

Supporting information

CO₂ absorption mechanism by diamino protic ionic liquids (DPILs) containing azolide anions

Xiao Wang,¹ Congyi Wu,² Dezhong Yang*²

¹ School of Earth Sciences and Resources, China University of Geosciences, Beijing 100083, China

² School of Science, China University of Geosciences, Beijing 100083, China

Email: yangdz@cugb.edu.cn

Table S1. CO₂ capacities by DPILs.

DPILs	g CO ₂ /g IL	
	Oncsik <i>et al.</i>	This work
[DMEDAH][Py]	0.222 (0.79) ^a	0.231 (0.82)
[DMEDAH][Im]	0.212 (0.75)	0.216 (0.77)
[DMEDAH][Tz]	0.197 (0.70)	0.190 (0.68)

^a The values in the parentheses were molar absorption capacities of ILs (mol CO₂/ mol IL)

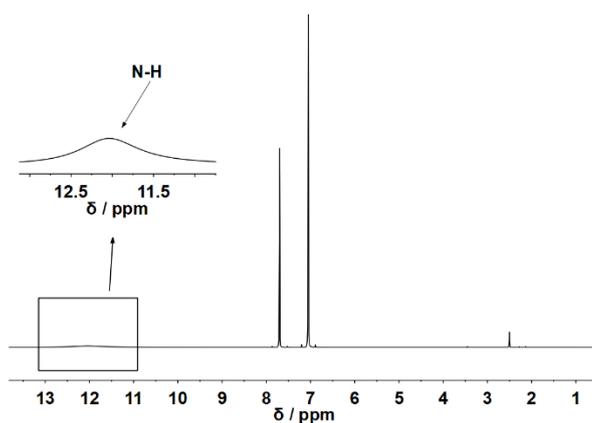


Figure S1. ¹H NMR spectra of imidazole in DMSO-d₆.

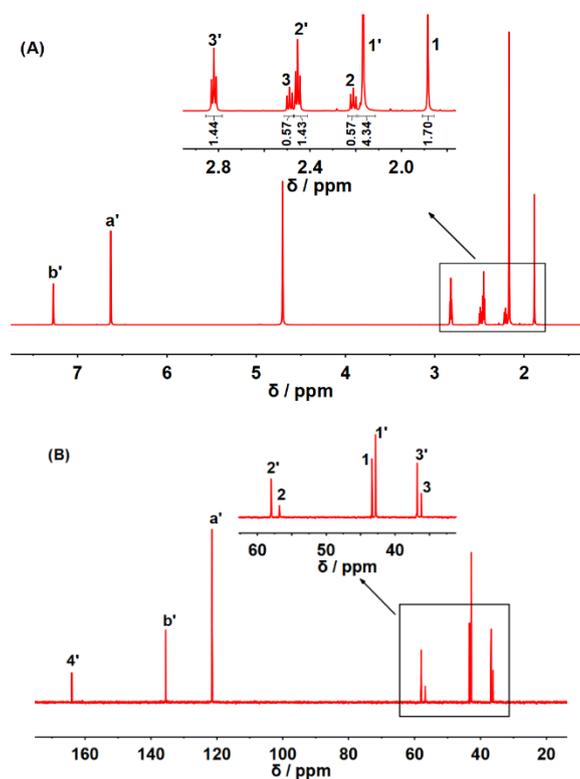


Figure S2. ¹H (A) and ¹³C (B) NMR spectra of [DMEDAH][Im] after CO₂ absorption; D₂O was used as the internal solvent to record the spectra.

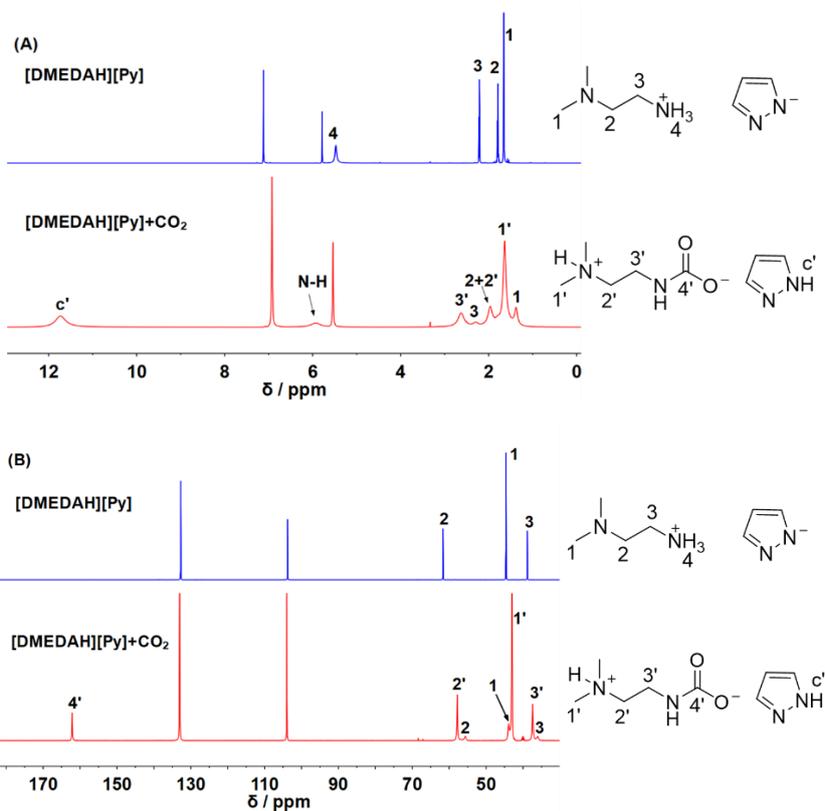


Figure S3. ^1H (A) and ^{13}C (B) NMR spectra of [DMEDAH][Py] before and after CO₂ absorption; DMSO-d₆ was used as the external solvent.

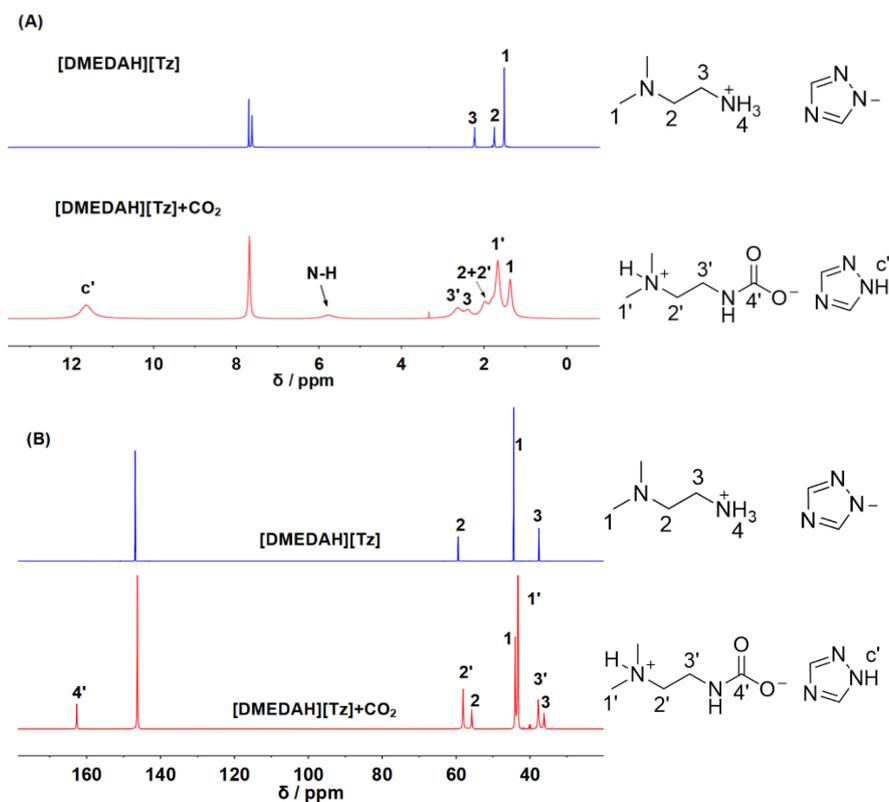


Figure S4. ^1H (A) and ^{13}C (B) NMR spectra of [DMEDAH][Tz] before and after CO₂ absorption; DMSO-d₆ was used as the external solvent.

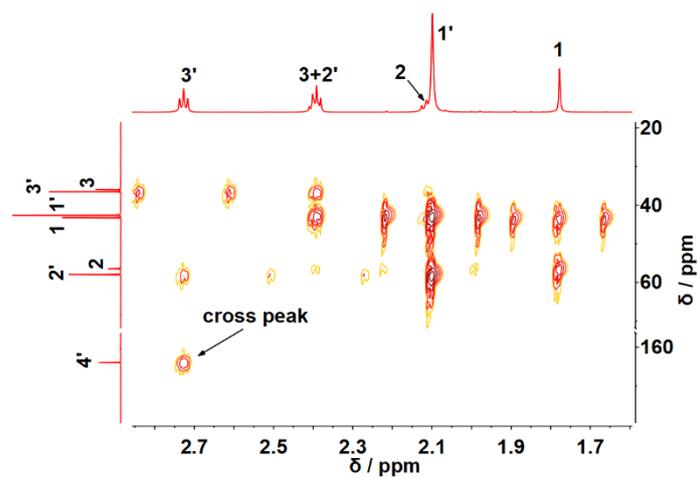


Figure S5. The ^1H - ^{13}C HMBC spectra of [DMEDAH][Py] after CO_2 capture; D_2O was used as the internal solvent to record the spectra.

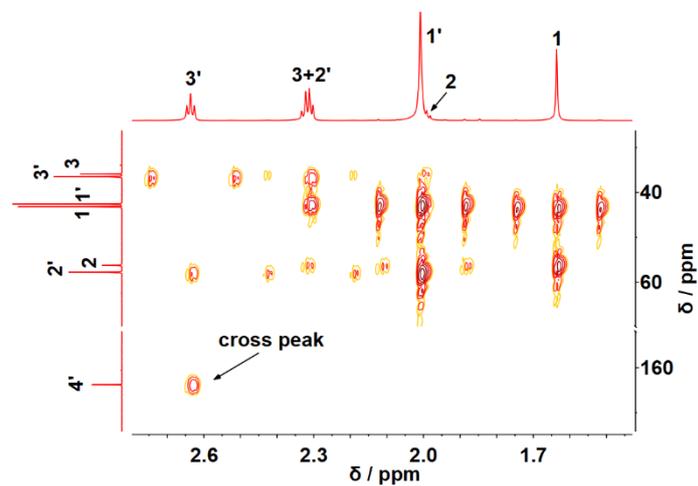


Figure S6. The ^1H - ^{13}C HMBC spectra of [DMEDAH][Tz] after CO_2 capture; D_2O was used as the internal solvent to record the spectra.