

Supporting information

Insight into the effect of physicochemical properties on CO₂ absorption
behavior of imidazole anion-functionalized ionic liquids

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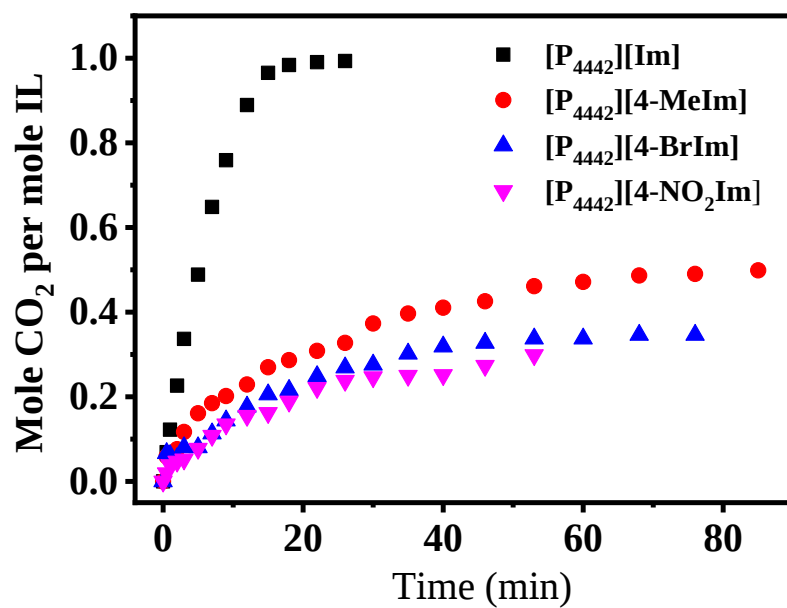
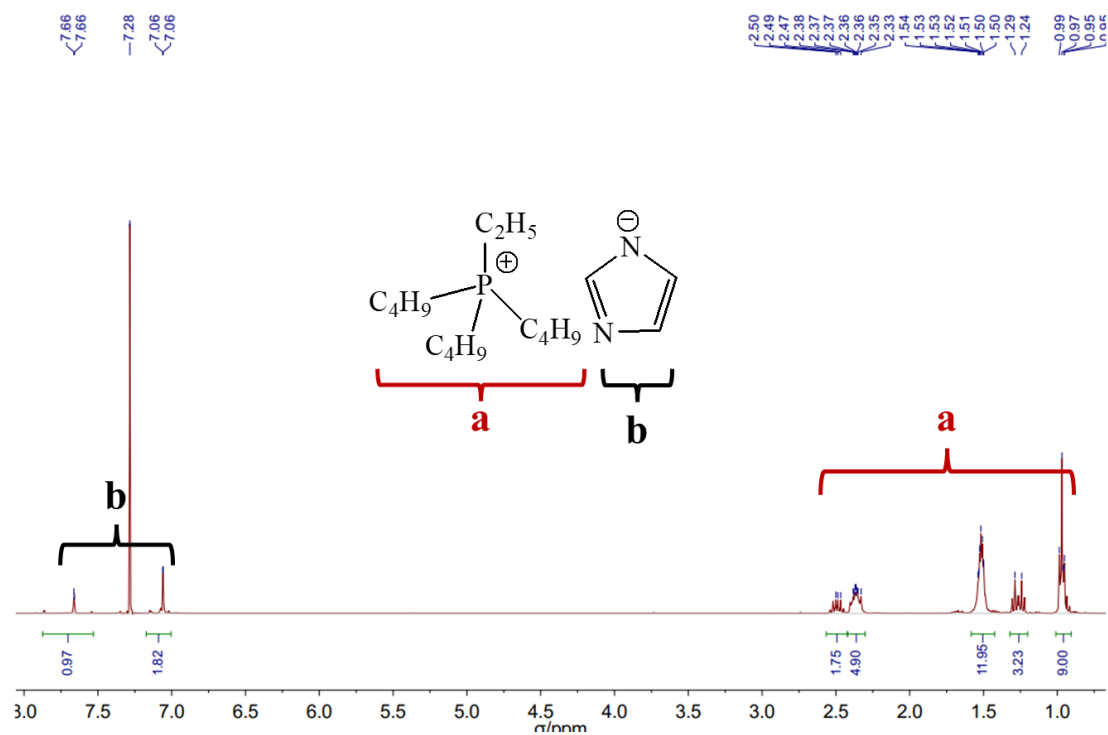
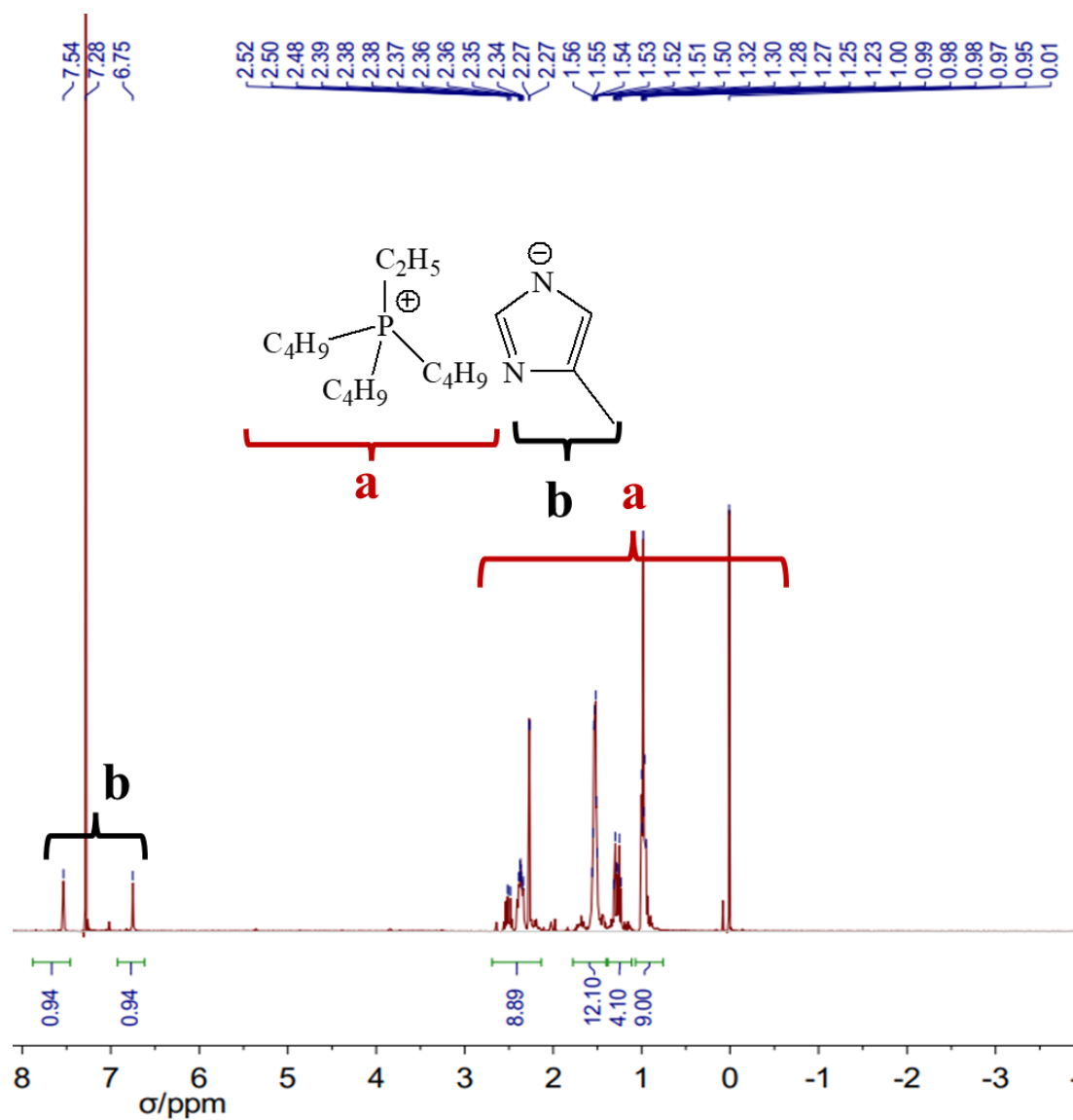


Figure S1 CO₂ absorption behavior of four IFILs at $T=303.15$ K and $p=1.0$ bar [1].

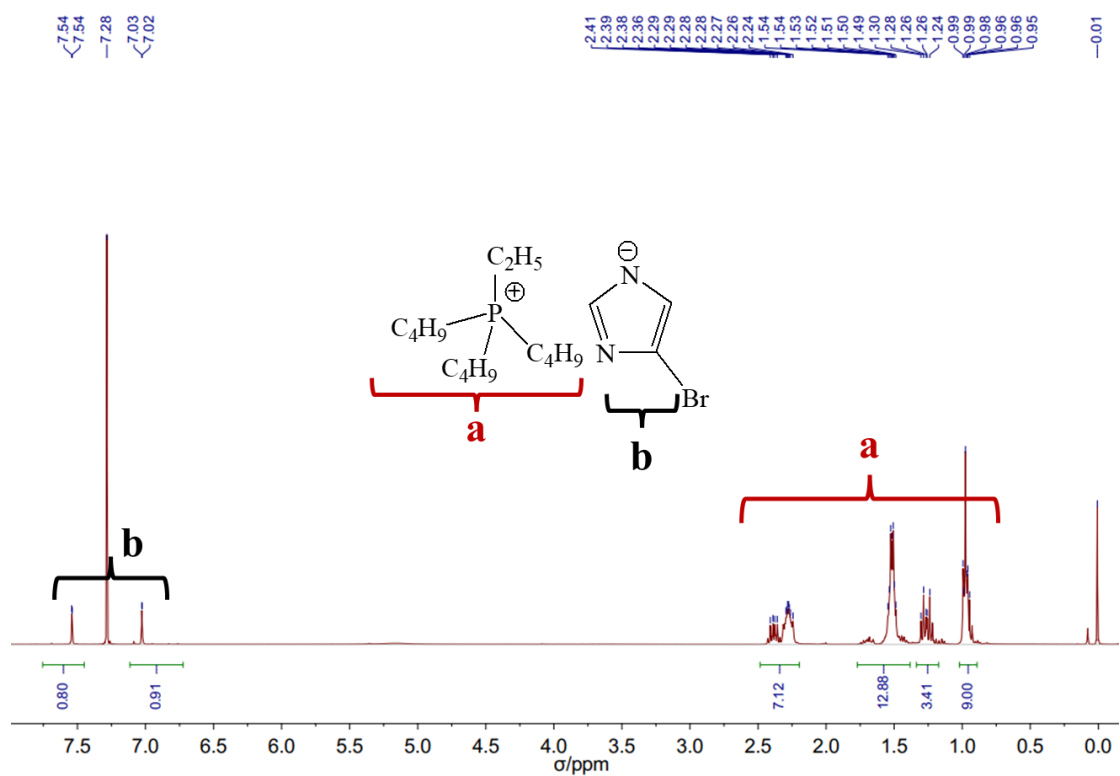
[1] He, Y., Wang, J., Chen, T., Xu, Y. Effects of substituents on carbon capture properties of imidazole anion-functionalized ionic liquids. *Energy Environmental Protection* **36**, 60-65 (2022).



[P₄₄₄₂][Im]: ^1H NMR (CDCl₃): cation, 0.95-0.99 (m, 9H, CH₃), 1.24-1.29 (m, 3H, CH₃), 1.50-1.54 (m, 12H, CH₂), 2.33-2.50 (m, 8H, PCH₂) ppm; anion, 7.06 (m, 2H, CH), 7.66 (s, H, N=CH) ppm.



[P₄₄₄₂][4-MeIm]: ¹H NMR (CDCl₃): cation, 0.95-0.99(m, 9H, CH₃), 1.30-1.56 (m, 12H, CH₂), 2.27-2.52 (m, 8H, PCH₂) ppm; anion, 1.00-1.23 (m, 3H, CH₃), 6.75 (m, H, CH), 7.54 (s, H, CH) ppm.



[P₄₄₄₂][4-BrIm]: ^1H NMR (CDCl_3): cation, 0.95-0.99 (m, 9H, CH_3), 1.24-1.49 (m, 3H, CH_3), 1.50-1.54 (m, 12H, CH_2), 2.24-2.41 (m, 8H, PCH_2) ppm; anion, 7.02 (m, H, CH), 7.54 (s, H, CH) ppm.

Figure S2 ^1H NMR spectra and chemical shifts data of three IFILs Δ