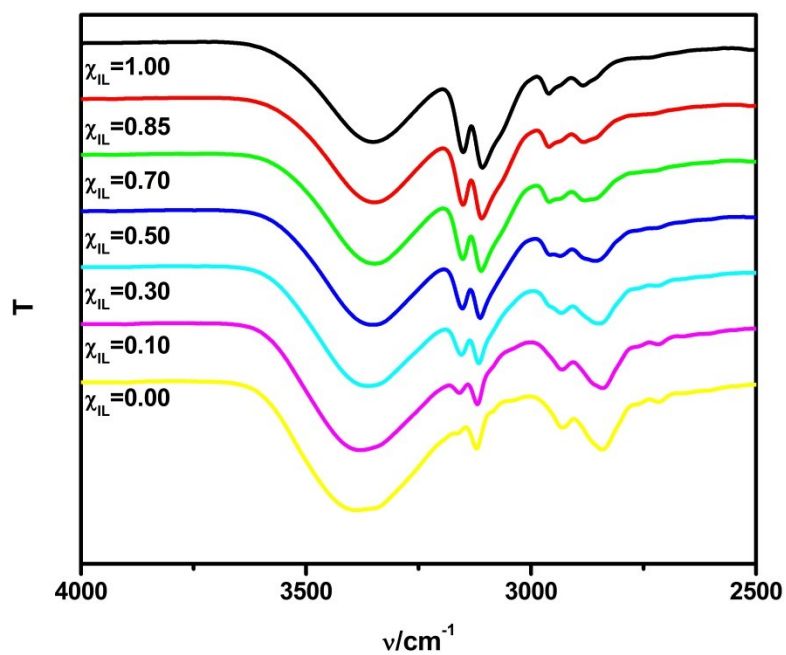


Fig. S17 O–H stretching of 5-HMF in 5-HMF- [Hemim][NO₃] mixtures as a function of mole fraction of [Hemim][NO₃].

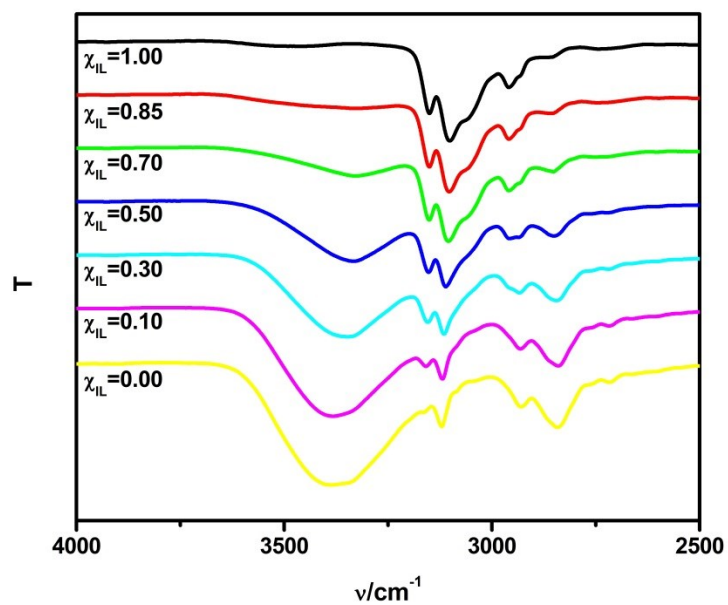


Fig. S18 O–H stretching of 5-HMF in 5-HMF-[Cpmim][NO₃] mixtures as a function of mole fraction of [Cpmim][NO₃].

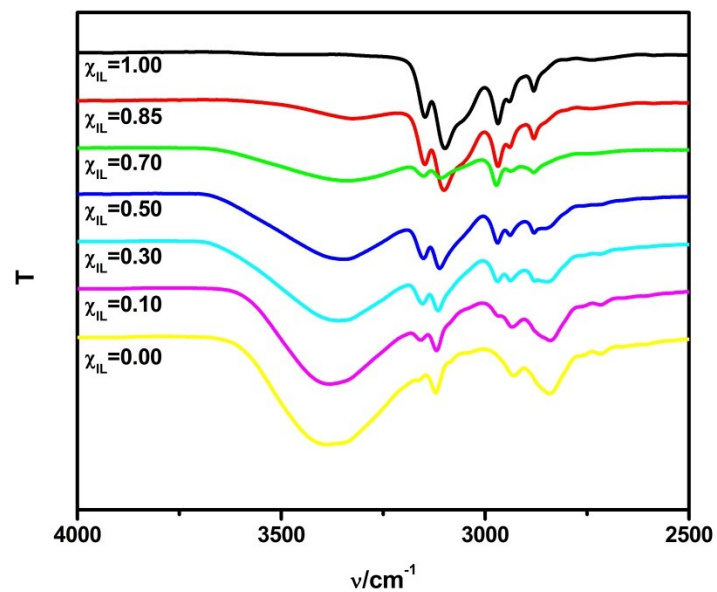


Fig. S19 O–H stretching of 5-HMF in 5-HMF-[Pmim][NO₃] mixtures as a function of mole fraction of [Pmim][NO₃].

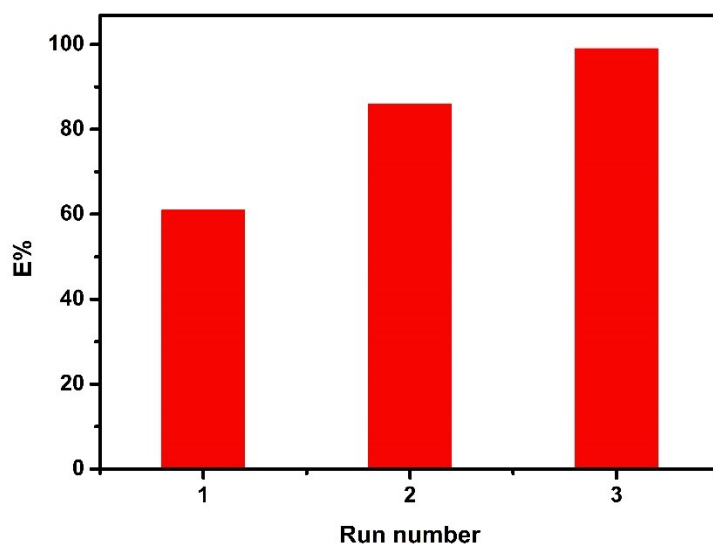


Fig. S20 The effect of run number on the cumulative extraction efficiency of 5-HMF from [Hemim][BF₄].

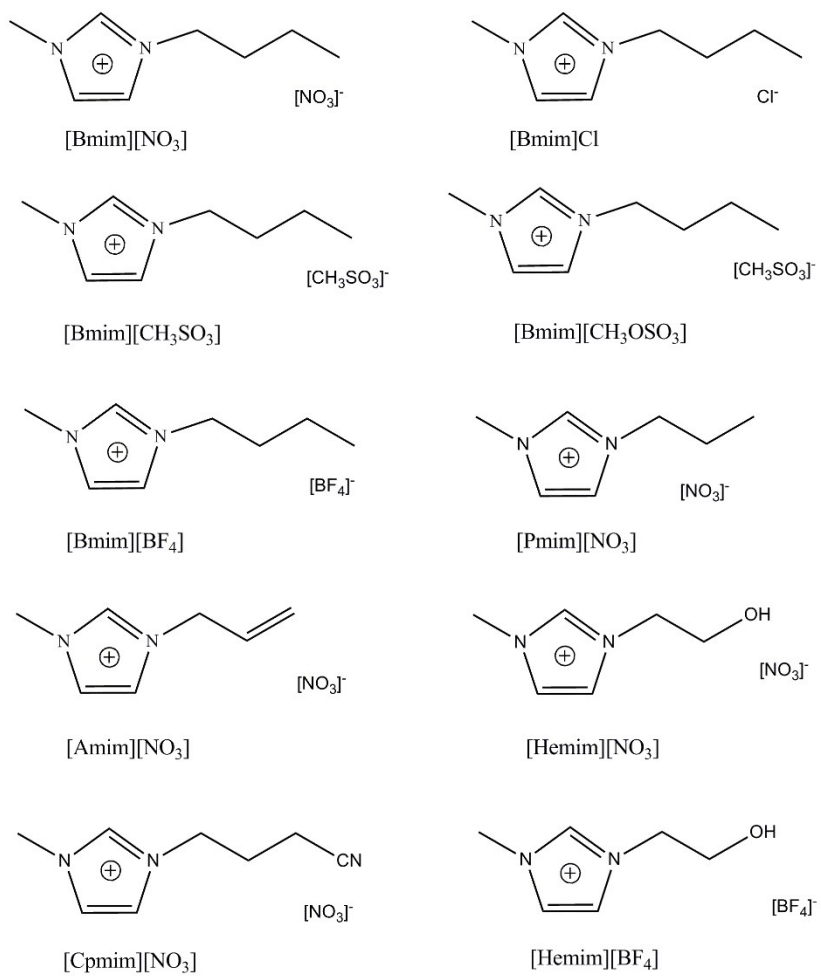


Fig. S21 The chemical structures of the ILs used in this work.