

Electronic supplementary information

Phosphotungstic acid heterogenized by assembly with pyridine for efficient catalytic conversion of fructose to methyl levulinate

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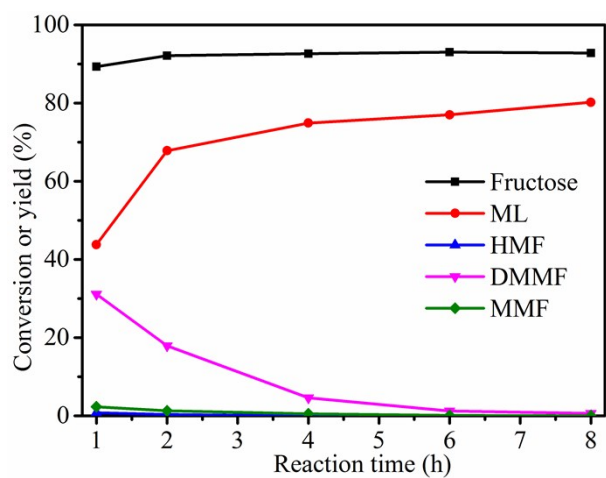


Fig. S1 Effect of reaction time on the synthesis of ML from fructose. Reaction conditions: 0.2 mol/L fructose, 5 mL methanol, 3-FPYPW (0.1 mmol H⁺), and 140 °C.

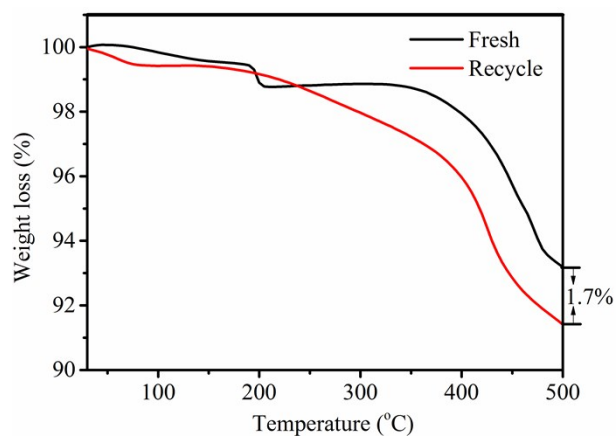


Fig. S2 TGA patterns of fresh and recycled 3-FPYPW catalysts after four cycles

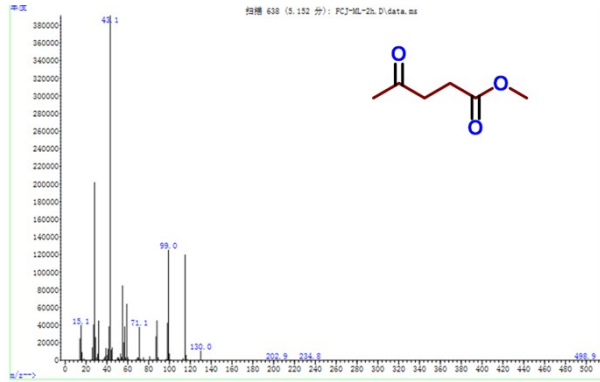


Fig. S3 MS spectrum of methyl levulinate

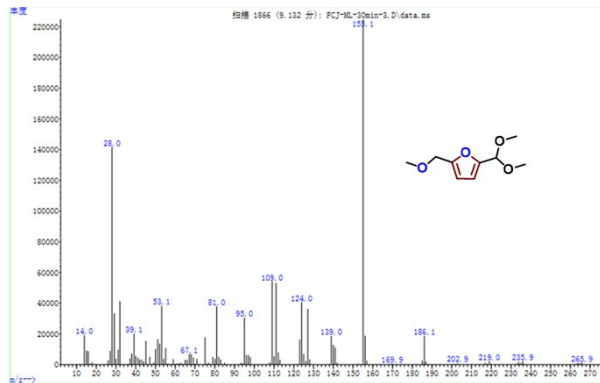


Fig. S4 MS spectrum of 2-(dimethoxymethyl)-5-(methoxymethyl)furan

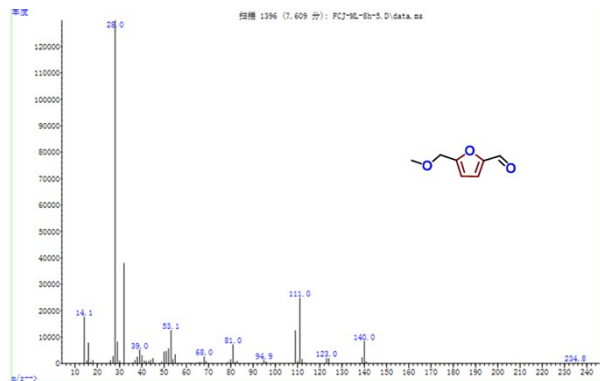


Fig. S5 MS spectrum of 5-methoxymethylfurfural

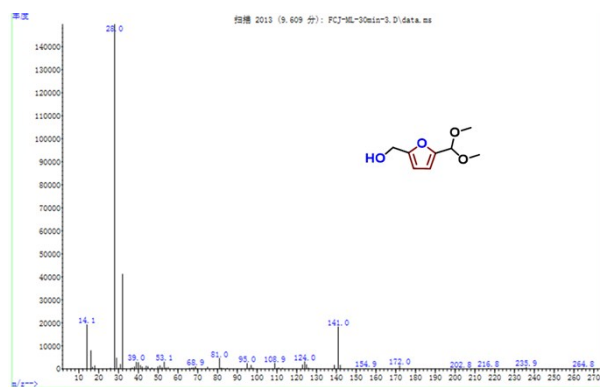


Fig. S6 MS spectrum of 5-(dimethoxymethyl)-2-furanmethanol