

Supplementary Information

Table S1. Experimental Solid-Liquid Phase Equilibria of Binary Systems {IL (1) + β -CD (2)}.

x_1	T/K		x_1	T/K
		[EMIM][Cl]		
0.8065	403.15		0.9709	326.15
0.8547	373.15		0.9804	337.15
0.9009	328.15		0.9901	348.15
0.9524	298.15		1.0000	358.15
0.9615	308.15			
		[EMIM][Br]		
0.8547	321.15		0.9709	305.15
0.9009	313.15		0.9804	324.15
0.9524	297.15		0.9901	341.15
0.9615	293.15		1.0000	350.15
		[BMIM][Cl]		
0.8065	423.15		0.9615	338.15
0.8547	413.15		0.9709	318.15
0.9009	373.15		0.9804	303.15
0.9242	365.15		0.9901	321.15
0.9524	348.15		1.0000	338.15

Table S2. Experimental Eutectic Points of Binary Systems {IL (1) + β -CD (2)}.

IL	$x_{1,e}$	$T_{1,e}/K$
[EMIM][Cl]	0.940	275.0
[EMIM][Br]	0.961	293.1
[BMIM][Cl]	0.978	302.5

The IR Spectroscopy

Table S3. Infrared spectroscopic data for the aromatic stretching region (3200–3000 cm^{-1}), corresponding with C-H stretching frequencies in the imidazolium cation.

IL	$\nu[\text{C}(5)\text{--H}]$	$\nu[\text{C}(4)\text{--H}]$	$\nu[\text{C}(2)\text{--H}]$
[EMIM][Cl]	3149 m	3092 m	3060 l
[EMIM][Cl] + β -CD	3150 m	3095 m	3085 m
[EMIM][Br]	3146 m	3072 m	3018 l
[EMIM][Br] + β -CD	3148 m	3088 m	3042 s
[BMIM][Cl]	3141 l	3064 m	3010 l
[BMIM][Cl] + β -CD	3146 l	3086 m	3049 s

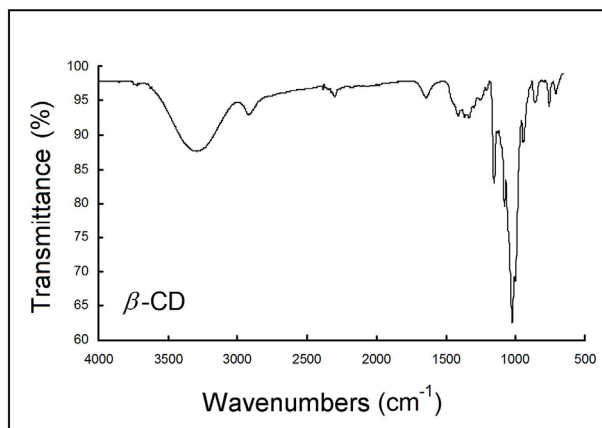
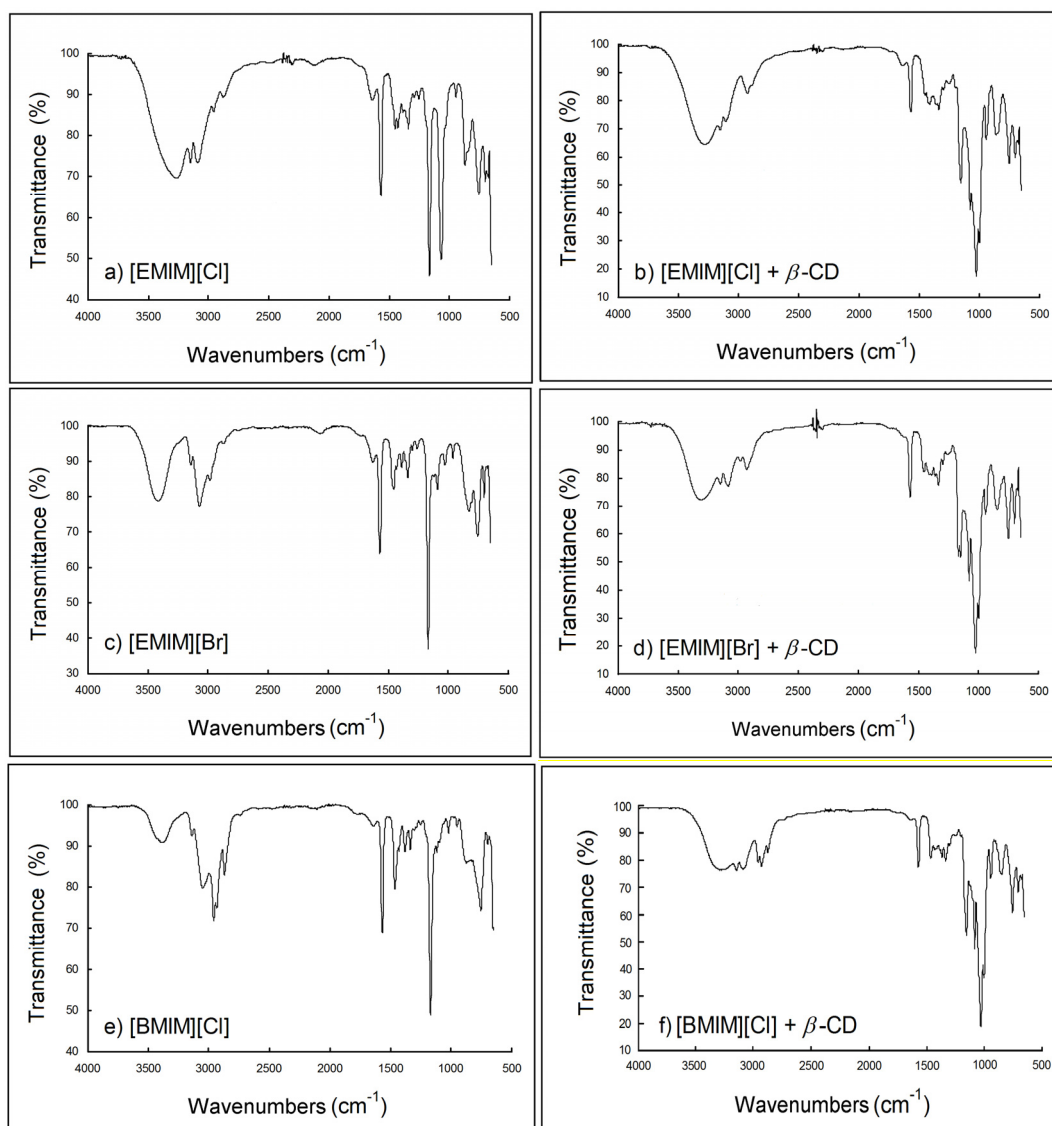
Figure S1. IR spectra of β -CD.**Figure S2.** IR spectra of pure ILs and their mixtures with β -CD: (a) [EMIM][Cl]; (b) [EMIM][Cl] + β -CD; (c) [EMIM][Br]; (d) [EMIM][Br] + β -CD; (e) [BMIM][Cl]; (f) [BMIM][Cl] + β -CD; (g) [BMPyr][Cl]; (h) [BMPyr][Cl] + β -CD.

Figure S2. Cont.

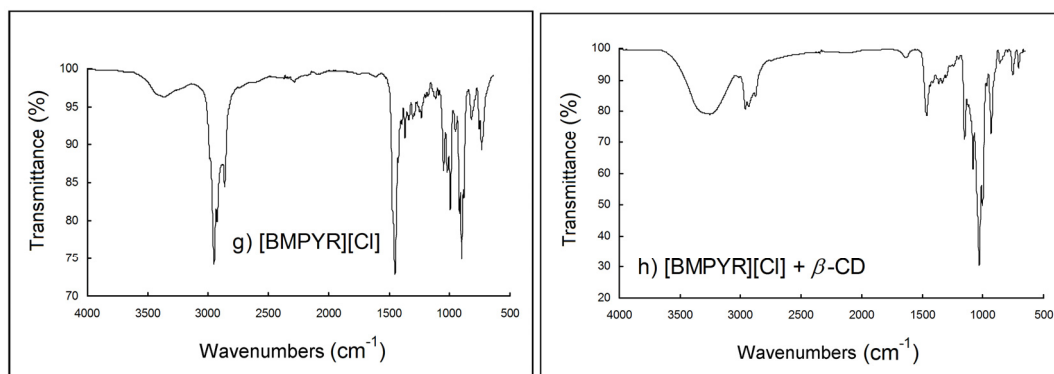


Figure S3. Plot of $\ln(\gamma_{13}^{\infty})$ versus $1/T$ for methanol in different ionic liquids and their mixtures with β -CD: (a) [BMPYR][Cl]; (b) [OMIM][NTf₂].

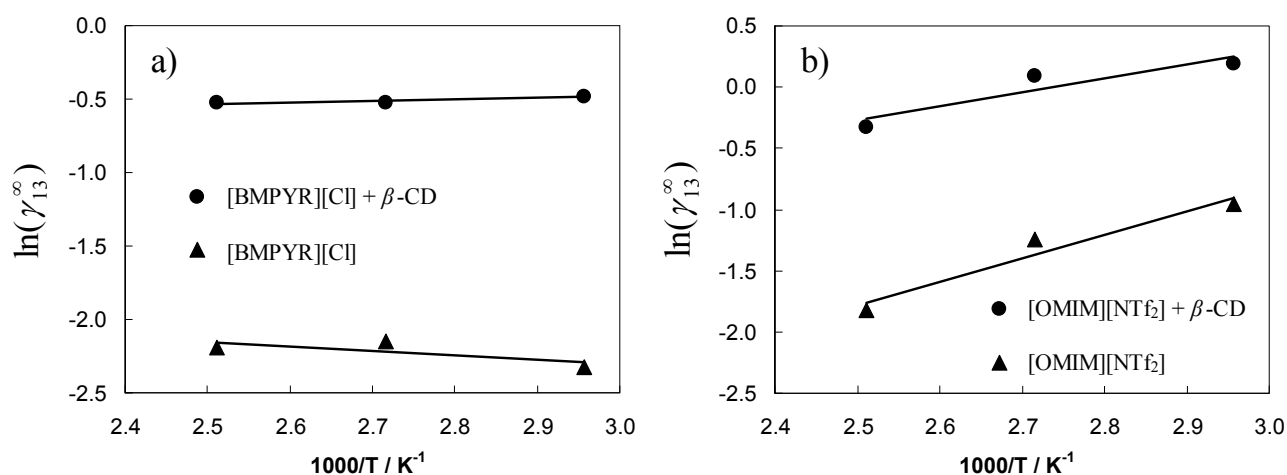


Figure S4. Plot of $\ln(\gamma_{13}^{\infty})$ versus $1/T$ for solutes in different ionic liquids and their mixtures with β -CD: (a) water + [BMPYR][Cl]; (b) *o*-xylene + [OMIM][NTf₂].

