**Supporting information**

**Maximizing fermentable feedstocks from** ***Camellia oleifera* seed oil extraction residues: Green pretreatment and enzymatic hydrolysis for effective valorization**

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**Table S-1**: FTIR band assignment and characteristics in pretreatment and enzymatic hydrolysis samples.

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| --- | --- | --- | --- |
| **Wavenumber (cm−1)** | **Band Assignment** | **Pretreatment**  | **Enzymatic hydrolysis** |
| 3400─3300 | O─H stretching of cellulose and hemicellulose ([Dessie et al., 2022](#_ENREF_2)) | Enhanced in raw | Smooth 3700─3000 cm─1  |
| 3285 | O─H stretching vibration of cellulose ring, lignin and water ([Meganathan et al., 2022](#_ENREF_4)) | COFS+COSC-TCH | ─ |
| 2930 | C–H stretching in cellulose ([Yan et al., 2022](#_ENREF_6)) | Sharp in COSC-TCH | All  |
| 2850 | C–H stretching in cellulose ([Yan et al., 2022](#_ENREF_6)) | Absent in COFS except in TCH, enhanced in COSC-TCH | COSC, COFS+COSC |
| 1740─1730  | C=O stretching acetyl in hemicellulose and aldehydes in lignin ([Dessie et al., 2022](#_ENREF_2)) | Enhanced in TCH  | Peak almost disappeared for TCH |
| 1650 | Primary amides ([Dessie et al., 2021](#_ENREF_1)) | Absent in COFS, enhanced in COSC-Raw | Absent in COFS |
| 1630 | C=C stretching vibration ([Dessie et al., 2021](#_ENREF_1)) | COSC-TCH | ─ |
| 1620─1610 | C=C stretching related to α,β-unsaturated ketone ([Mohamed et al., 2017](#_ENREF_5)) | ─ | COFS- and COFS+COSC-TCH |
| 1600 | O─H bending associated with water in hemicelluloses ([Dessie et al., 2021](#_ENREF_1)) | Enhanced in COFS-Raw, absent in COSC | ─ |
| 1573 | N─O stretching ([Mohamed et al., 2017](#_ENREF_5)) | COSC-TCH, COFS+COSC | COSC, COFS+COSC-TH |
| 1512 | Aromatic skeletal vibration in lignin ([Dessie et al., 2021](#_ENREF_1)) | Enhanced in COSC- and COFS+COSC-TCH | Reduced in COFS-TH |
| 1465 | CH2 bend ([Mohamed et al., 2017](#_ENREF_5)) | TCH | TCH |
| 1248 | C–O stretching ([Li et al., 2016](#_ENREF_3)) | COFS-Raw | ─ |
| 1085 | C–O stretching ([Mohamed et al., 2017](#_ENREF_5)) | ─ | COFS-TH |
| 1040 | C–O–C vibration ([Li et al., 2016](#_ENREF_3)) | Enhanced in COFS+COSC  | Absent in COFS-TH |
| 824, 780 | C–H bending ([Dessie et al., 2021](#_ENREF_1)) | ─ | COFS-TH |

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