Electronic Supplementary Material (ESI) for Sustainable Energy & Fuels.

Efficient one-pot synthesis of alkyl levulinate from xylose with an integrated dehydration/transfer-hydrogenation/alcoholysis process

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SUPPORTING INFORMATION

Table of Contents:

Fig. S1. GC spectrum of the typical sample that was obtained from the conversion of xylose in 2-BuOH with the combination of Zr(20)-MCM-41 and HPW.

Fig. S2. MS spectra of FF (a), FA (b), GVL (c), 2-BFE (d), and 2-BL (e).

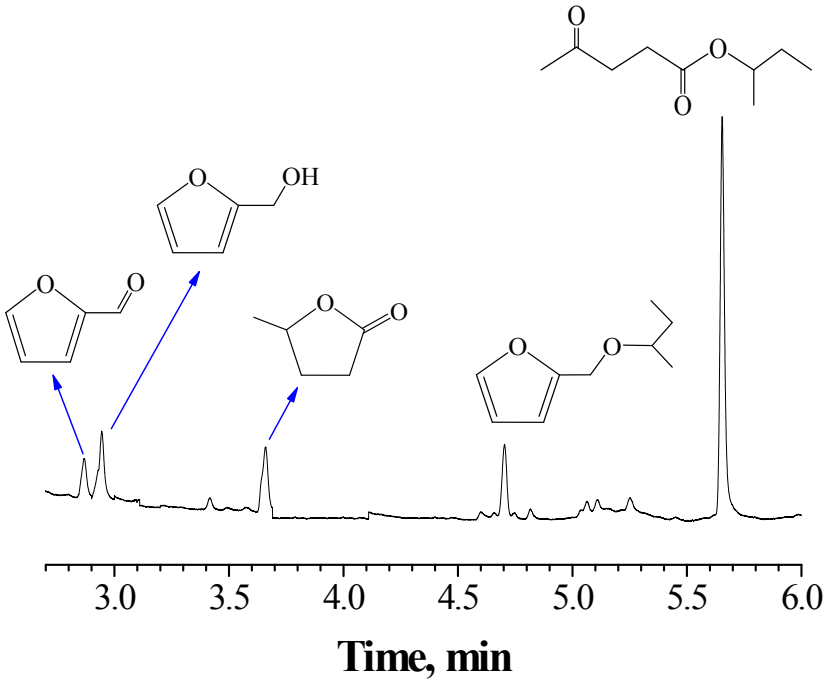
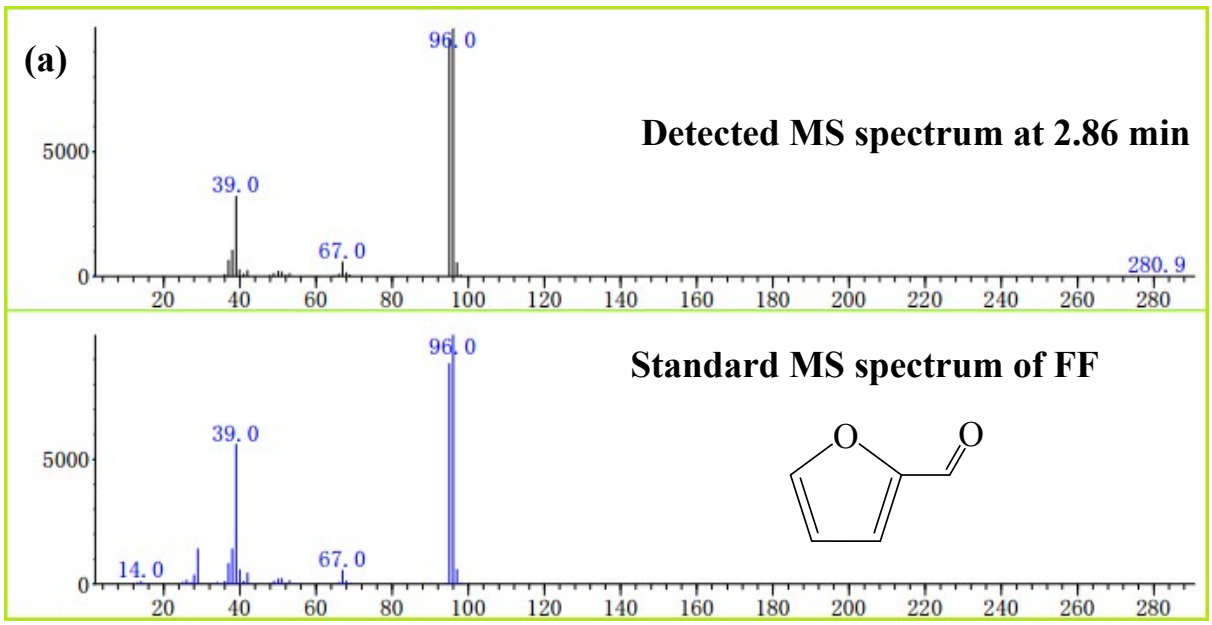
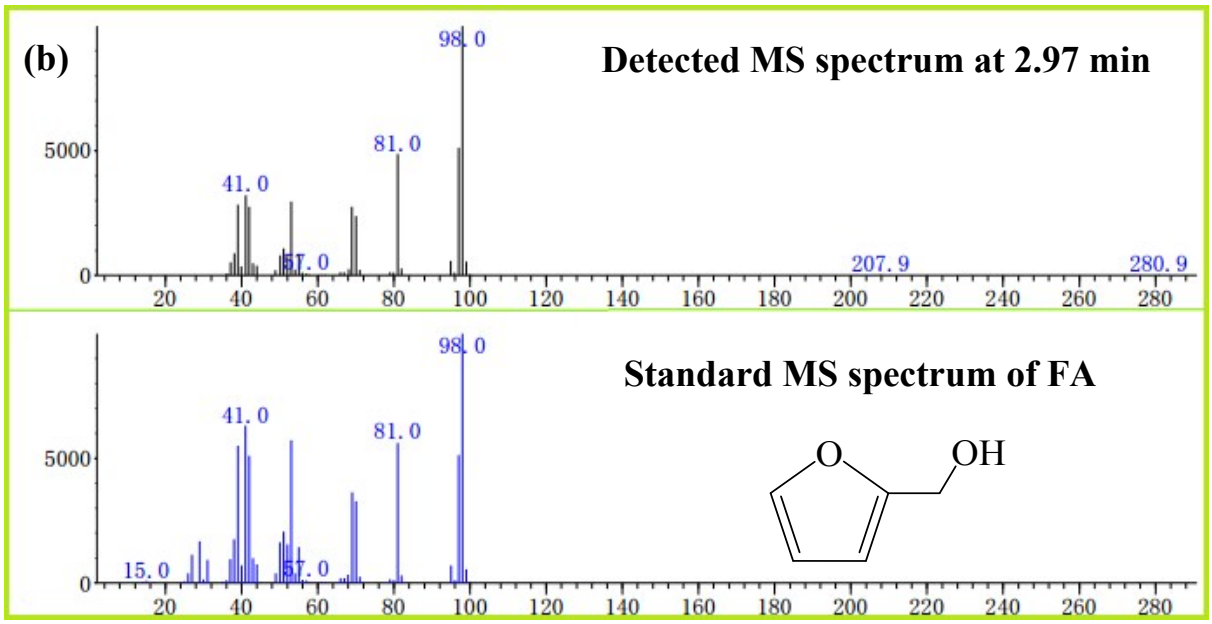
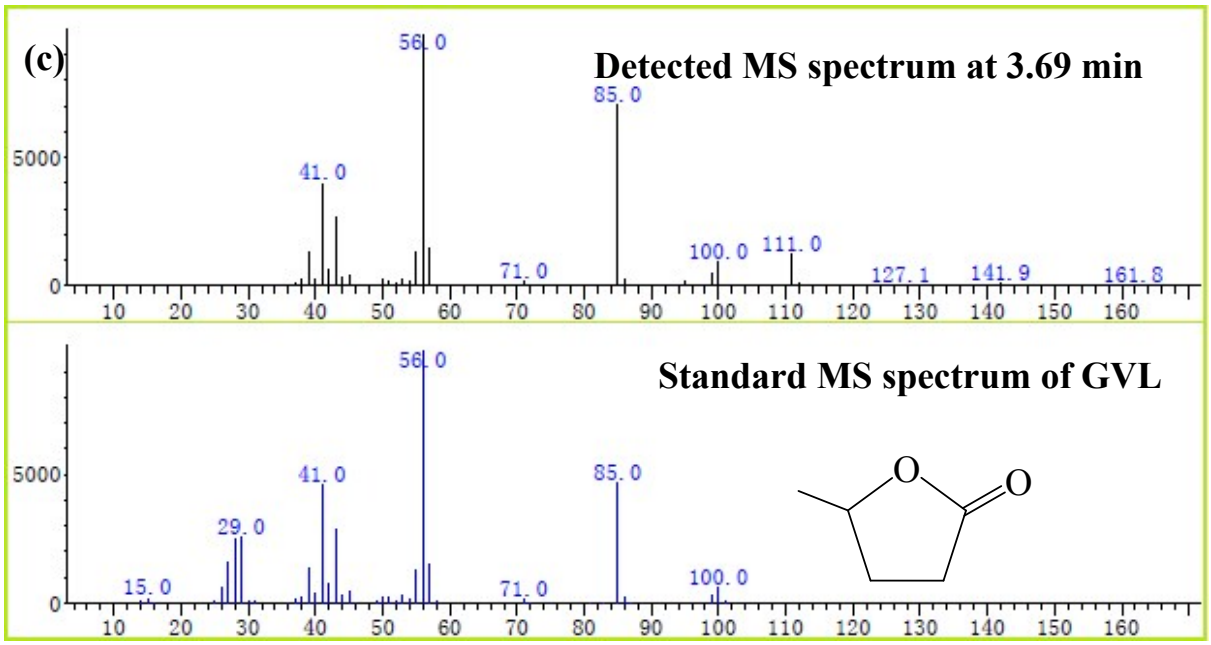


Fig. S1. GC spectrum of the typical sample that was obtained from the conversion of xylose in 2-BuOH with the combination of Zr(20)-MCM-41 and HPW.


(a)
Detected MS spectrum at 2.86 min
96.0
39.0
67.0
280.9
Standard MS spectrum of FF
96.0
39.0
14.0
67.0
O
O


(b)
Detected MS spectrum at 2.97 min
98.0
81.0
41.0
207.9
280.9
Standard MS spectrum of FA
98.0
41.0
81.0
15.0
O
OH


(c)
Detected MS spectrum at 3.69 min
56.0
85.0
41.0
71.0
100.0
111.0
127.1
141.9
161.8
Standard MS spectrum of GVL
56.0
41.0
85.0
29.0
15.0
71.0
100.0
O
O

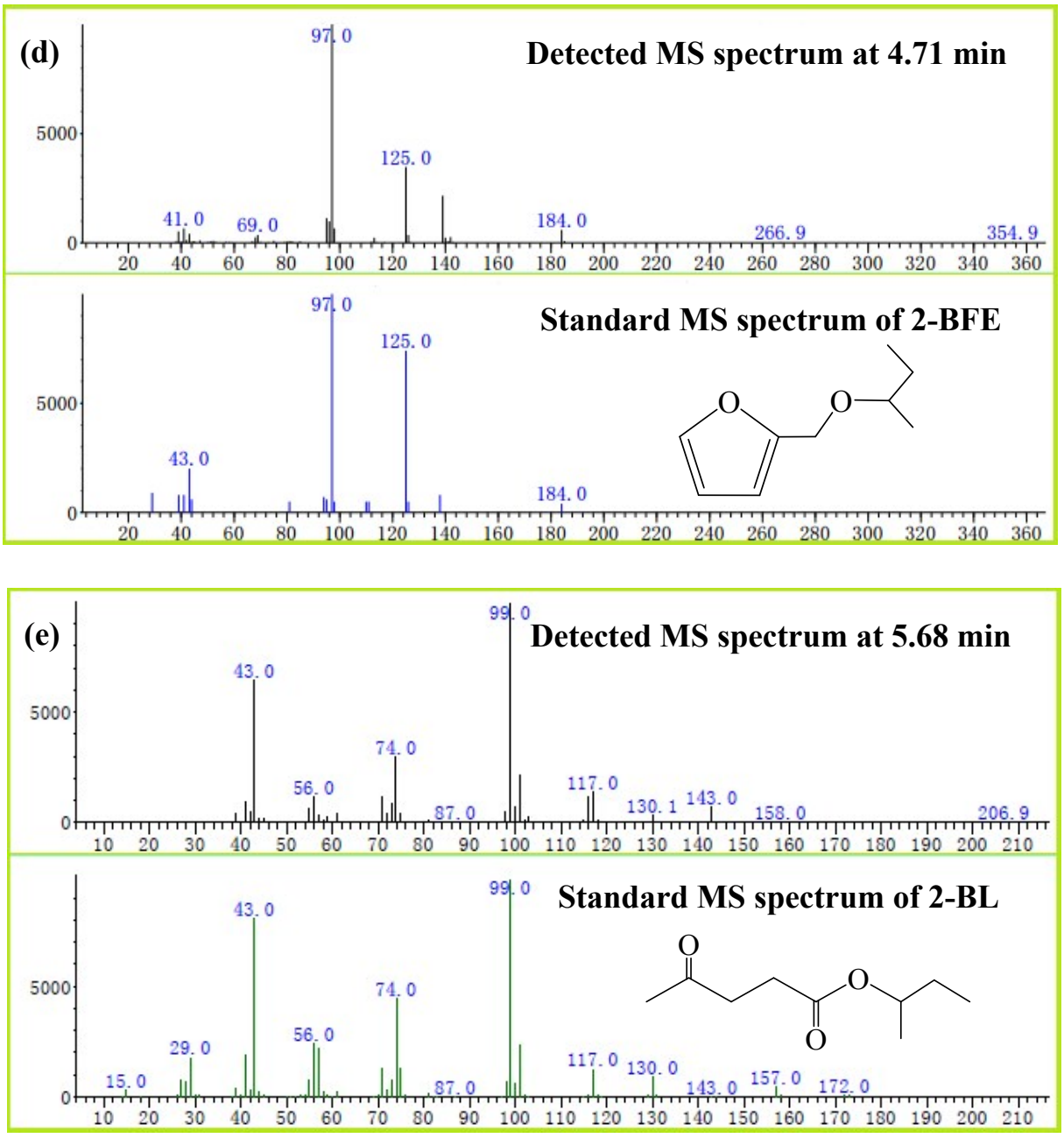


Fig. S2. MS spectra of FF (a), FA (b), GVL (c), 2-BFE (d), and 2-BL (e).

Abbreviations: FF = furfural, FA = furfuryl alcohol, GVL = γ-valerolactone, 2-BFE = 2-butyl furfuryl ether, 2-BL = 2-butyl levulinate.