# Supplementary material

# Towards Furfural and Biomass Char Production from *Camellia oleifera* Husks using Dilute Hydrochloric Acid Pretreatment: A Comprehensive Investigation on Adsorption Performance

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## Figures and Tables captions

**Fig. S1**

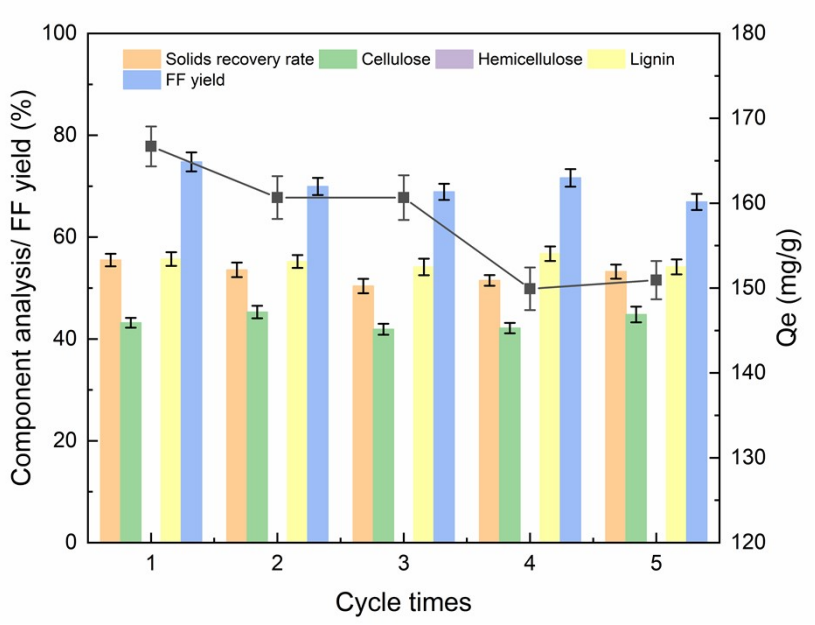

Solids recovery rate
Cellulose
Hemicellulose
Lignin
FF yield
Component analysis/ FF yield (%)
Qe (mg/g)
Cycle times
0
20
40
60
80
100
120
130
140
150
160
170
180
1
2
3
4
5

**Fig. S2**

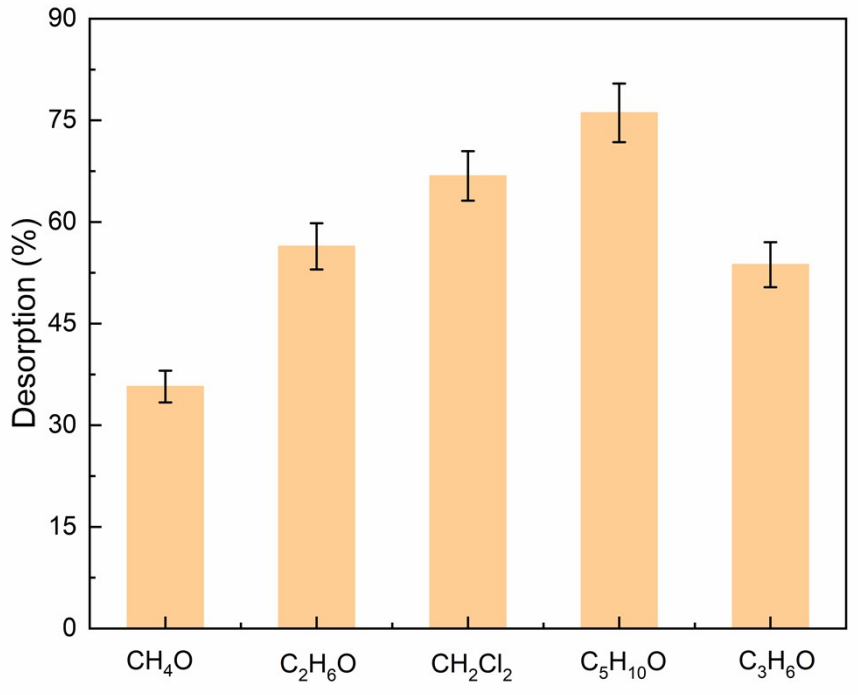
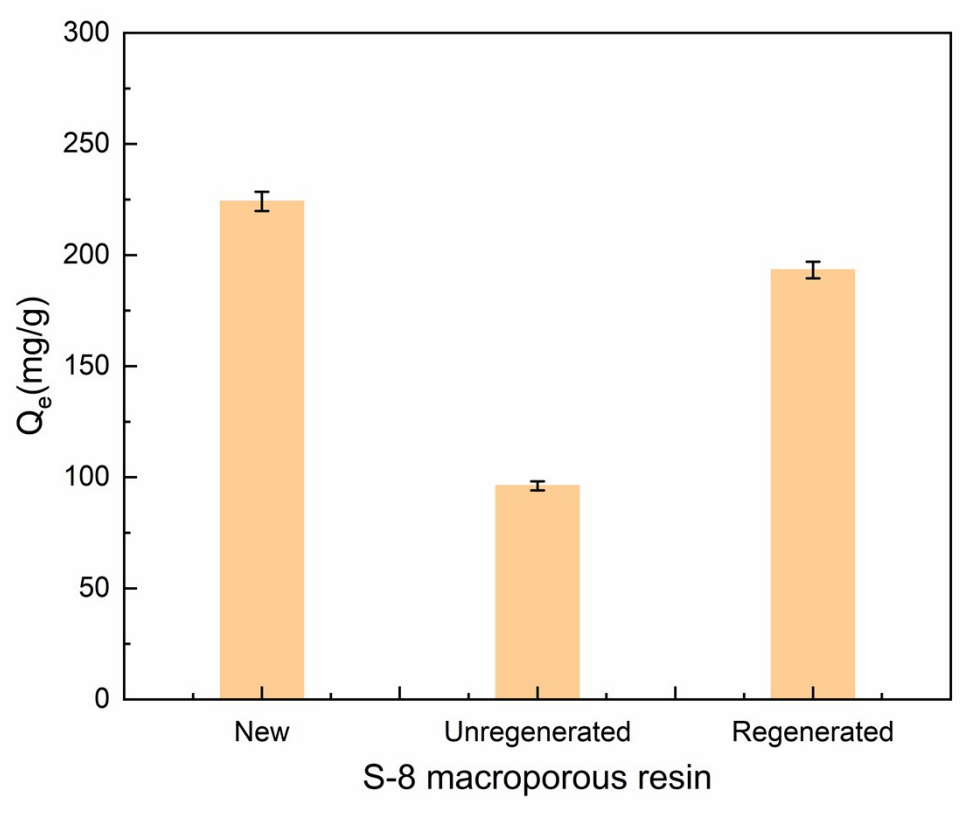


**Fig. S3**


300
250
200
150
100
50
0
$Q_e$(mg/g)
New
Unregenerated
Regenerated
S-8 macroporous resin

43 **Table S1**

| Properties | Range |
|---|---|
| Particle size range | 0.3-1.25 mm |
| Water content | 66-72 % |
| Specific surface area | 100-120 $m^2/g$ |
| Wet vacuum density | 1.0-1.06 g/ml |
| Wet apparent density | 0.6-0.7 g/ml |

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45 **Table S2**

| Pseudo-first-order | | | Pseudo-second-order | | |
|---|---|---|---|---|---|
| $Q_1$ (mg/g) | $K_1$ (1/min) | $R^2$ | $Q_2$（mg/g） | $K_2$ (1/min) | $R^2$ |
| 30.57 | 0.125 | 0.999 | 209.21 | 0.0087 | 0.999 |

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47 **Table S3**

| $R^2$ | ΔH / (kJ·mol$^{-1}$ ) | ΔS / (J·mol$^{-1}$ ) | ΔG/(kJ·mol$^{-1}$ ) 293K | 303K | 313K | 323K | 333K |
|---|---|---|---|---|---|---|---|
| 0.991 | -7.649 | 0.632 | -7.820 | -7.860 | -7.807 | -7.841 | -7.890 |

49 **Table S4**

| Pseudo-first-order | | | Pseudo-second-order | | |
|---|---|---|---|---|---|
| $Q_1$(mg/g） | $K_1$ | $R^2$ | $Q_2$ （mg/g） | $K_2$ | $R^2$ |
| 82.86 | 0.069 | 0.998 | 95.68 | 0.000896 | 0.989 |

**Table S5**

| $R^2$ | ΔH / (kJ·mol$^{-1}$ ) | ΔS / (J·mol$^{-1}$ ) | ΔG/(kJ·mol$^{-1}$ ) 293K | 303K | 313K | 323K | 333K |
|---|---|---|---|---|---|---|---|
| 0.987 | 37.25 | 168.11 | -11.91 | -13.93 | -15.53 | -16.97 | -18.63 |

53 **Table S6**

| Characteristic | BC in our work | CAC in the literature |
|---|---|---|
| Surface area ($m^2/g$) | 1134.619 | 645 |
| Average pore Diameter (nm) | 1.811 | 1.60 |
| Total pore volume ($cm^3/g$) | 0.514 | 0.26 |
| Microporous volume ($cm^3/g$) | 0.447 | 0.25 |
| Mesoporous volume ($cm^3/g$) | 0.067 | 0.01 |

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