Electronic Supplementary Information (ESI)

Expanded graphite/phenolic resin-based carbon composite adsorbents for post-combustion CO₂ capture

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Fig. S1 \( \text{N}_2 \) sorption isotherms at 77K for expandable graphite and expanded graphite (EG).

Fig. S2 \( \text{CO}_2 \) adsorption isotherms at 273 K for the activated phenolic resin (Res-60) and the EG composites activated for 30 min.
**Fig. S3** Comparison of narrow micropore (< 1 nm) size distributions of EG-2-30 obtained from CO\textsubscript{2} adsorption at 273 K and N\textsubscript{2} adsorption at 77 K.

**Fig. S4** Comparison of narrow micropore (< 1 nm) size distributions of EG-2-30 and EG-2-15 obtained from CO\textsubscript{2} adsorption at 273 K.
**Fig. S5** CO$_2$ and N$_2$ adsorption isotherms at 298 K for the EG composites activated for 30 min.

**Fig. S6** Fittings of initial adsorption isotherms at 298K of CO$_2$ and N$_2$ for EG-2-15 to obtain the Henry’s law constants for estimation of CO$_2$/N$_2$ selectivity.
Fig. S7 CO$_2$ adsorption isotherms for EG-2-15 at 273, 298 and 323 K.