

Electronic Supplementary Information

Conversion of furfuryl alcohol into fuel-additives alkyl levulinates over Al₂O₃/SBA-15 catalyst

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The following are the NMR, GC-MS spectra of the BMF, DBP and BL

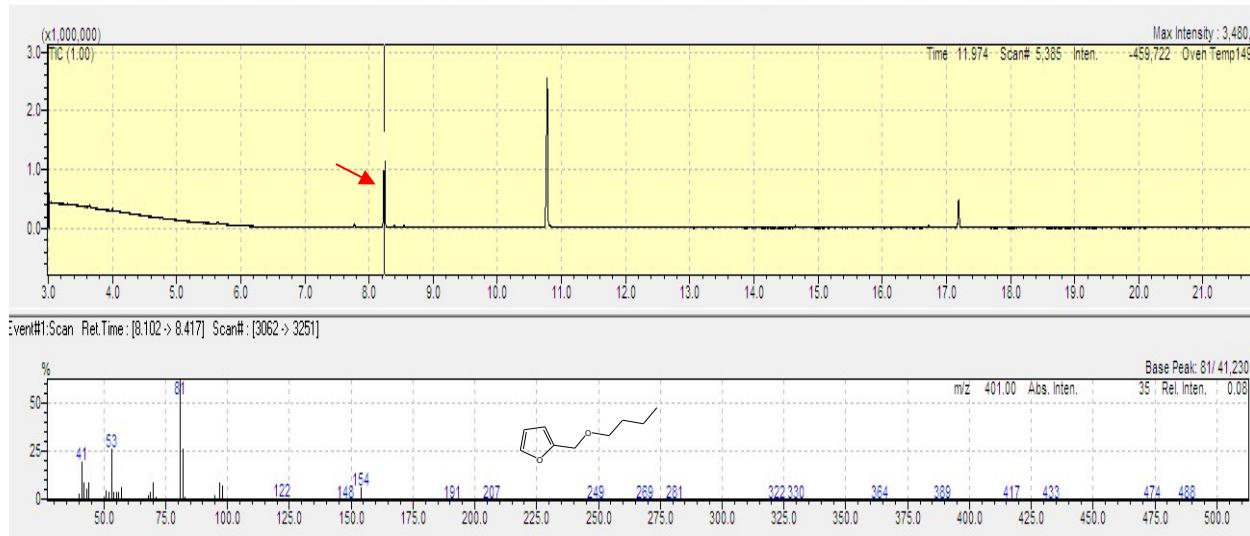


Fig. ES1. GC-MS spectra of 2-butoxy methyl furan (BMF)

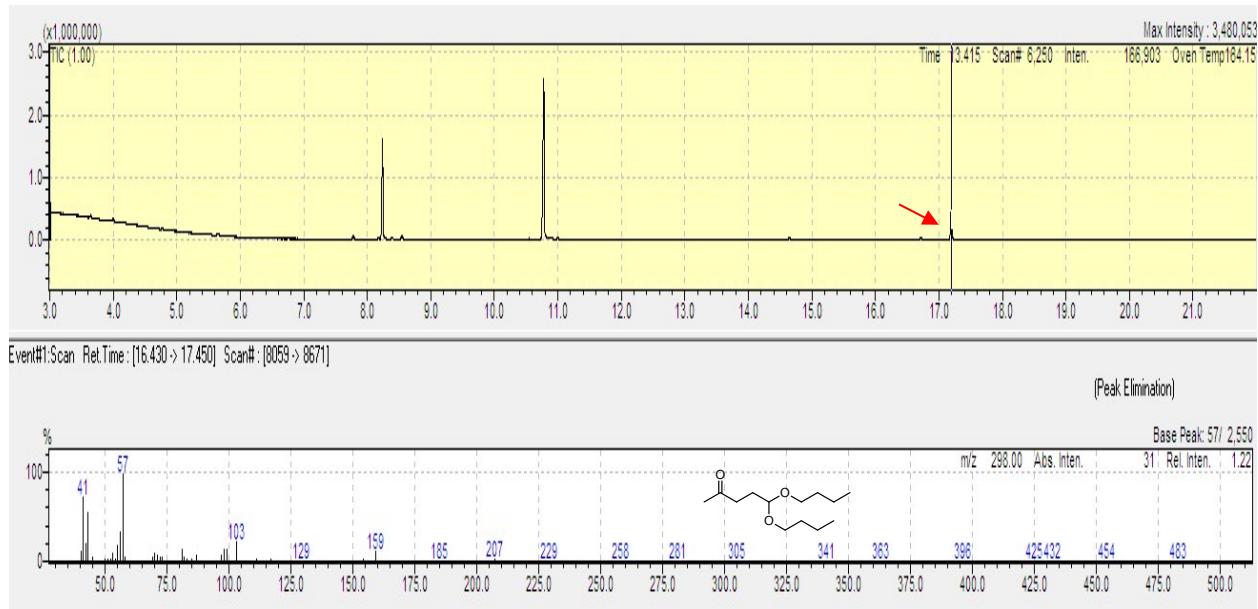


Fig. ES2. GC-MS spectra of 5, 5dibutoxy 2-pentanone (DBP)

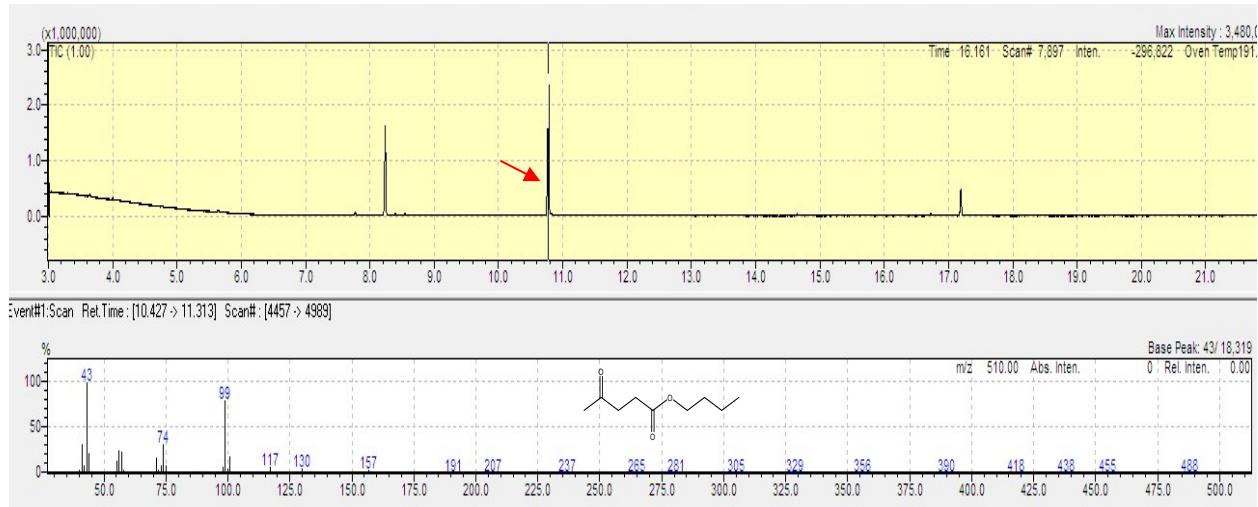


Fig. ES3. GC-MS spectra of n-butyl levulinate

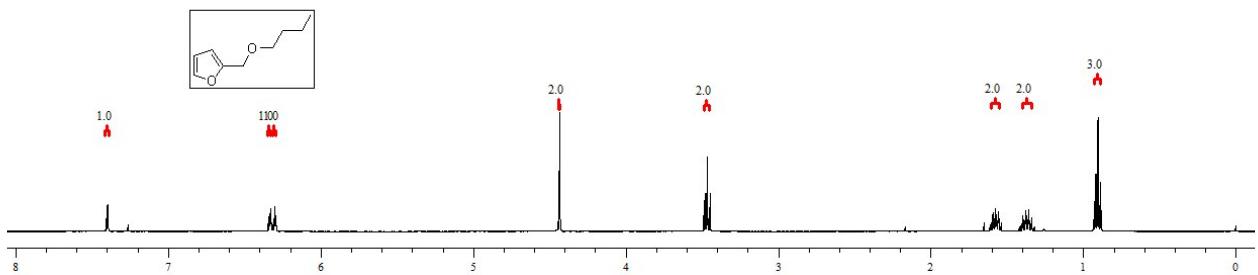


Fig. ES4. ^1H NMR of 2-butoxy methyl furan (BMF)

^1H NMR (400 MHz, CDCl_3) δ 7.39-7.4 (m 1H), 6.32-6.34 (m 1H), 6.29-6.31 (m 1H), 4.43 (s 2H), 3.46 (t J = 6.76 2H), 1.53-1.60 (m 2H), 1.33-1.39 (m 2H), 0.9 (t J = 7.45 3H)

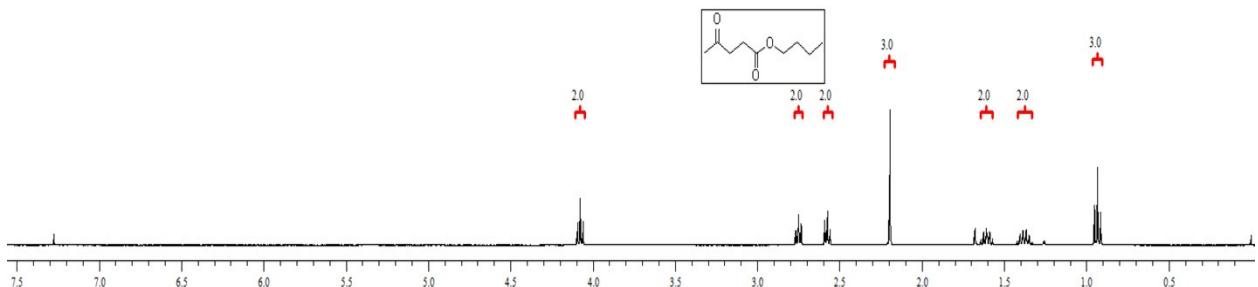


Fig. ES5. ^1H NMR of n-butyl levulinate.

^1H NMR (400 MHz, CDCl_3) δ 4.08 (t J 6.48 2H), 2.75 (t J 6.48 2H), 2.57 (t J 6.72 2H), 2.19 (s 3H), 1.56-1.63 (m 2H), 1.34-1.41 (m 2H), 0.95 (t J 7.64 3H)