SUPPLEMENTARY MATERIAL

Supplementary material includes the following:

Supplementary 1 S1: (Figure S1) Calibration curve used for the methylene blue residual concentration calculation.

Supplementary 2 S2: (Figure S2) Surface morphology SEM and EDS for the three biochar samples and the raw biomass.

Supplementary 3 S3: (Figure S3) N_2 adsorption-desorption isotherm for the biochar samples produced under all conditions.

Figure S1 Adsorption calibration curve used for methylene blue concentration calculation

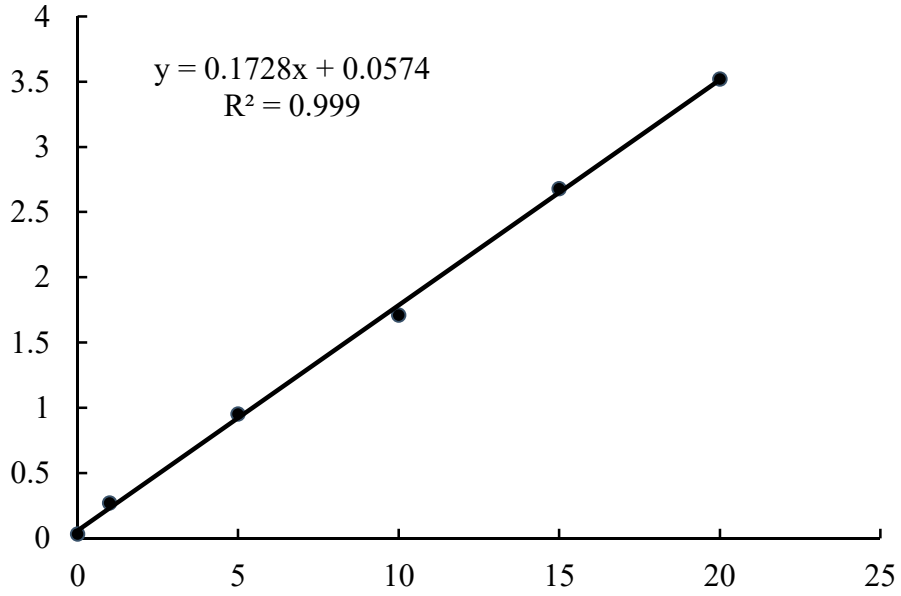
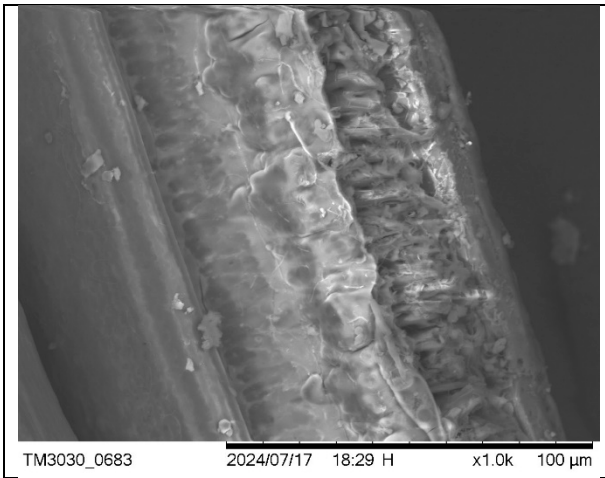
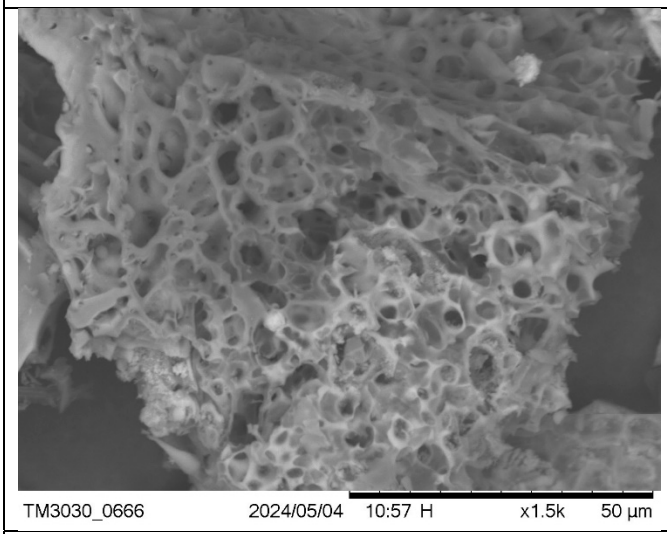


Figure S2 The surface morphology of the biochars and biomass materials



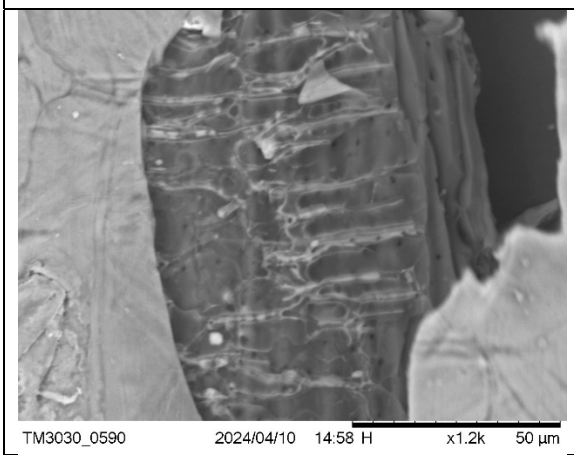
Element	Weight %
Carbon	42.862
Oxygen	38.862
Aluminum	7.946
Silicon	10.330

Raw Rice Husk biomass



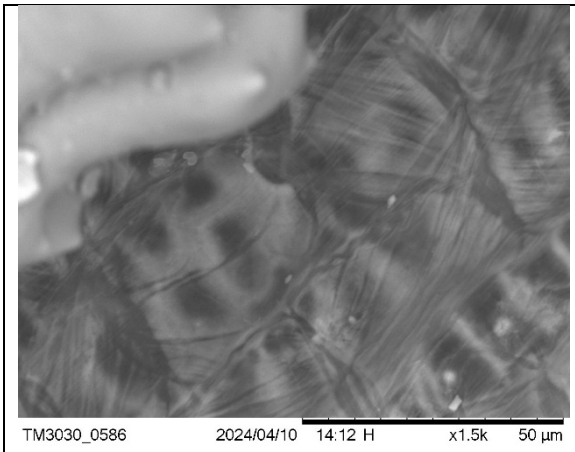
Element	Weight %
Carbon	51.544
Oxygen	28.484
Aluminum	0.292
Silicon	19.680

BC-RH 800-0



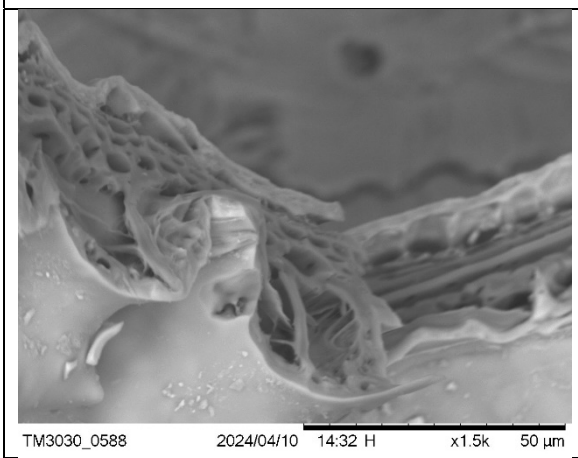
Element	Weight (%)
Carbon	33.45
Oxygen	36.86
Aluminum	0.47
Silicon	29.23

BC-RH-800-15



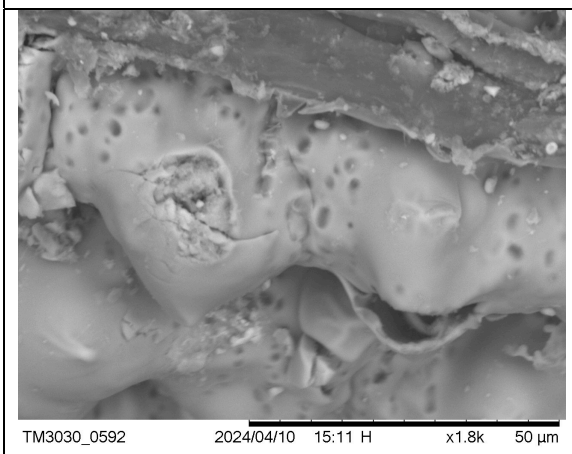
Element	Weight (%)
Carbon	45.36
Oxygen	35.55
Aluminum	2.80
Silicon	16.29

BC-RH-800-30



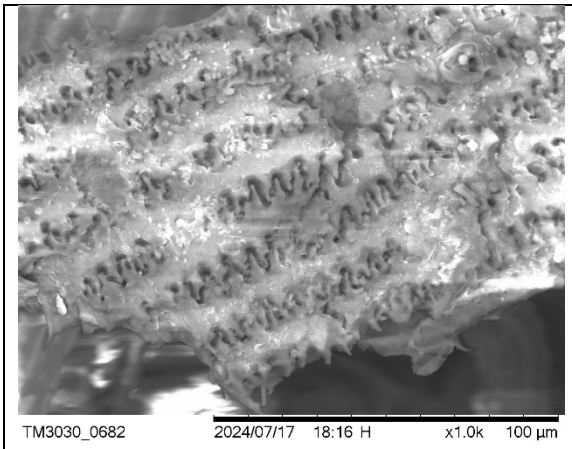
Element	Weight (%)
Carbon	37.39
Oxygen	31.02
Aluminum	0.99
Silicon	29.24
Calcium	1.37

BC-RH-800-45



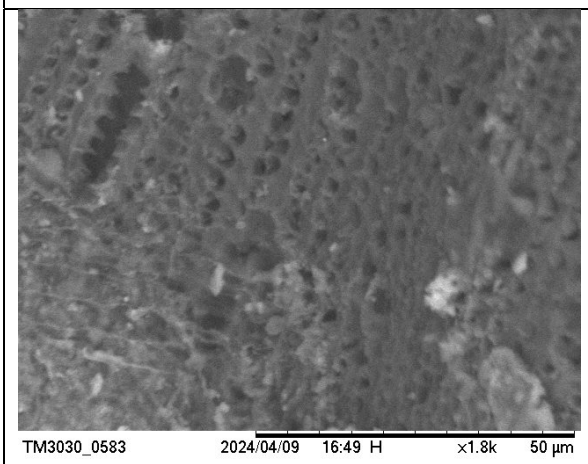
Element	Weight (%)
Carbon	33.71
Oxygen	41.47
Aluminum	0.21
Silicon	24.59
Calcium	0.03

BC-RH-800-60



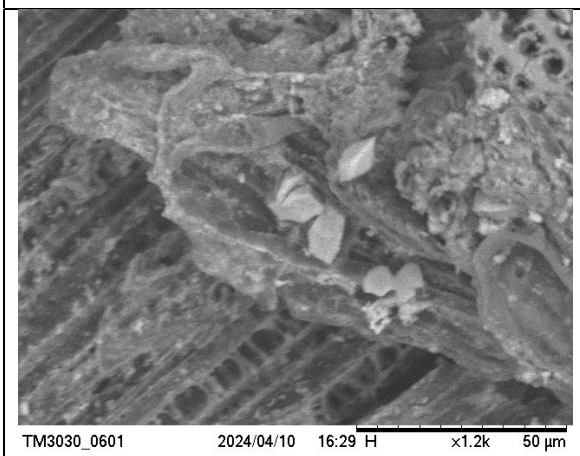
Element	Weight %
Carbon	44.371
Oxygen	50.363
Aluminum	0.224
Silicon	2.877
Phosphorus	0.389
Sulfur	0.444
Calcium	1.332

Cow manure raw biomass



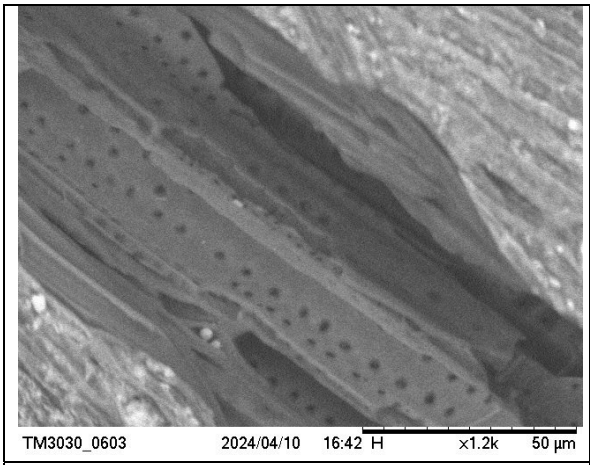
Element	Weight (%)
Carbon	75.17
Oxygen	19.00
Sodium	0.23
Magnesium	0.55
Aluminum	0.25
Silicon	2.95
Phosphorus	1.04
Sulfur	0.37
Chlorine	0.17
Iron	0.29

BC-CM-800-0



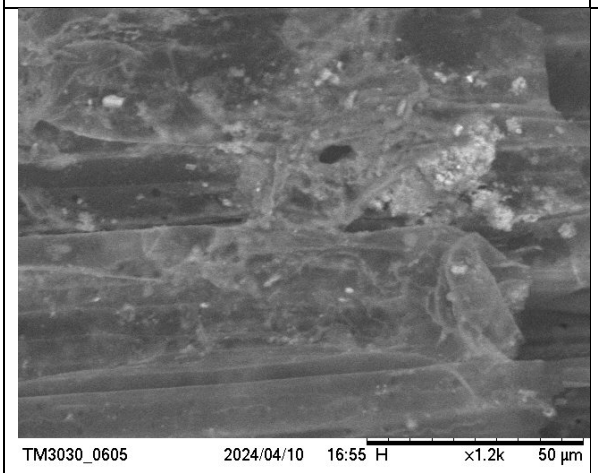
Element	Weight (%)
Carbon	61.18
Oxygen	25.13
Magnesium	1.26
Aluminum	0.45
Silicon	4.91
Phosphorus	5.20
Sulfur	0.59
Iron	0.80
Zinc	0.52

BC-CM-800-15



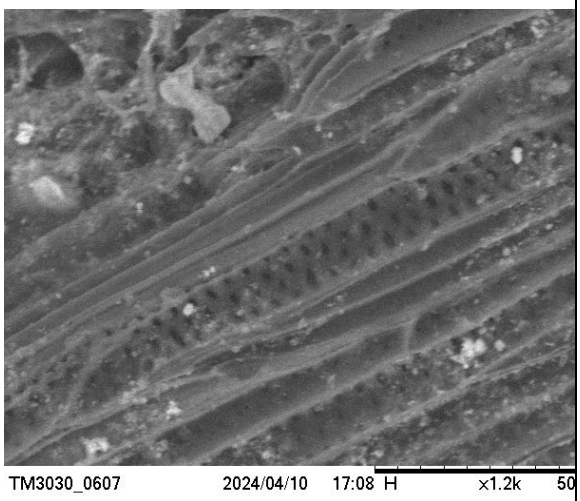
Element	Weight (%)
Carbon	74.967
Oxygen	18.642
Sodium	0.318
Magnesium	0.902
Aluminum	0.297
Silicon	1.414
Phosphorus	2.139
Sulfur	0.403
Iron	0.918

BC-CM-800-30



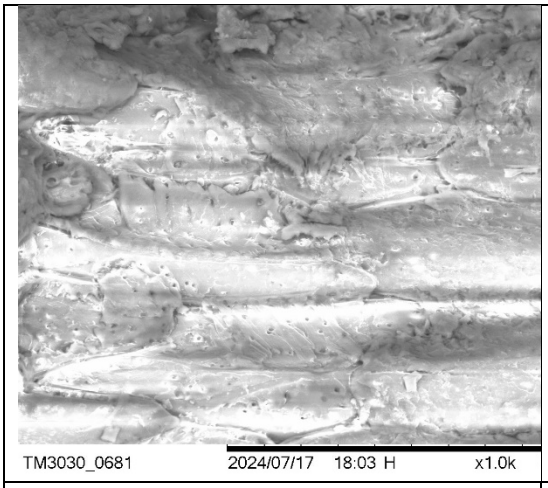
Element	Weight (%)
Carbon	73.662
Oxygen	20.388
Sodium	0.561
Magnesium	1.160
Aluminum	0.225
Silicon	1.135
Phosphorus	2.050
Sulfur	0.295
Iron	0.523

BC-CM-800-45



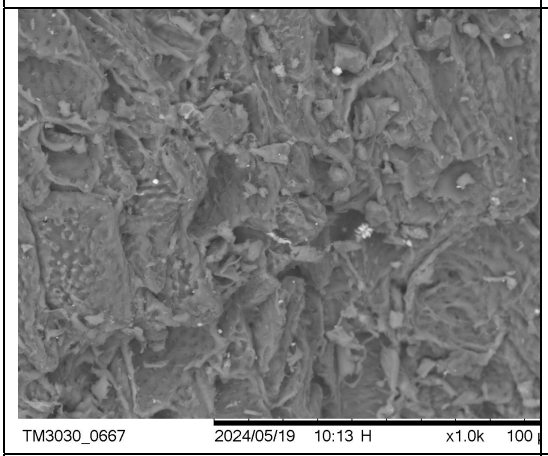
Element	Weight (%)
Carbon	77.385
Oxygen	17.763
Sodium	0.230
Magnesium	0.741
Aluminum	0.266
Silicon	1.447
Phosphorus	1.168
Sulfur	0.444
Chlorine	0.161
Iron	0.394

BC-CM-800-60



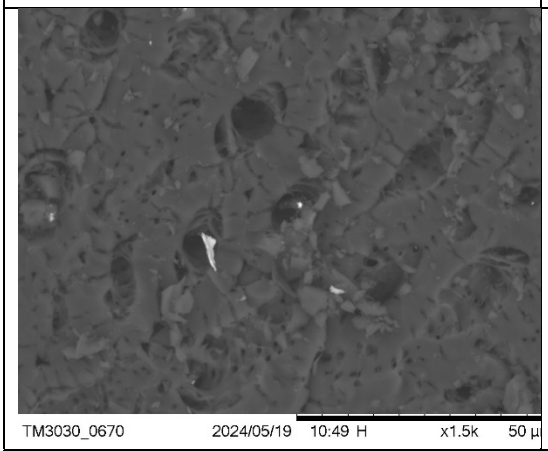
Element	Weight %
Carbon	54.510
Oxygen	45.490

Coconut Shell Raw biomass



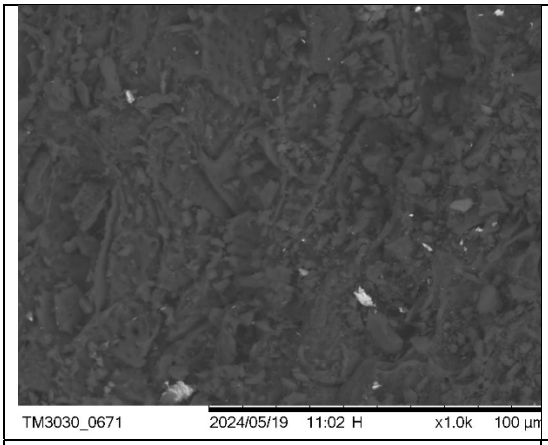
Element	Weight %
Carbon	85.125
Oxygen	14.875

BC-CS-800-0



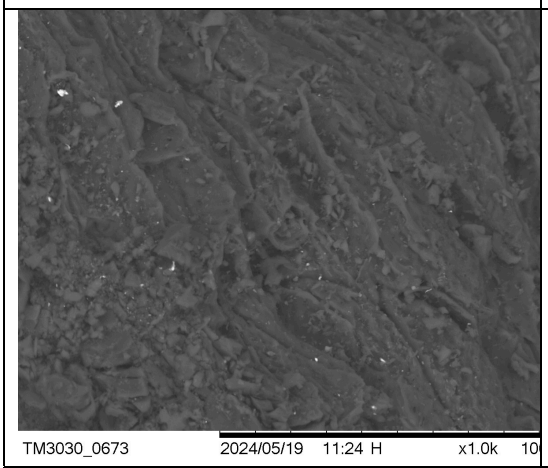
Element	Weight %
Carbon	89.96
Oxygen	10.04

BC-CS-800-15



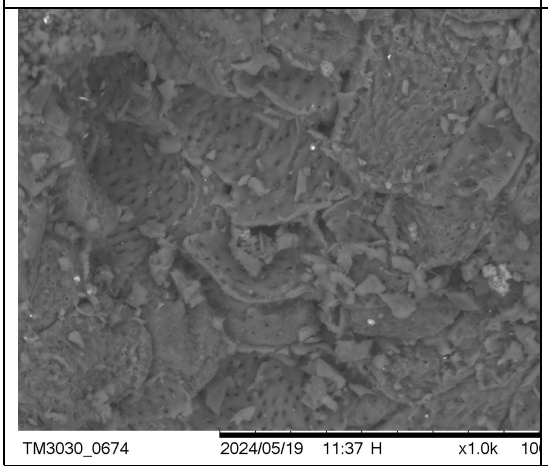
Element	Weight %
Carbon	90.16
Oxygen	9.84

BC-CS-800-30



Element	Weight %
Carbon	91.96
Oxygen	8.04

BC-CS-800-45

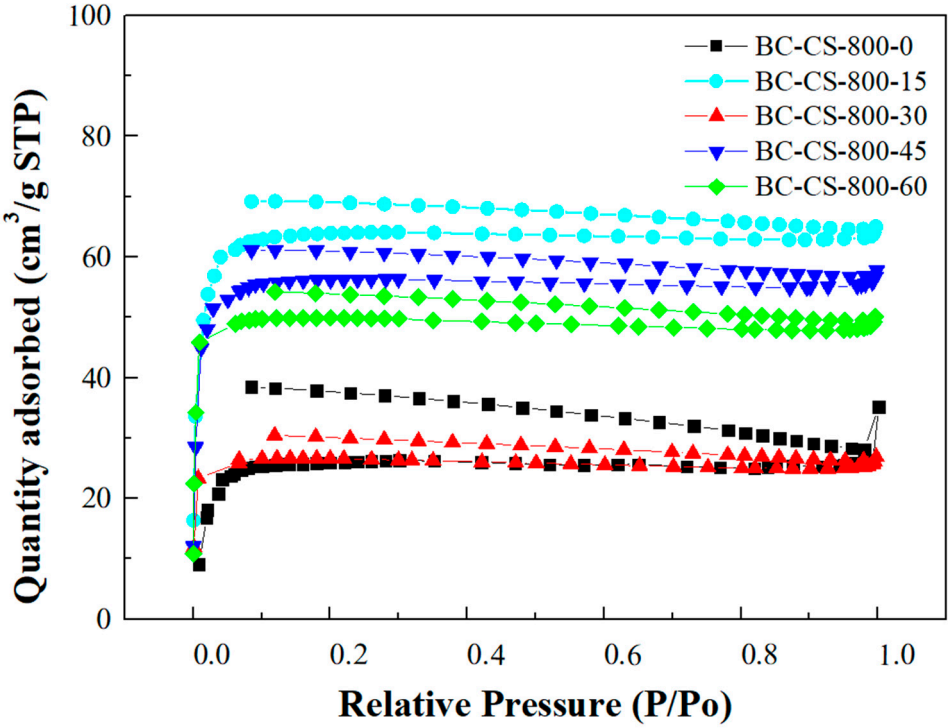


Element	Weight %
Carbon	91.57
Oxygen	8.43

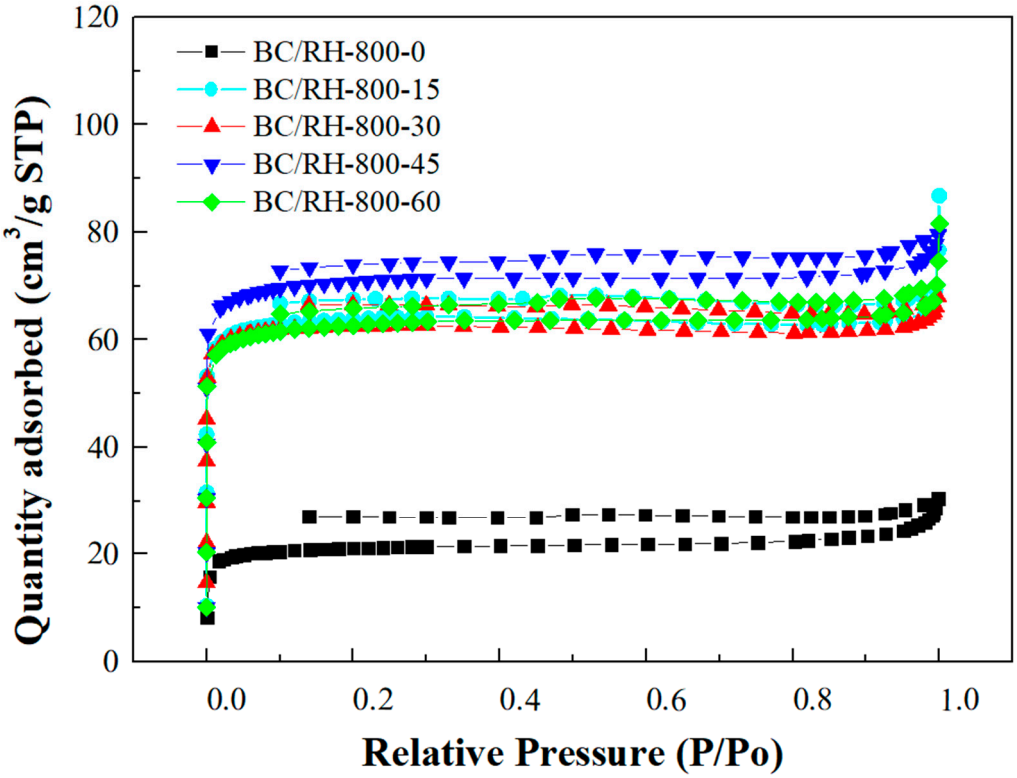
BC-CS-800-60

Figure S3 : N_2 adsorption- desorption curves for the biochar samples

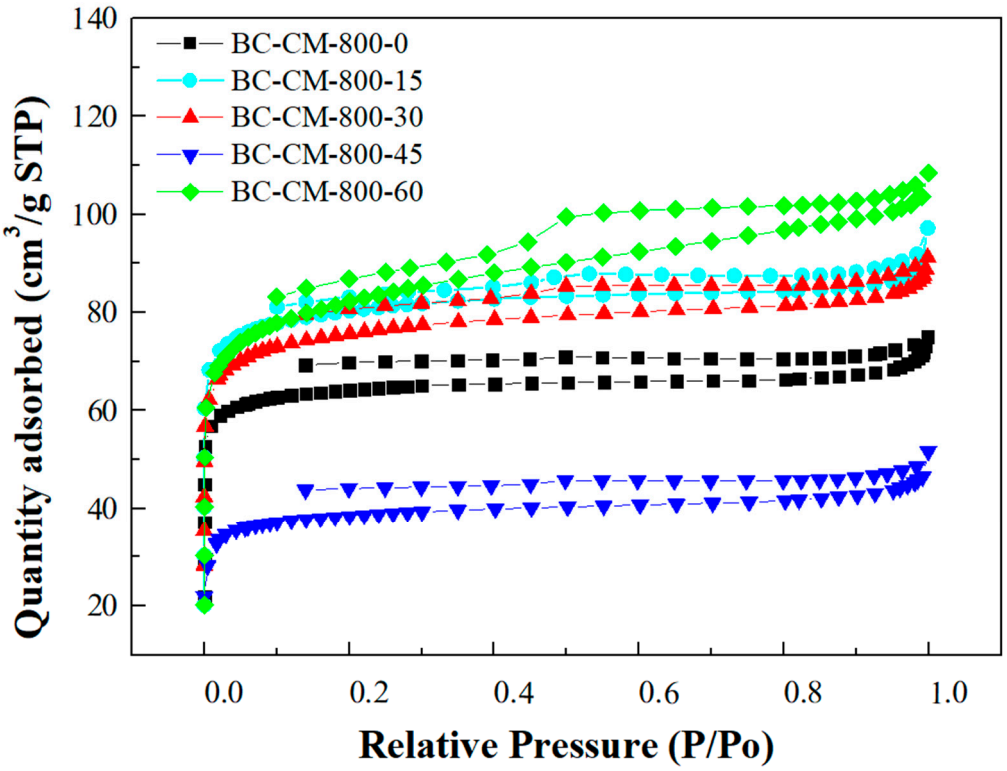
Coconut shell:



Rice husk:



Cow Manure:


BC-CM-800-0
BC-CM-800-15
BC-CM-800-30
BC-CM-800-45
BC-CM-800-60
Quantity adsorbed (cm3/g STP)
Relative Pressure (P/Po)
140
120
100
80
60
40
20
0.0
0.2
0.4
0.6
0.8
1.0