

Electronic Supplementary Materials

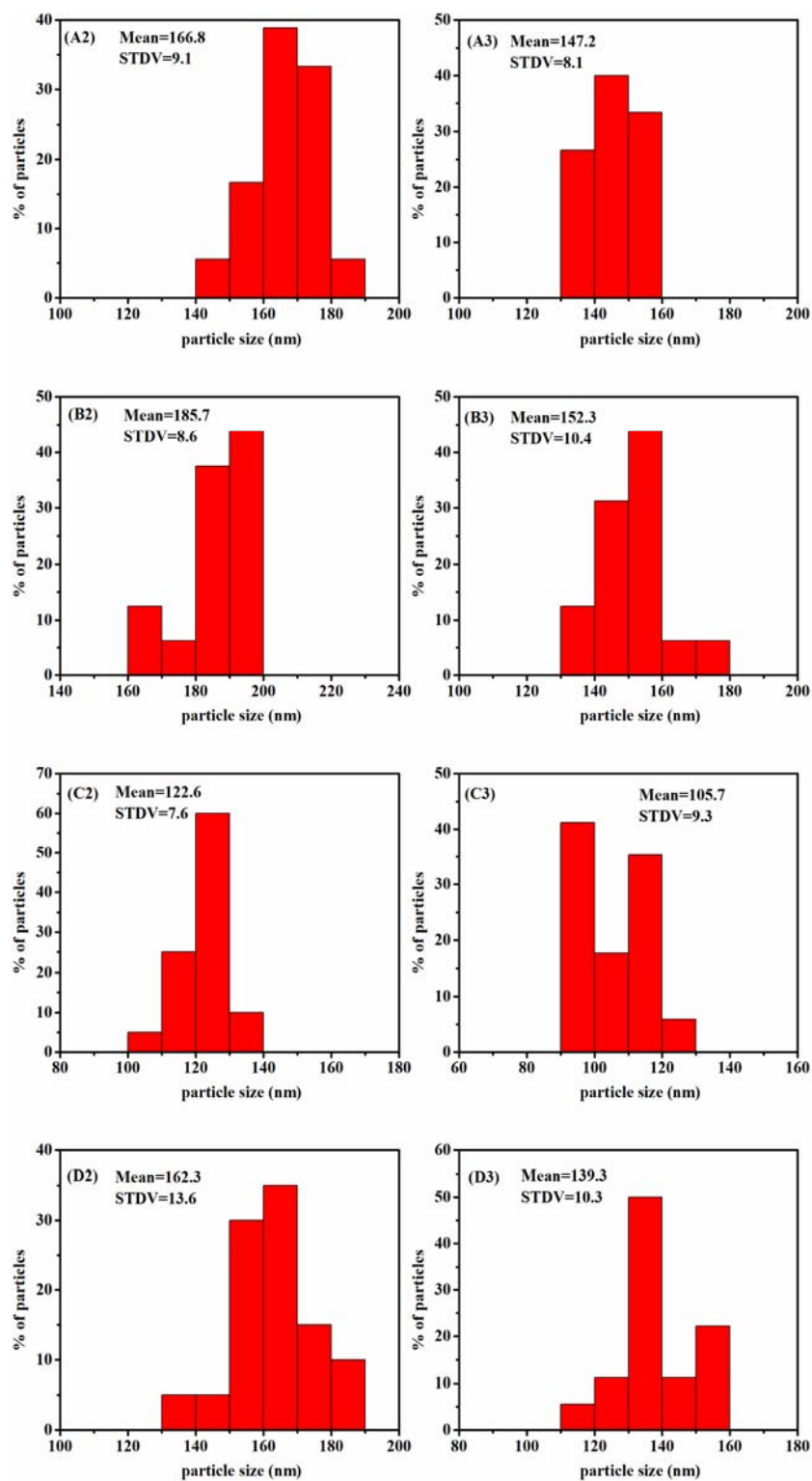


Fig. S1 Representative particle size distributions of soot under different pyrolysis conditions.

Table S1 Some relative parameter of the experimental device

Device	MFC	Syringe pump	Thermal couple	Electric stove

Company	Sevenstar	Harvard	TES	BEQ
Type	CS200A	PHD2000	Ktype	BTF-1500C
Accuracy	$\pm 0.35\%$ F.S, $< 35\%$ F.S. $\pm 1\%$ S.P, $\geq 35\%$ F.S.	$\pm 0.5\%$	$\pm 1\text{K}$	$\pm 1^\circ\text{C}$

Table S2 Parameters of the morphology of the agglomerate in the TEM pictures: aggregate projected maximum length (L), radius of gyration (R_g), the aggregate projected area (A_a), and number of particles per agglomerate (N)

Label	Condition	L/nm	R_g/nm	A_a/nm^2	N
A2	1223 K, 0%CO ₂	2170	723	1365645	109
B2	1223 K, 10%CO ₂	2265	755	1536216	98
C2	1223 K, 50%CO ₂	2574	858	1501550	239
D2	1223 K, 100%CO ₂	2348	783	1305947	110
A3	1273 K, 0%CO ₂	1727	576	936792	95
B3	1273 K, 10%CO ₂	2100	700	1385170	136
C3	1273 K, 50%CO ₂	1890	630	971851	205
D3	1273 K, 100%CO ₂	2049	683	1274618	151