Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Facile Synthesis of High-surface-area Activated Carbon from Coal for Supercapacitor and High CO_2 Sorption

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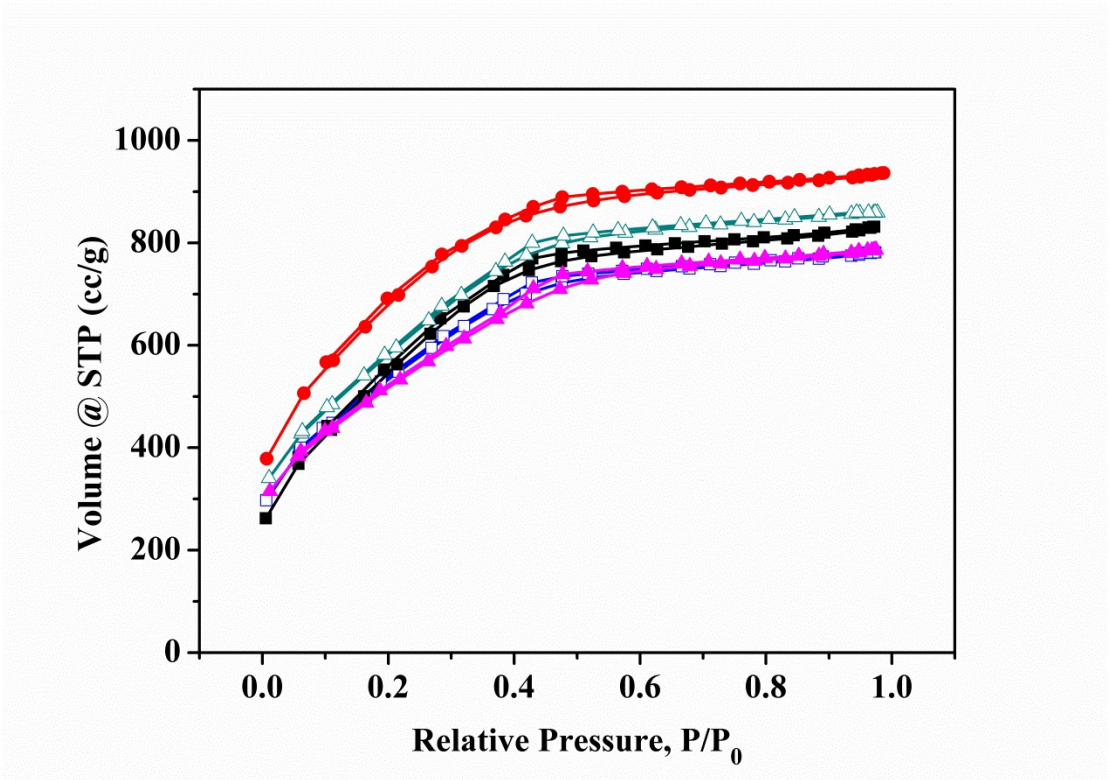

Fig. S1 N_2 adsorption isotherms at 77 K with different activation time
□ AC4T800t1, ■ AC4T800t1.5, ●AC4T800t2, △ AC4T800t2.5, ▲ AC4T800t3

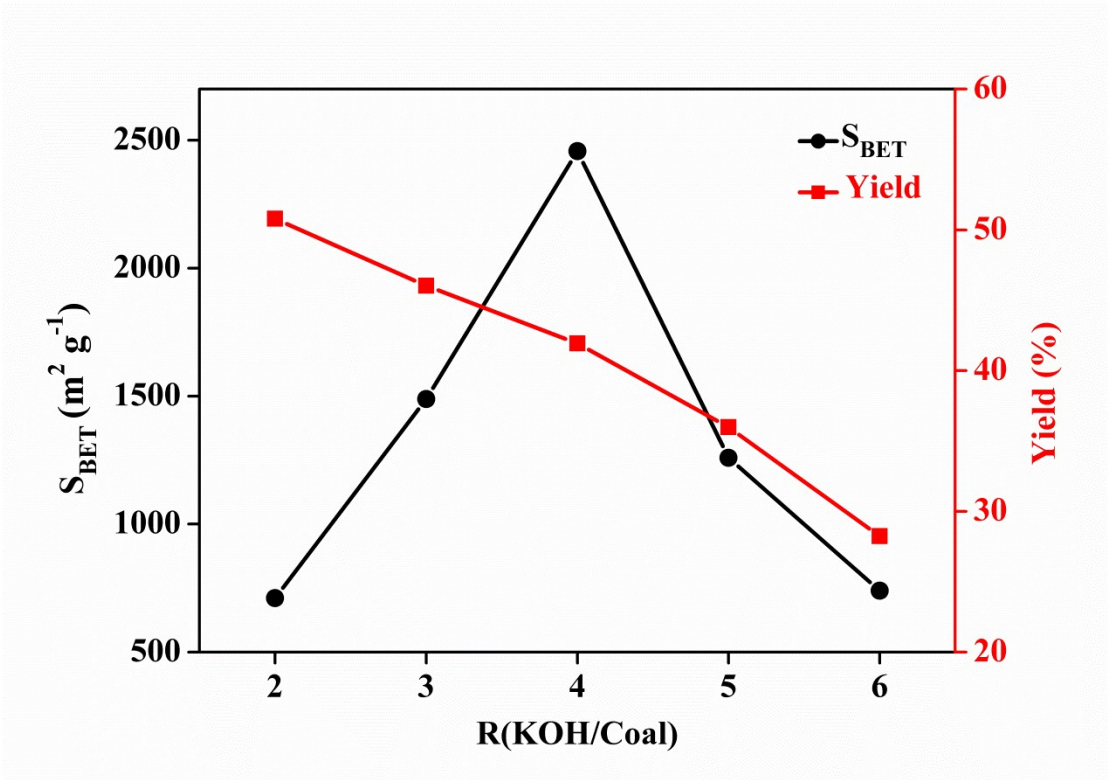

Fig. S2 Effect of KOH/coal ratio on the BET surface area and yield

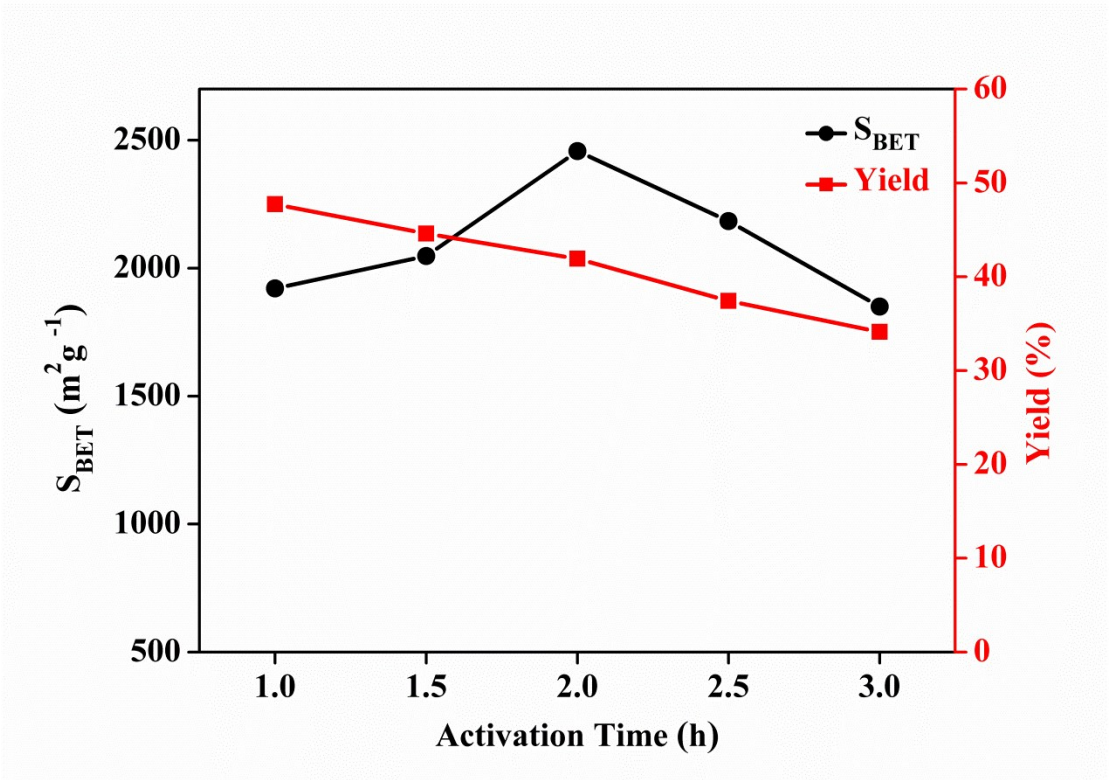

Fig. S3 Effect of activation time on the BET surface area and yield

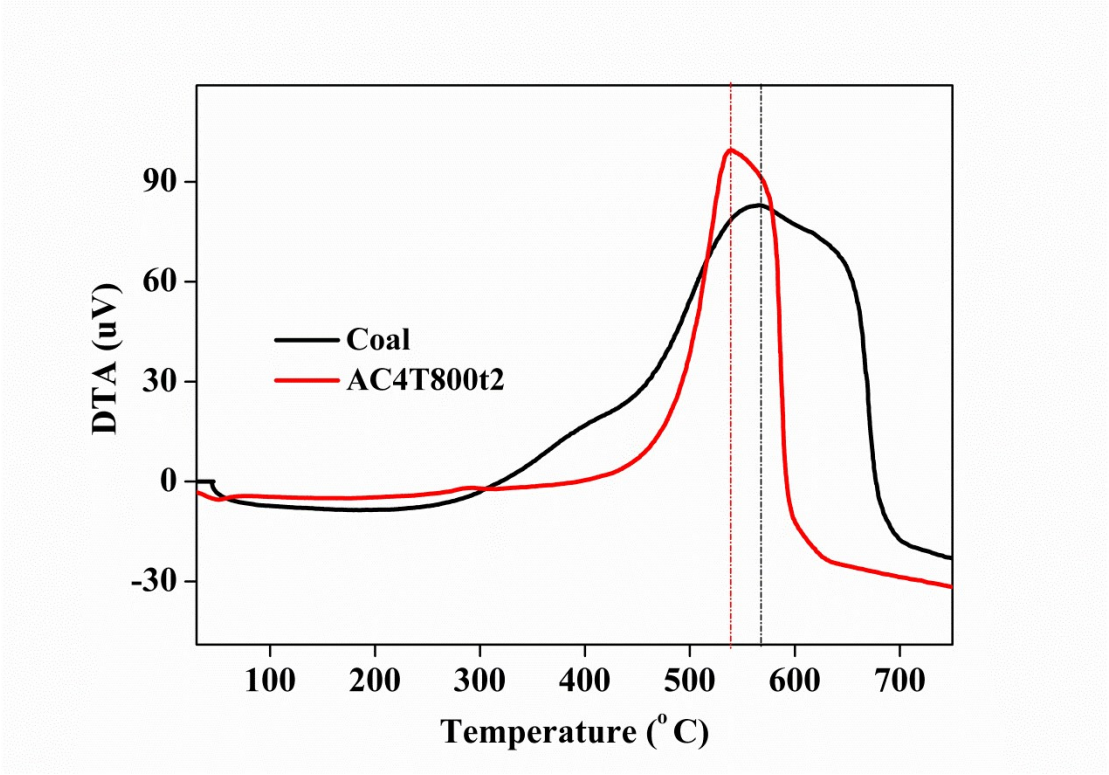

Fig. S4 DTA curves of Coal and AC4T800t2.

Table S1 Effect of activation time on porous texture

Sample	Yield (%)	BET (m^2/g)	V_{mic} (cm^3/g)	V_t (cm^3/g)
AC4T800t1	47.73	1921	0.7558	1.209
AC4T800t1.5	44.61	2048	0.7553	1.286
AC4T800t2	41.93	2457	0.9622	1.448
AC4T800t2.5	37.43	2184	0.8414	1.377
AC4T800t3	34.12	1850	0.7364	1.217

Keeping KOH/coal ratio at 4 and activation temperature at 800 °C

Table S2 Porous texture of ACs as working electrode

Sample	BET (m^2/g)	V_{mic} (cm^3/g)	V_t (cm^3/g)	V_{mic}/V_t (%)	C (F/g)
AC6T800t2	740	0.2841	0.5289	53.72	161
AC5T800t2	1259	0.5384	0.7856	68.53	208
AC3T800t2	1498	0.6554	0.8372	78.28	267
AC4T800t2.5	2184	0.8414	1.377	61.10	346
AC4T800t2	2457	0.9622	1.448	66.45	384