**Supporting information**

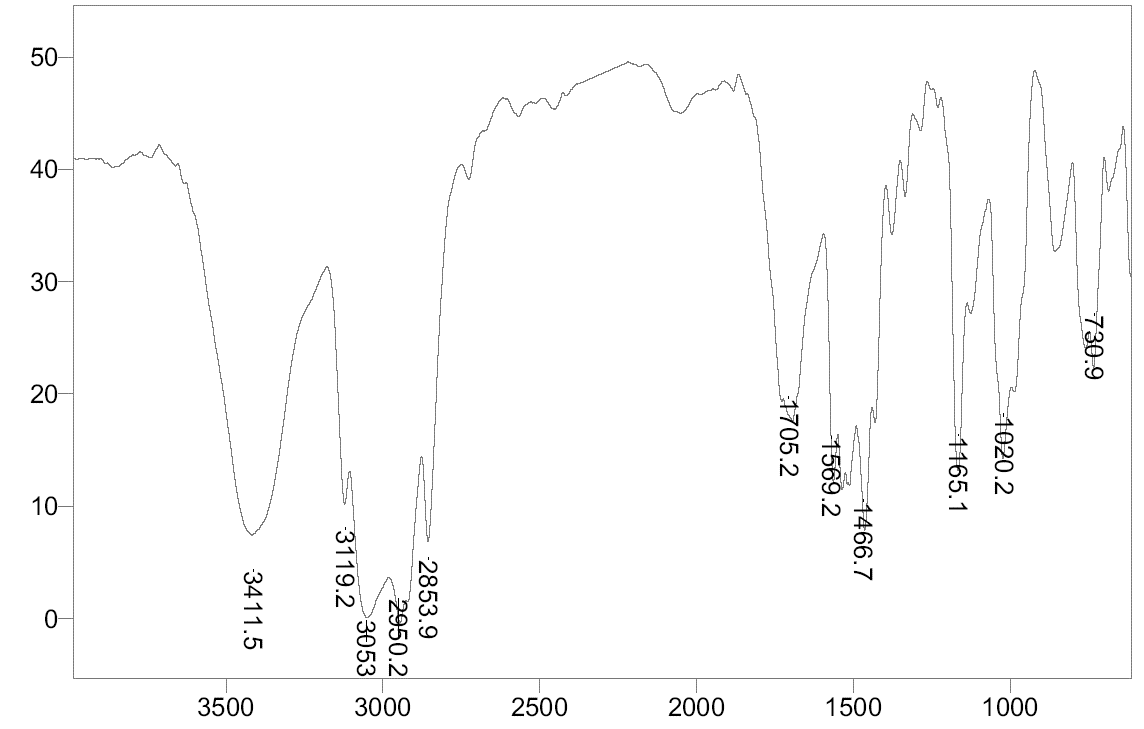
[**Determination and modeling the activity coefficients of 1- propyl -3 methylimidazolium bromide in the ethanol+water mixtures**](https://www.sciencedirect.com/science/article/pii/S0167732205001029) **at T=( 298.2, 308.2 and 318.2)K**

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Wavenumber (cm-1)

Transmittance (%)

Fig. S1.FT-IR spectra of 1-propyl-3-methylimidazolium bromide

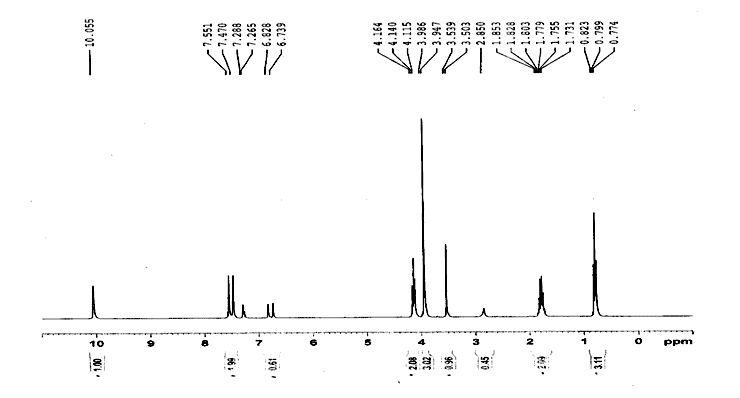


Fig. S2.1H NMR spectra of 1-propyl-3-methylimidazolium bromide

Figure. S3. The mean activity coefficient for [PrMIm]Br against the molality of [PrMIm]Br in various ethanol–water mixed solvent systems containing 0, 10, 20 and 30% mass fractions of ethanol at 308.2 K. Lines represent Pitzer model according to Eq. (1).

Fig. 1

Figure.S4. The mean activity coefficient for [PrMIm]Br against the molality of [PrMIm]Br in various ethanol–water mixed solvent systems containing 0, 10, 20 and 30% mass fractions of ethanol at 318.2 K. Lines represent Pitzer model according to Eq. (1).

Figure. S5. Temperature comparison of the mean activity coefficient of [PrMIm]Br+ethanol+water mixtures as a function molality concentration of [PrMIm]Br in pure water. Solid lines were generated using Pitzer model.

FigureS6. Temperature comparison of the mean activity coefficient of [PrMIm]Br+ethanol+water mixtures as a function molality concentration of [PrMIm]Br in mass fraction 20% (wEthanol/wmixture). Solid lines were generated using Pitzer model.

Figure S7. Temperature comparison of the mean activity coefficient of [PrMIm]Br+ethanol+water mixtures as a function molality concentration of [PrMIm]Br in mass fraction 30% (wEthanol/wmixture). Solid lines were generated using Pitzer model.