Supplementary Materials

A Novel Mesoporous Activated Carbon Derived from *Calliandra calothyrsus* via Physical Activation: Saturation and Superheated

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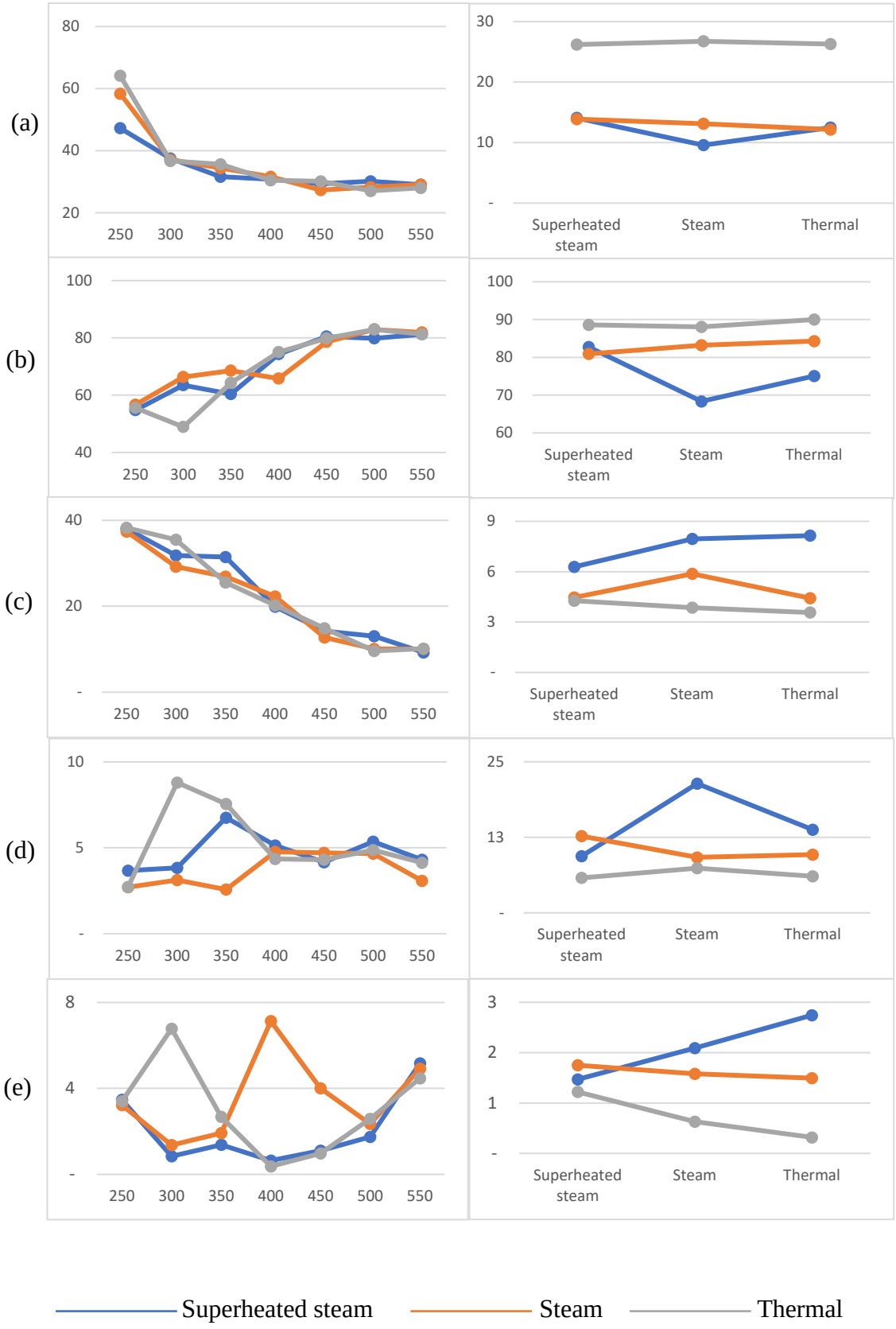


Figure S1. Proximate property: char on the left side, activated carbon on the right side. Yield (a), fixed carbon (b), volatile (c), ash (d) and moisture (e).

Table S1. BJH pore distribution report and physical characteristic.

Sample	% Pore Size Range (nm)				Vol	Vol_{mic}	BET	Iodine
	2–10	10–20	20–50	> 50			m^2/g	mg/g
SS–SS	75.34	10.21	4.54	9.91	0.38	0.29	601.10	848.29
S–SS	75.46	11.27	5.87	7.41	0.37	0.28	597.55	870.43
T–SS	75.18	11.64	6.44	6.74	0.37	0.27	568.11	781.20
SS–S	77.80	9.92	4.99	7.30	0.40	0.31	642.26	853.47
S–S	79.39	9.79	4.95	5.88	0.37	0.30	613.41	844.46
T–S	79.50	9.77	4.55	6.18	0.34	0.28	572.22	784.89
SS–T	69.74	13.87	6.54	9.85	0.04	0.02	43.39	716.53
S–T	50.12	13.03	7.77	29.08	0.03	0.01	22.82	690.04
T–T	47.85	14.07	9.86	28.21	0.02	000	6.42	195.20

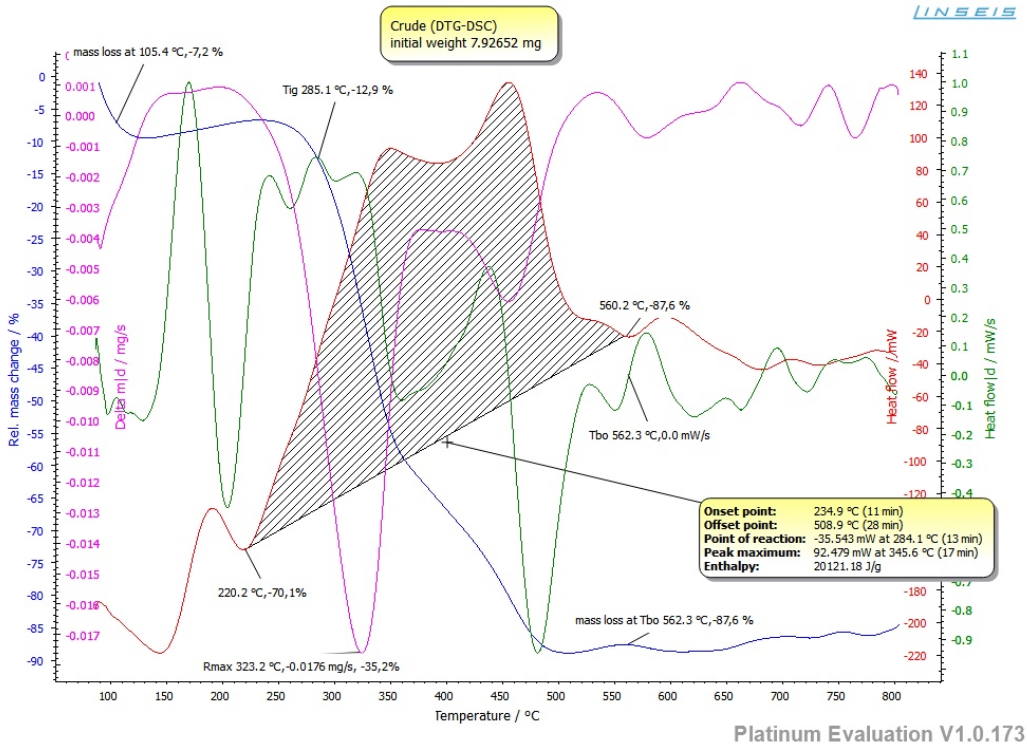


Figure S2a. Thermogram of crude material.

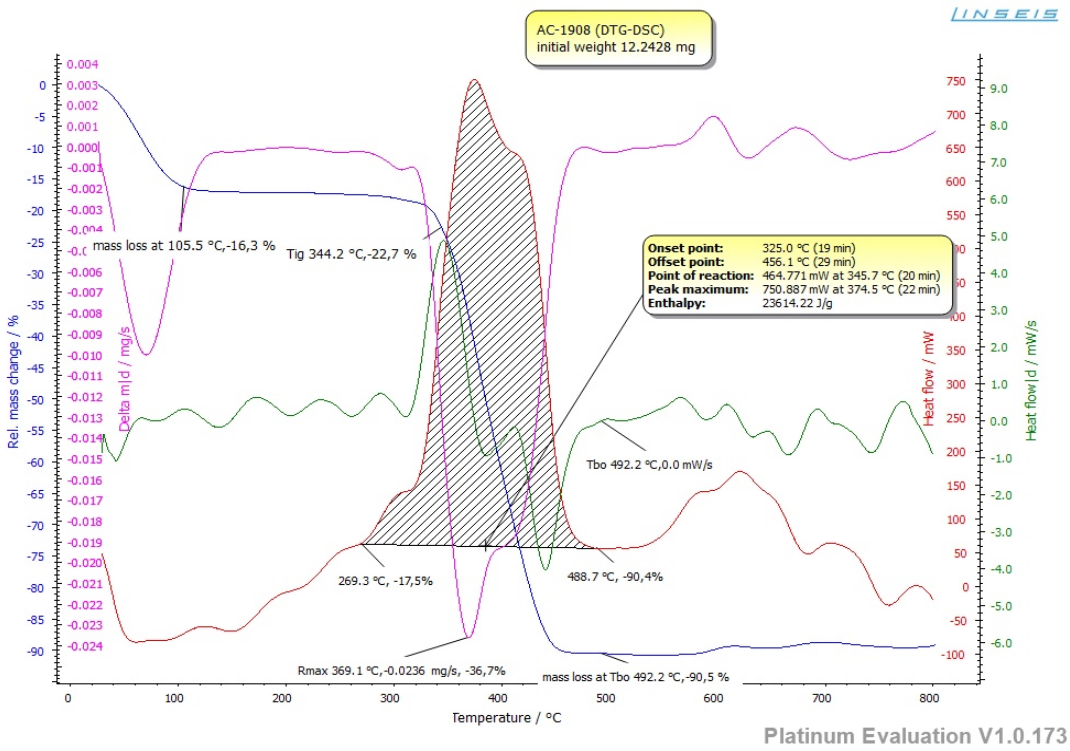


Figure S2b. Thermogram of T–SS activated carbon.

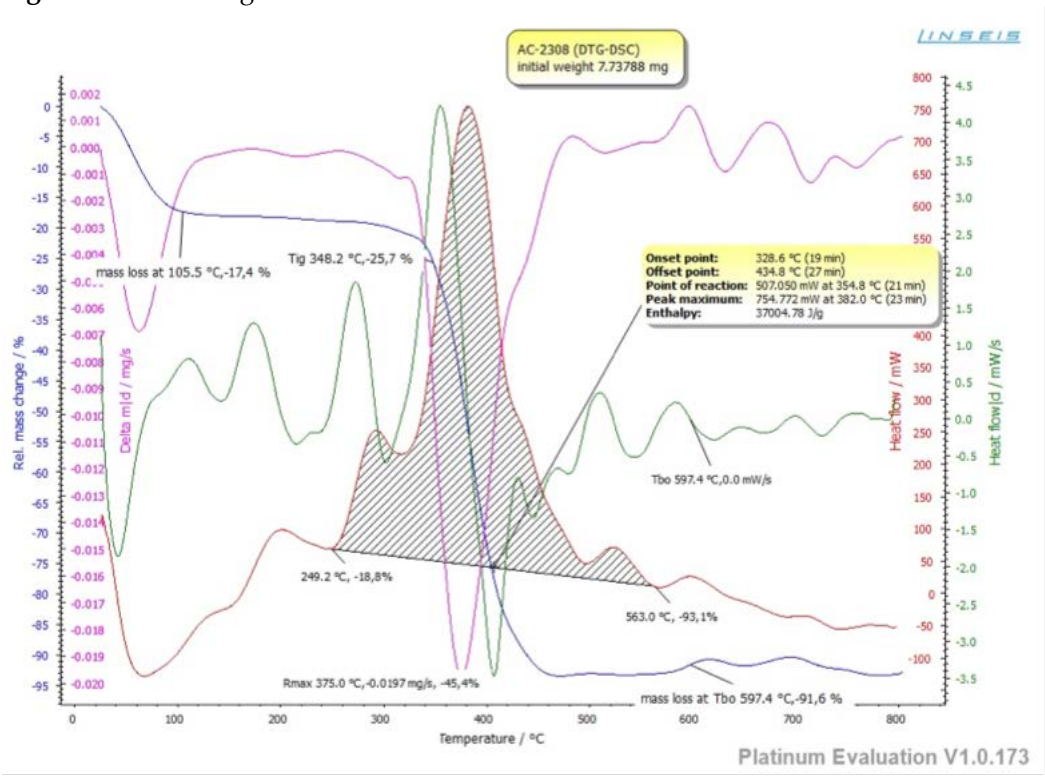


Figure S2c. Thermogram of S–SS activated carbon.

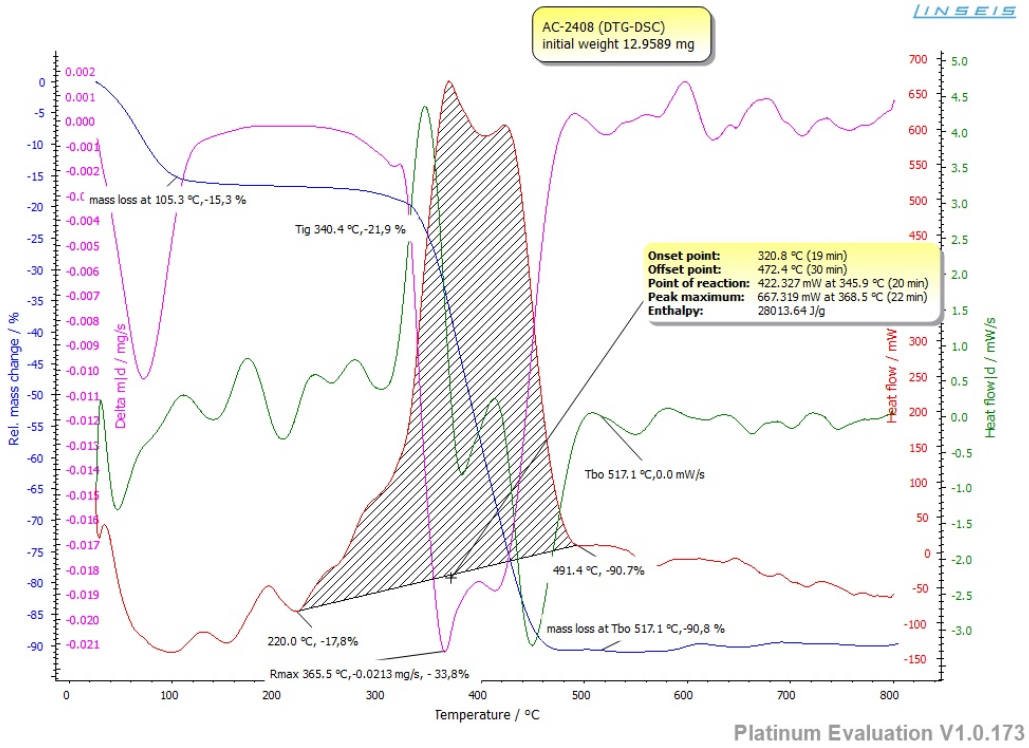


Figure S2d. Thermogram of SS–SS activated carbon.

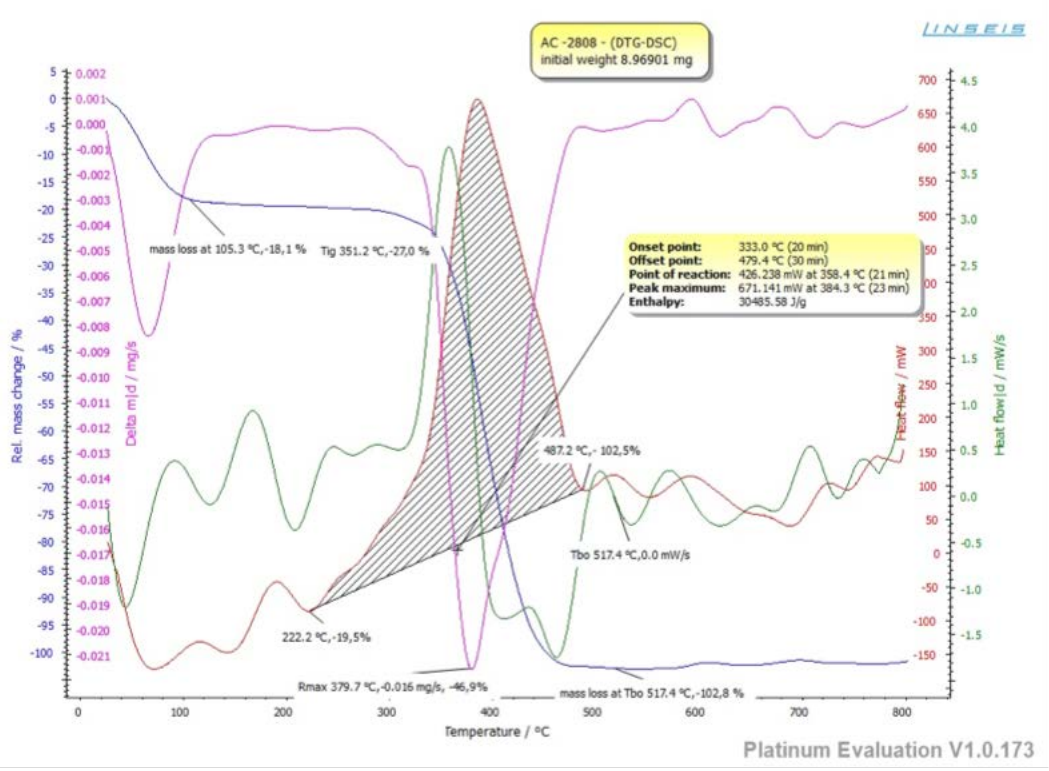


Figure S2e. Thermogram of SS–S activated carbon.

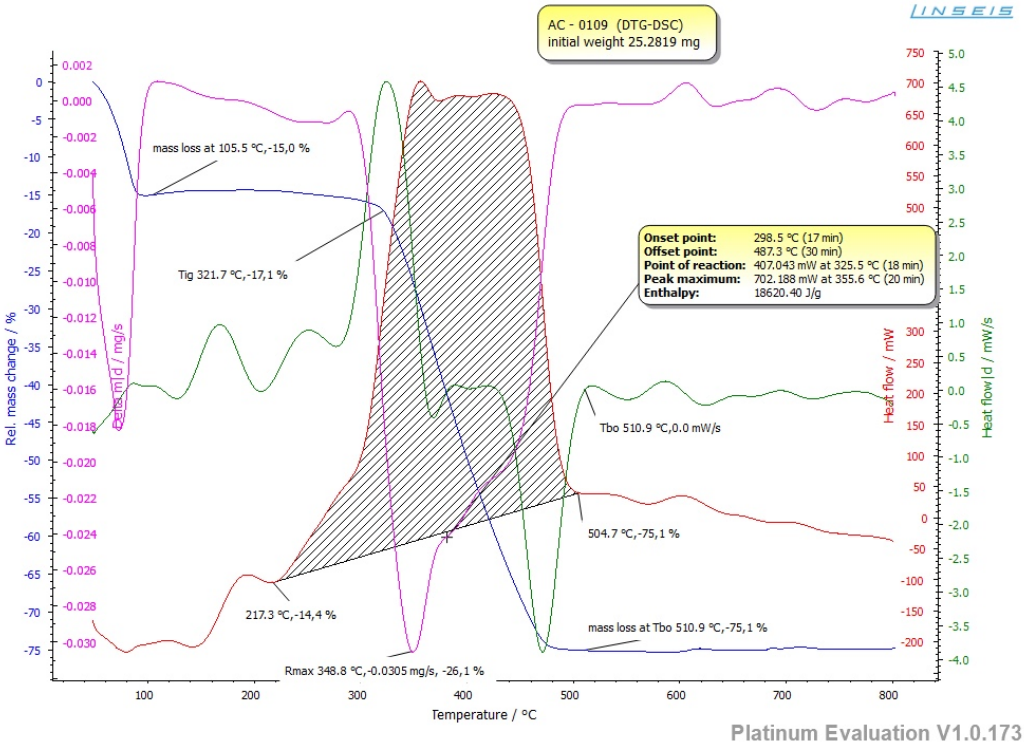


Figure S2f. Thermogram of S–S activated carbon.

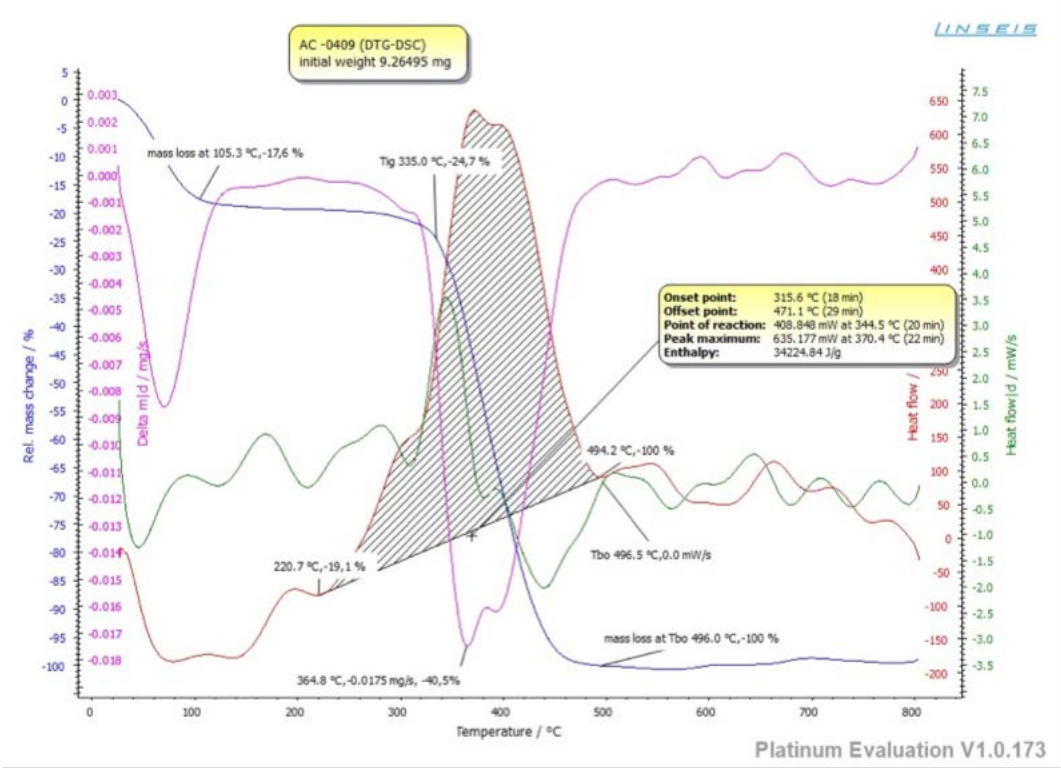


Figure S2g. Thermogram of T–S activated carbon.

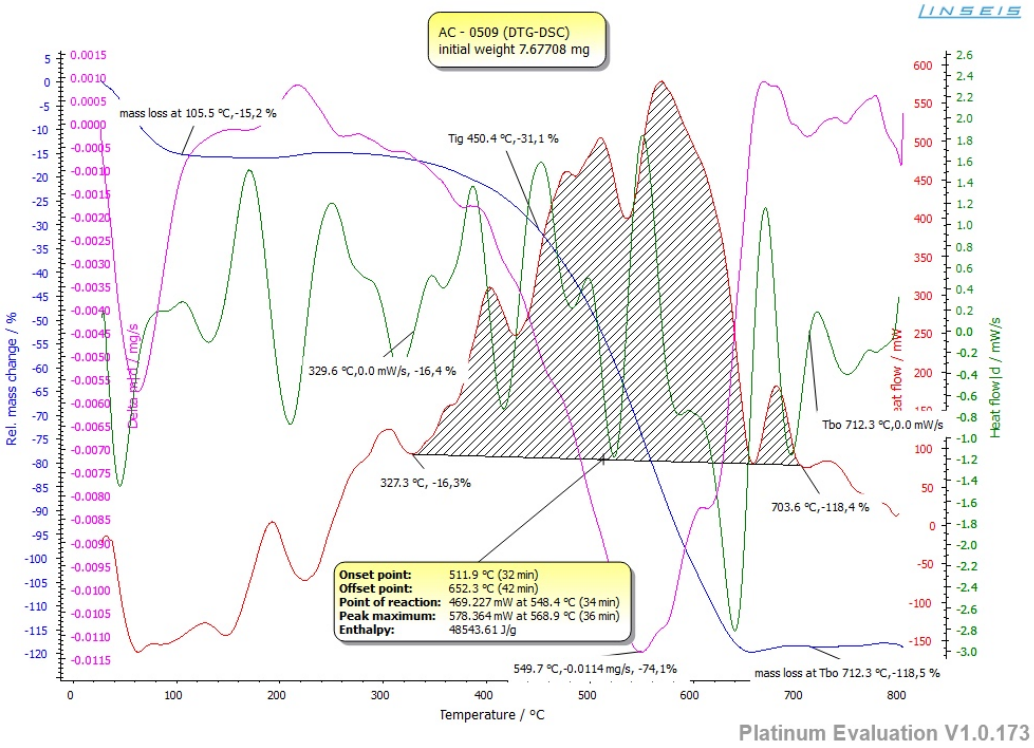


Figure S2h. Thermogram of SS–T activated carbon.

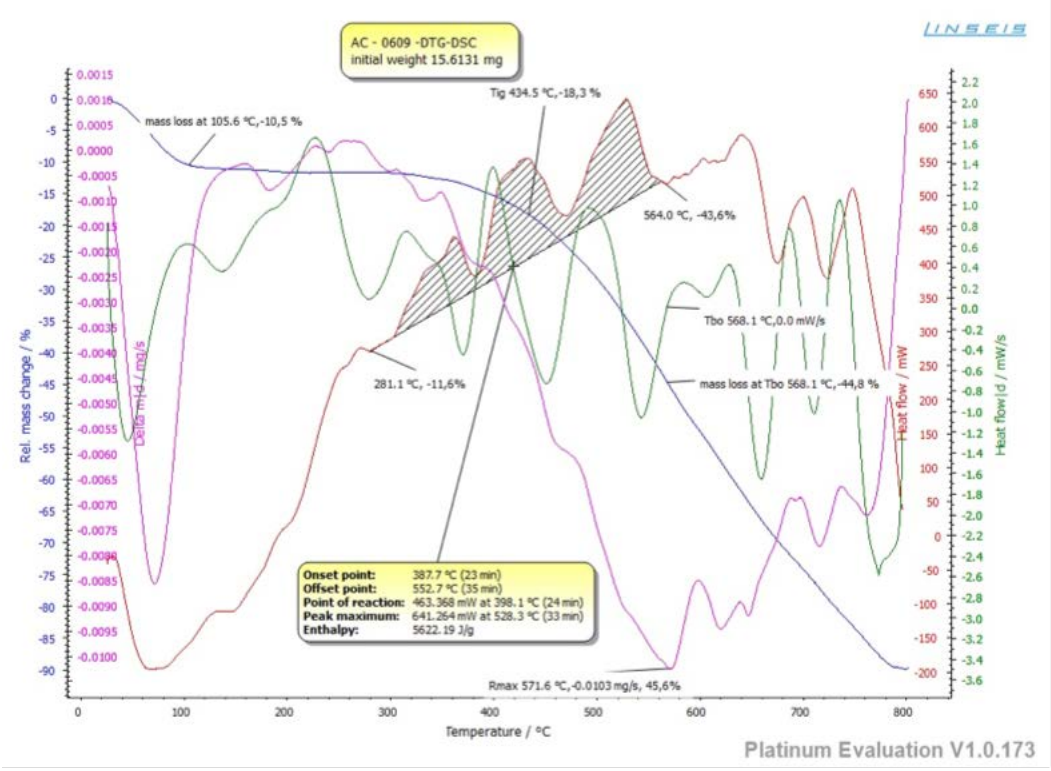


Figure S2i. Thermogram of S–T activated carbon.

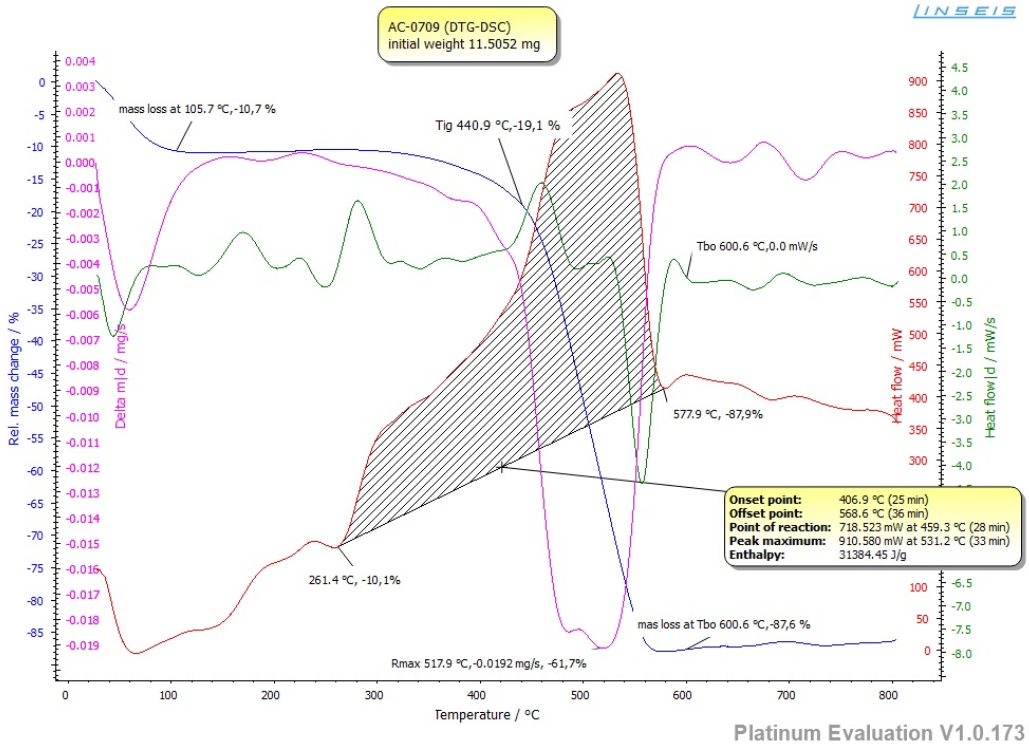


Figure S2j. Thermogram of T–T activated carbon.

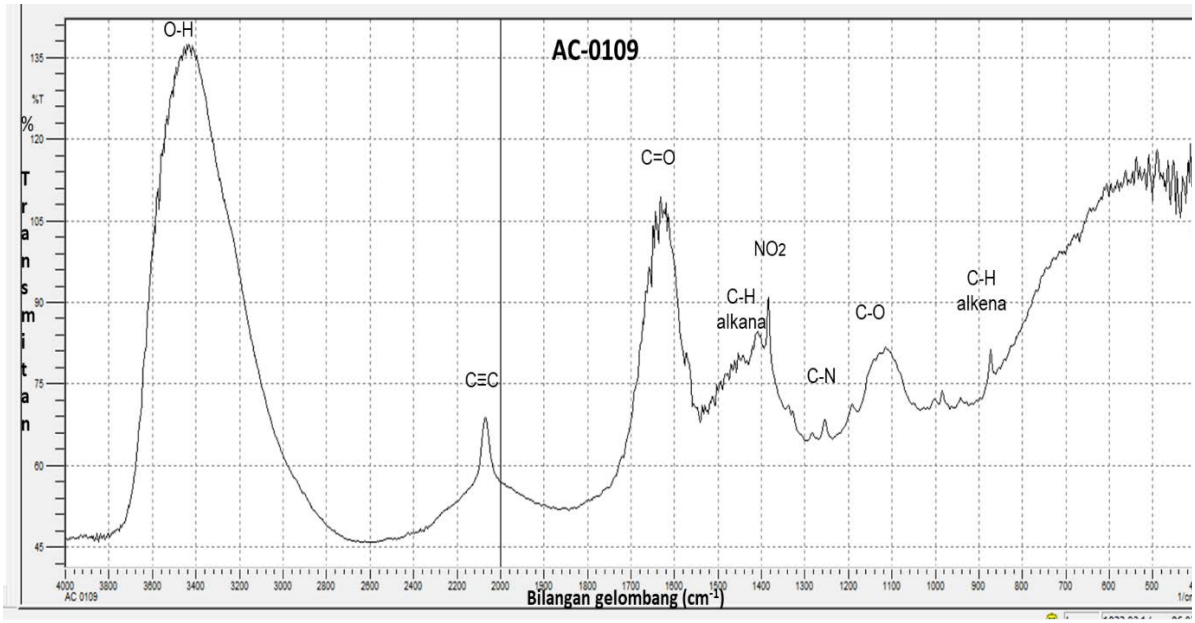


Figure S3a. FTIR spectra of S–S activated carbon.

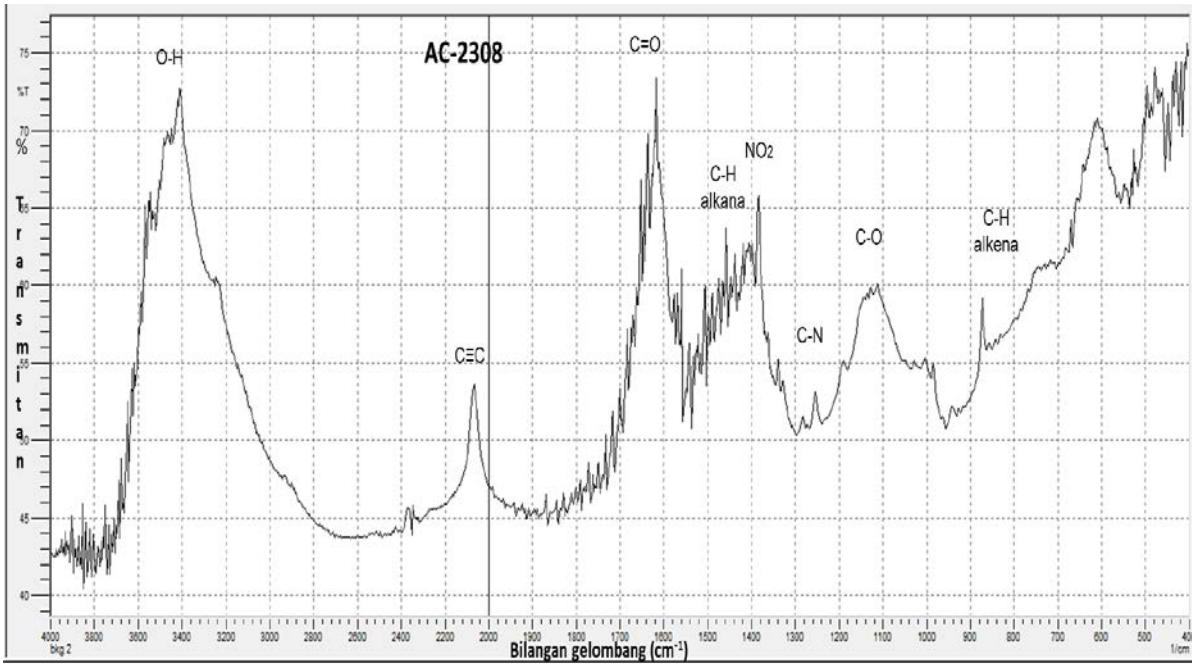


Figure S3b. FTIR spectra of S–SS activated carbon.

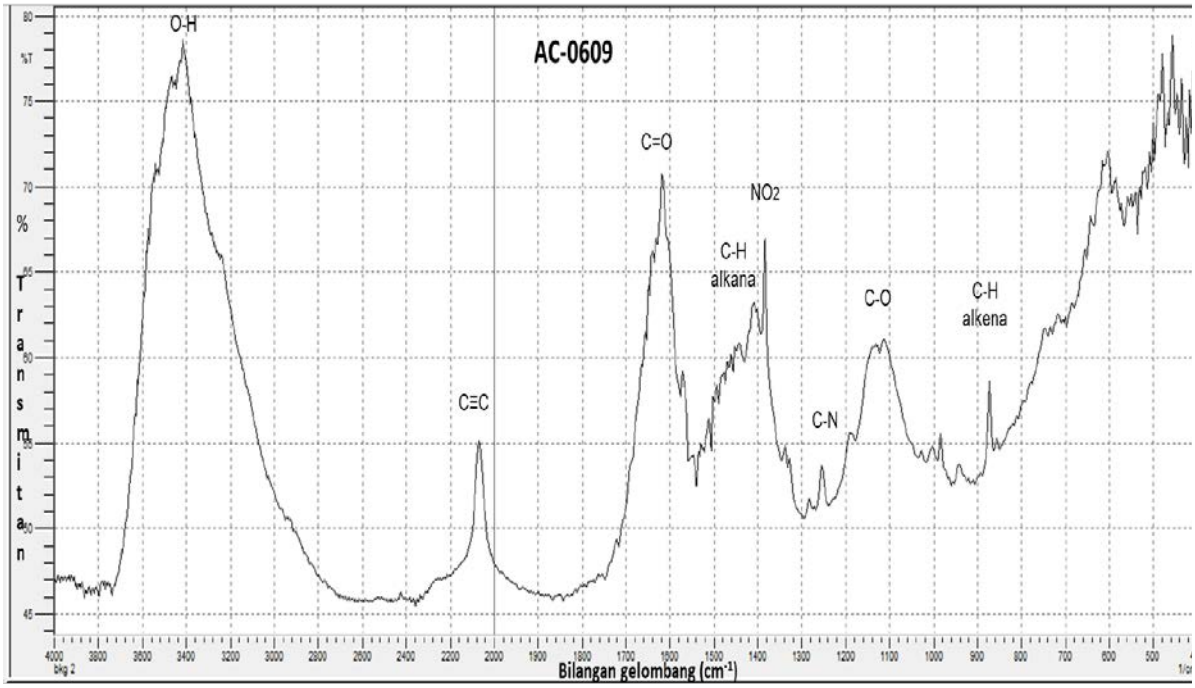


Figure S3c. FTIR spectra of S–T activated carbon.

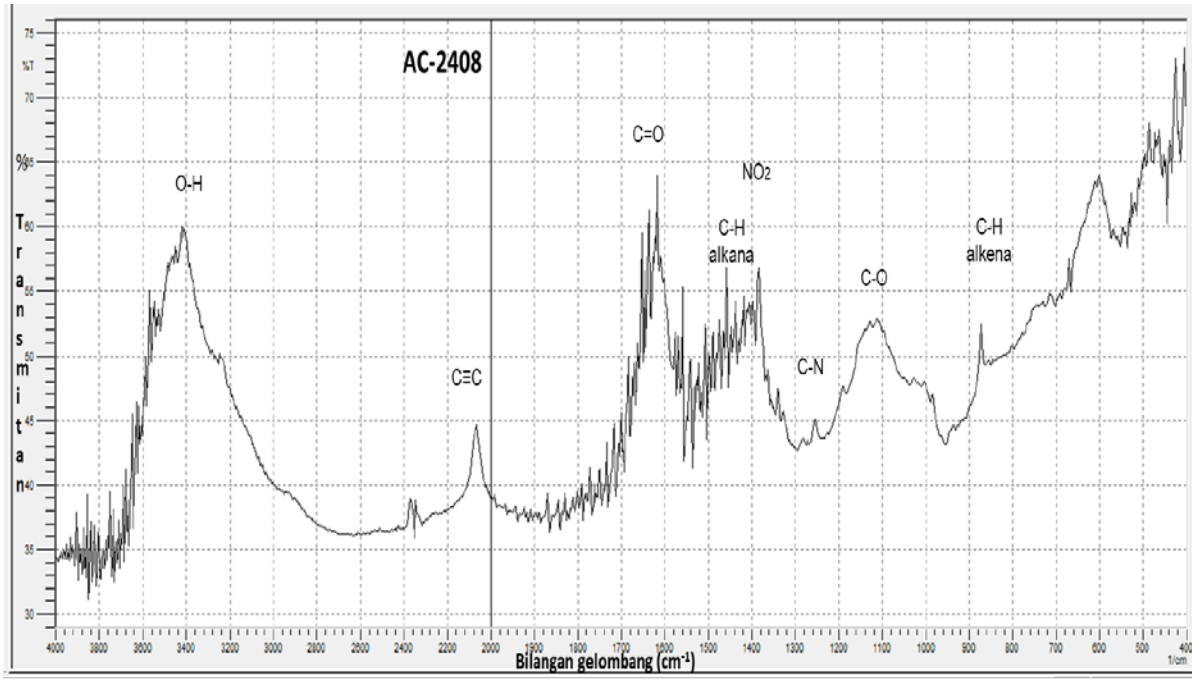


Figure S3d. FTIR spectra of SS–SS activated carbon.

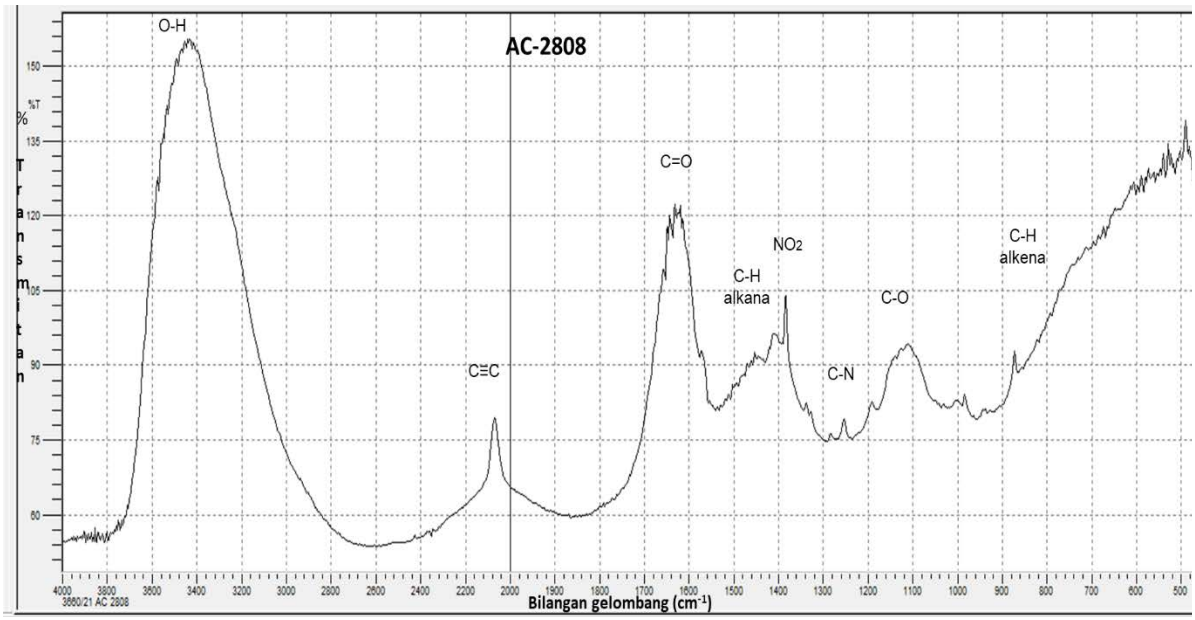


Figure S3e. FTIR spectra of SS–S activated carbon.

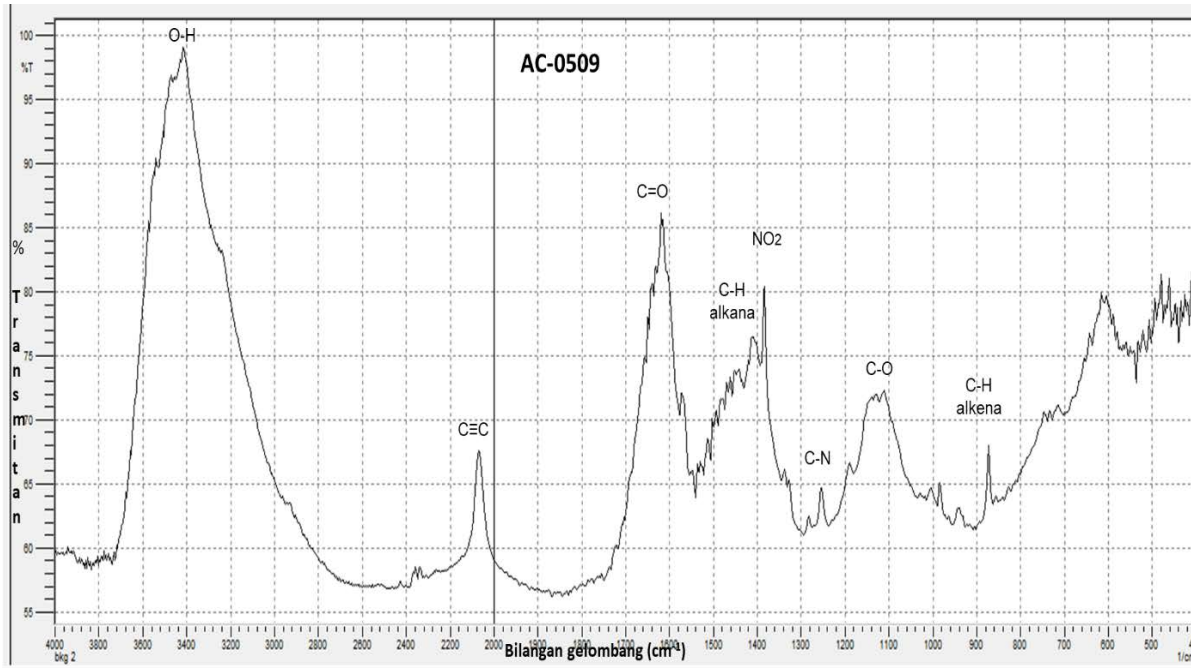


Figure S3f. FTIR spectra of SS–T activated carbon.

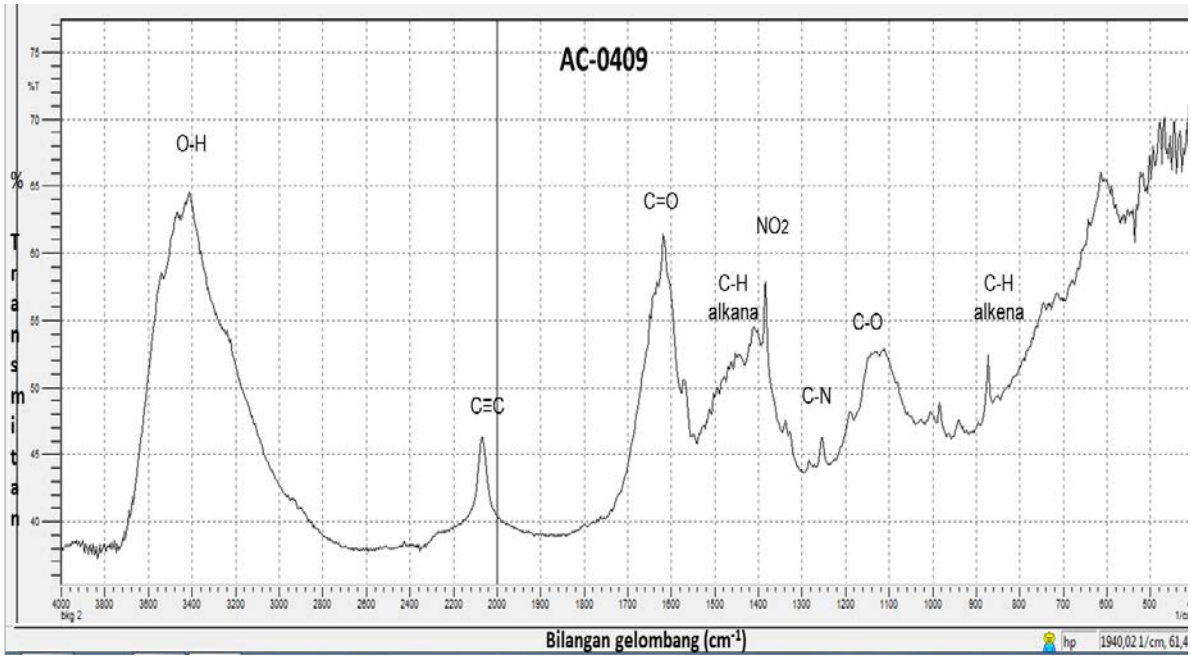


Figure S3g. FTIR spectra of T–S activated carbon.

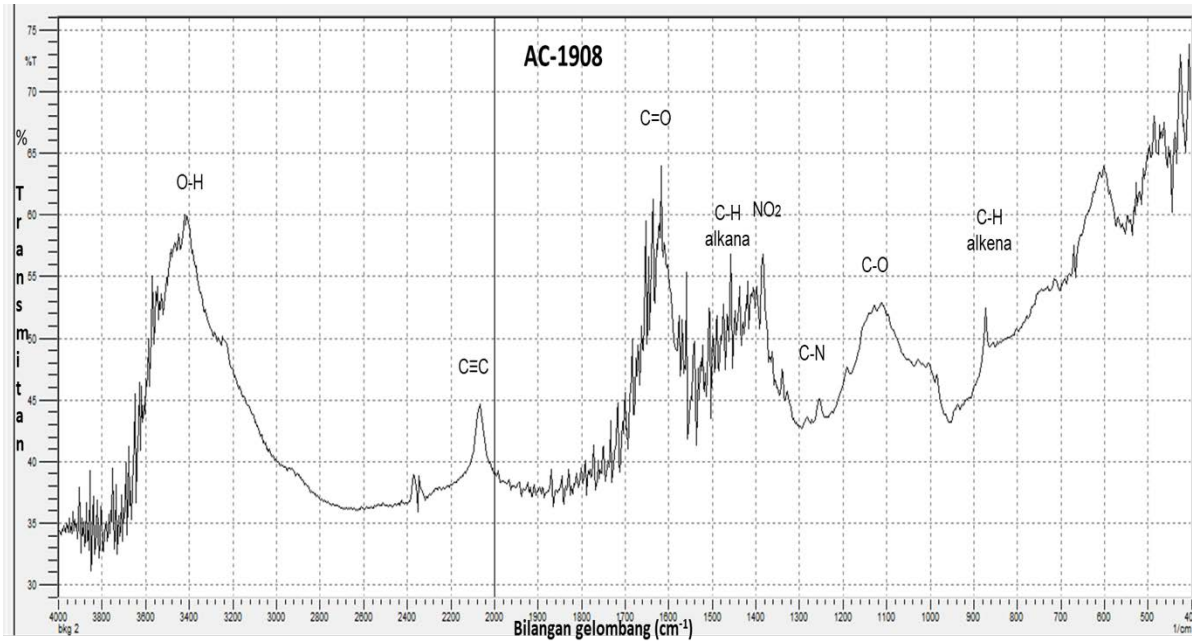


Figure S3h. FTIR spectra of T–SS activated carbon.

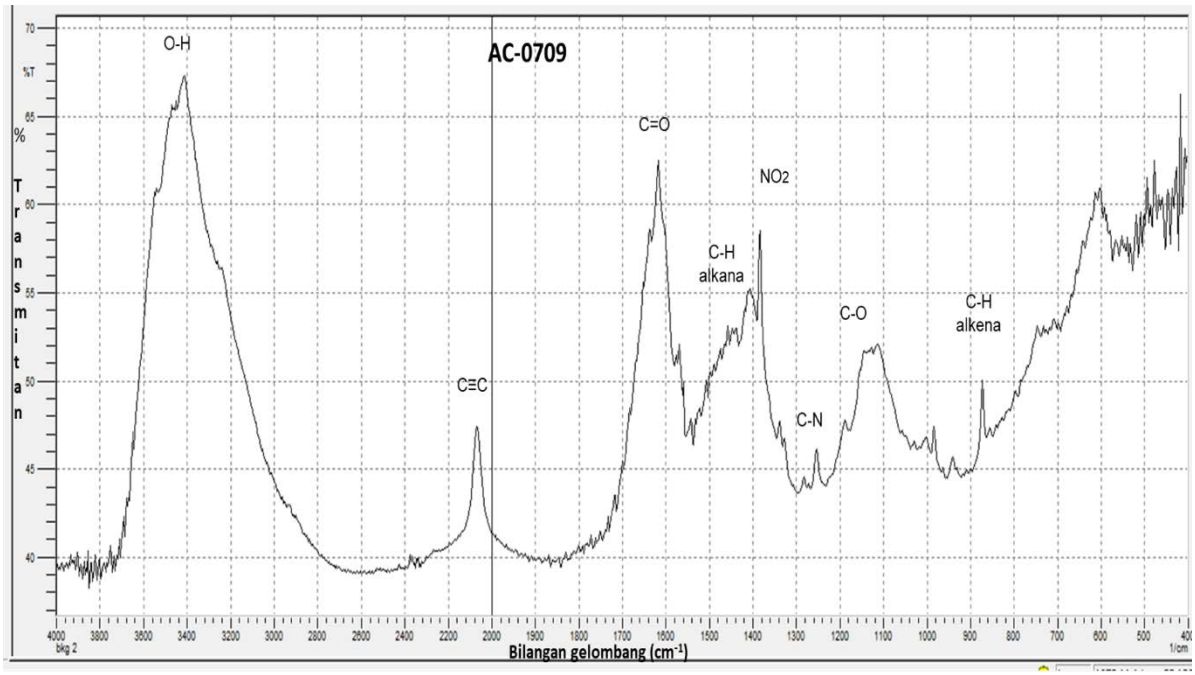


Figure S3i. FTIR spectra of T–T activated carbon.

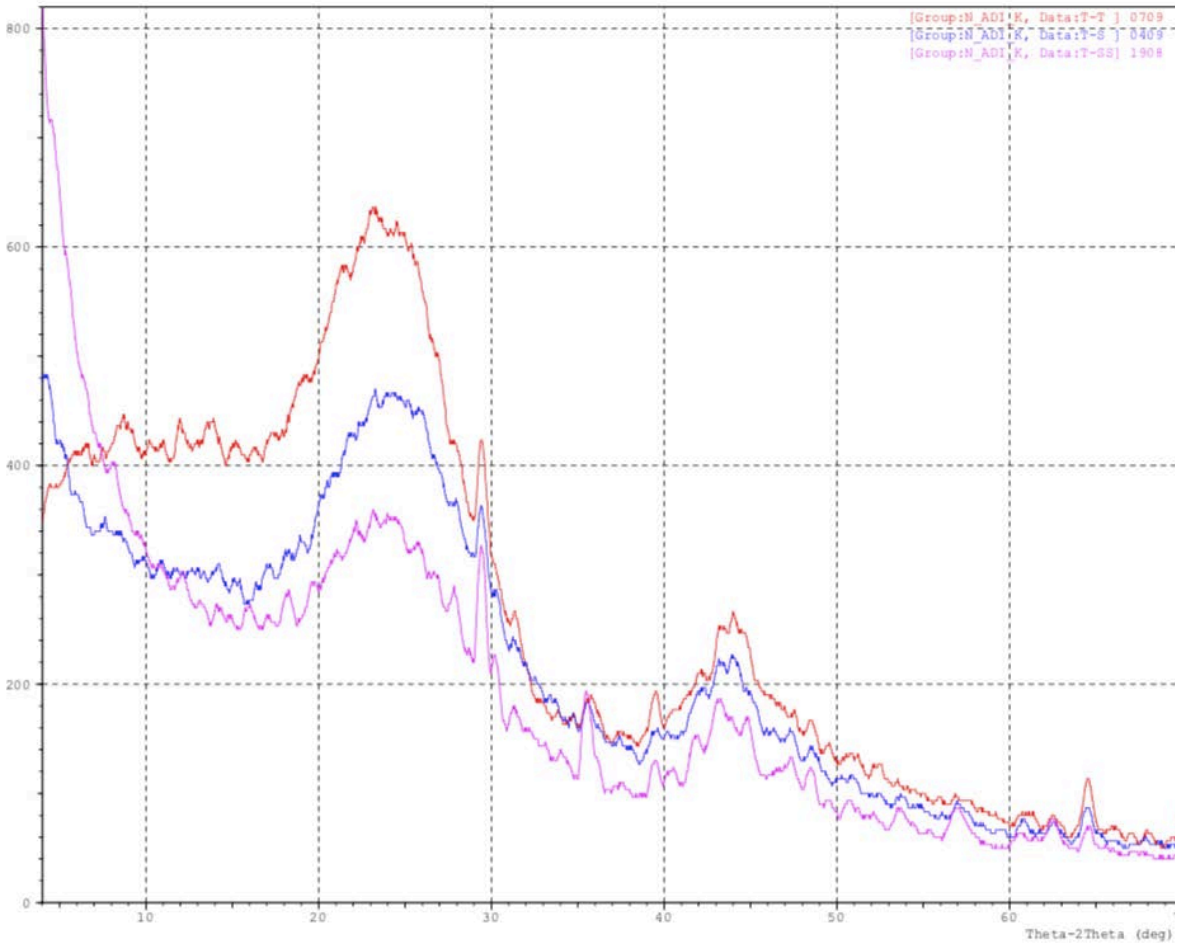


Figure S4a. The XRD patterns of activated carbon from thermal pyrochar. Note: red line T–T activated carbon, blue line T–S activated carbon, purple line T–SS activated carbon.

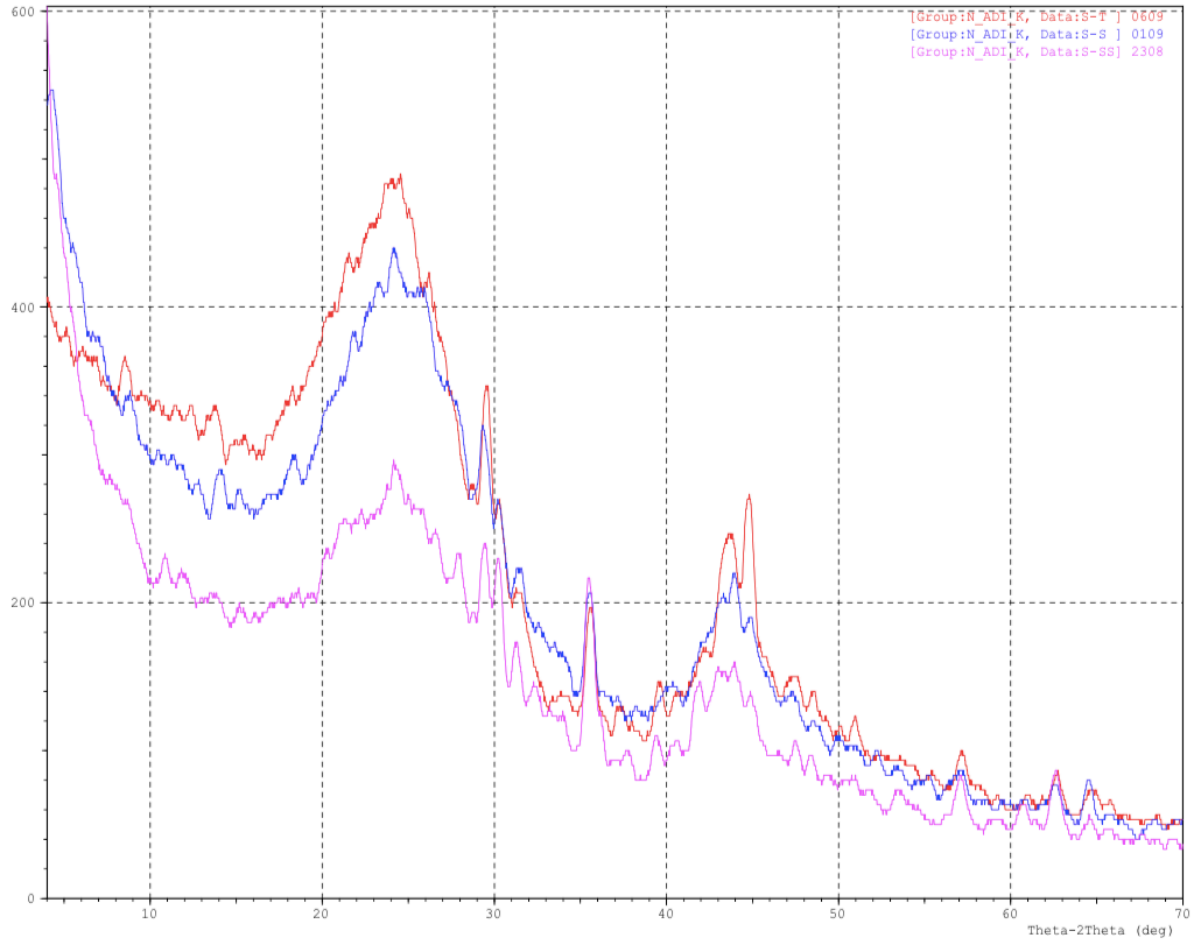


Figure S4b. The XRD patterns of activated carbon from steam pyrocharw. Note: red line S–T activated carbon, blue line S–S activated carbon, purple line S–SS activated carbon.

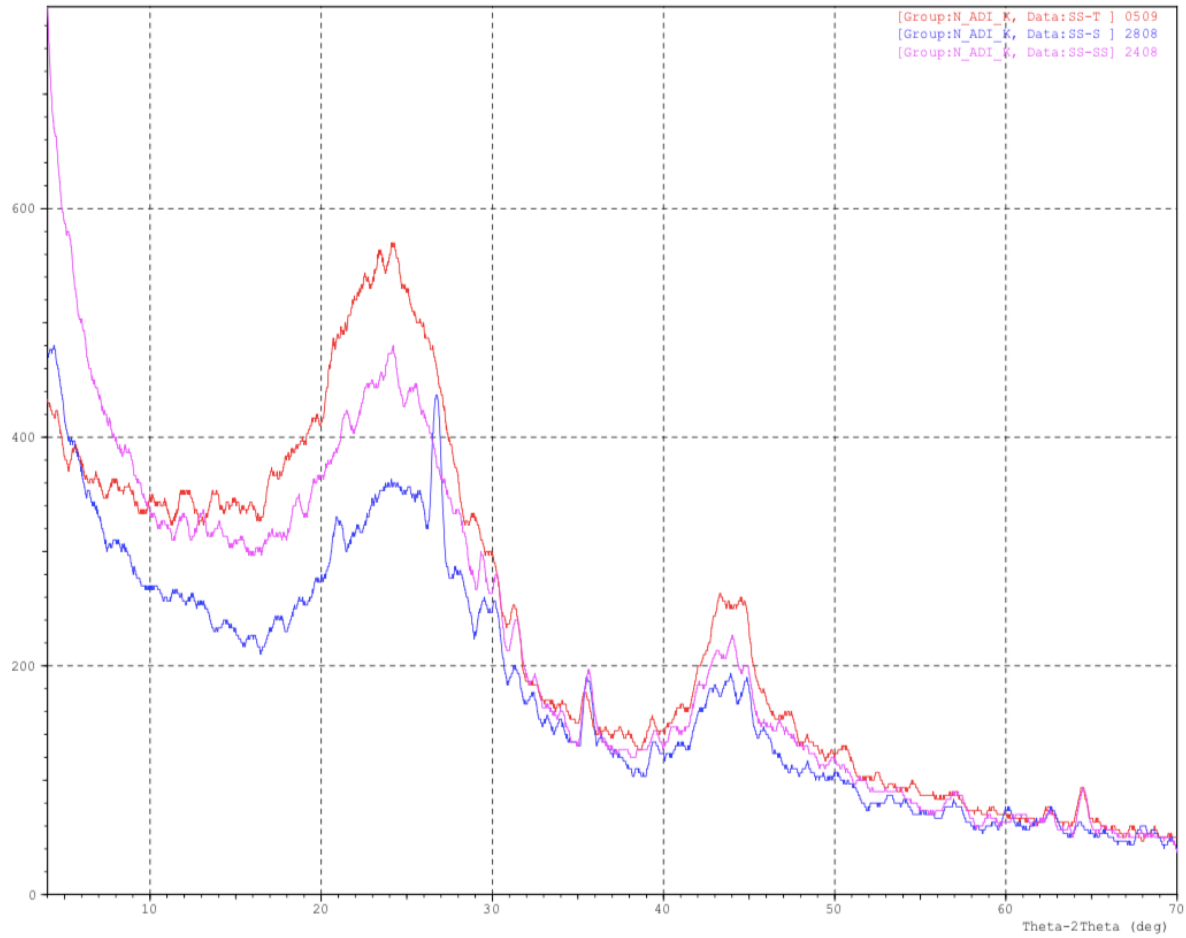


Figure S4c. The XRD patterns of activated carbon from superheated pyrochar. Note: red line SS–T activated carbon, blue line SS–S activated carbon, purple line SS–SS activated carbon.