Electronic Supplementary Material (ESI) for Green Chemistry.

Perovskite Type Oxide Supported Ni Catalysts for the Production of 2,5-Dimethylfuran from Biomass-Derived 5-Hydroxymethylfurfural

Collaborative Innovation Center of Chemistry for Energy Materials
Anhui Province Key Laboratory of Biomass Clean Energy,
Department of Chemistry, University of Science and Technology of China,
Hefei 230026, China. Fax: (+86)-551-63606689

Corresponding author: Yao Fu
E-mail: fuyao@ustc.edu.cn

Table S1 The effect of time on the hydrogenolysis of the reaction intermediates

Entry	Substrate	t / h	Conv. / %	Yield / %				
				DMF	FDM	MFA	MF	Others
1	FDM	4.0	＞99	87.2	0.1	10.4	-	2.3
2	FDM	2.0	98.3	62.5	1.7	33.0	-	2.8
3	MF	4.0	＞99	94.2	-	3.7	0.4	1.7
4	MF	2.0	＞99	86.9	-	10.9	0.7	1.5
5	MFA	4.0	＞99	98.1	-	0.8	-	1.1
6	MFA	2.0	97.1	93.6	-	2.9	-	3.5

Reaction conditions: 1.0 mmol of substrate, 1.0 mmol of n-tetradecane, 100 mg of the LFN-20, 12 ml of ethanol, $P(H_2)$= 5.0 MPa, T= 230 °C; DMF : 2,5-dimethylfuran; FDM : 2,5-furandimethanol; MFA :5-methylfurfuryl alcohol; MF : 5-methylfurfural.

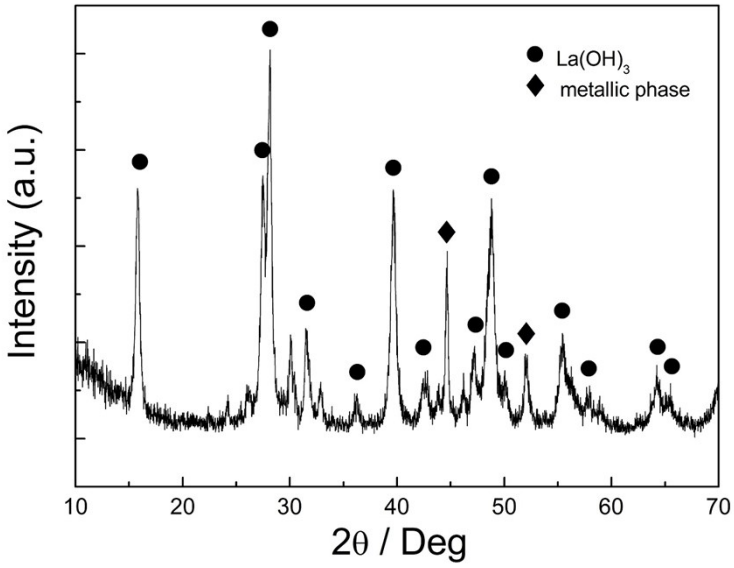

Fig. S1 XRD pattern of lanthanum oxides supported Ni (labeled as L-N20)

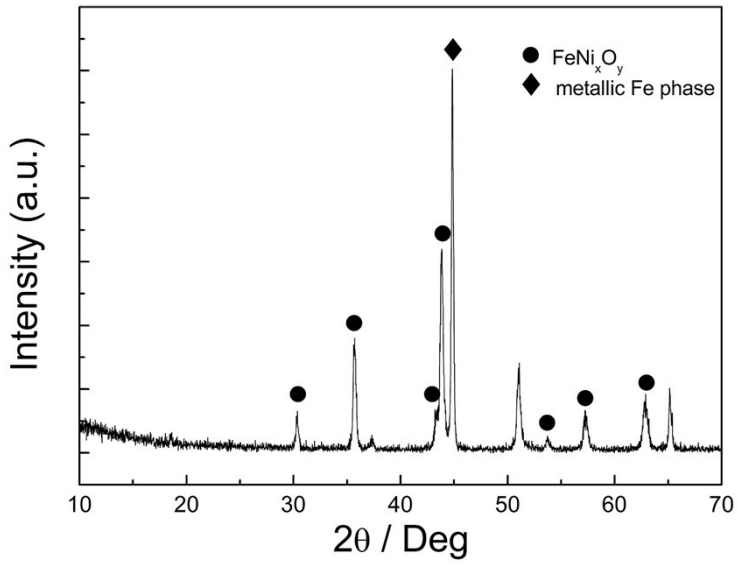

Fig. S2 XRD pattern of iron oxides supported Ni (labeled as F-N20)

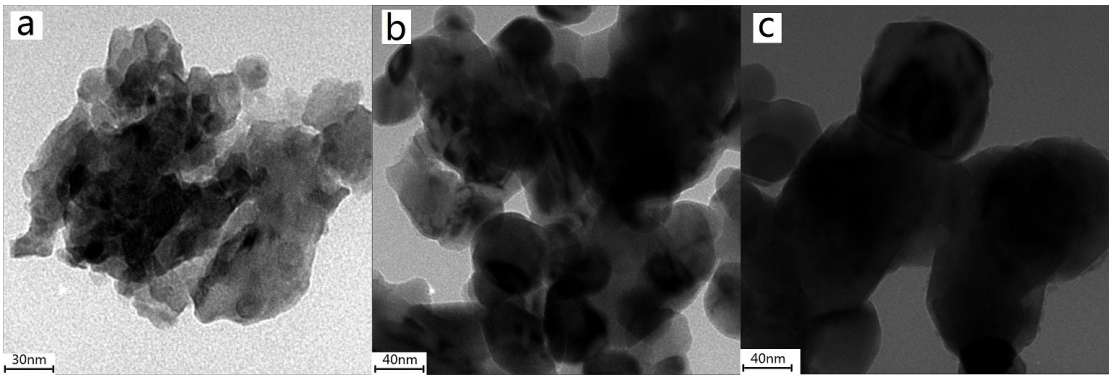

Fig. S3 The TEM images of different supported Ni catalysts (a) L-N20; (b) F-N20; (c) LF.

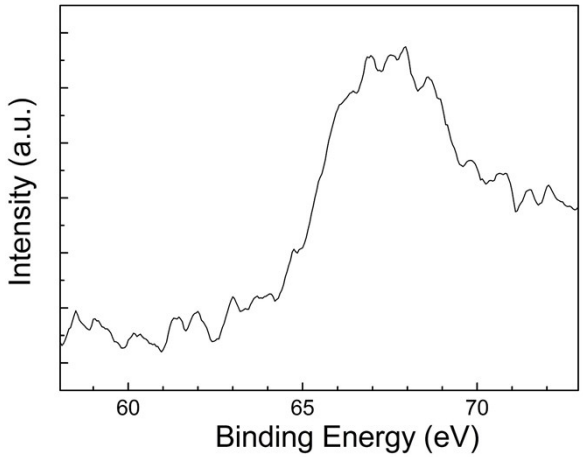

Fig. S4 XPS spectra in the Ni 3p region for L-N20

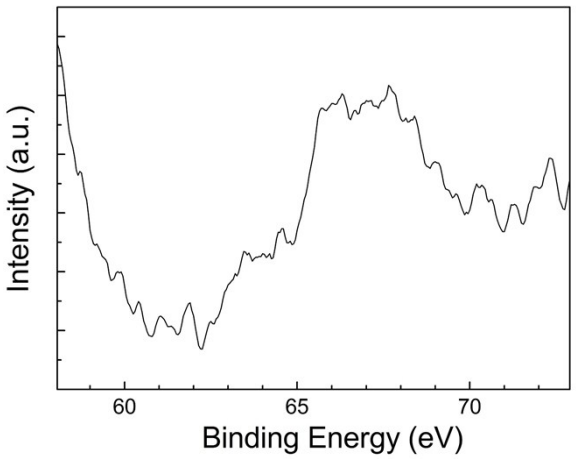

Fig. S5 XPS spectra in the Ni 3p region for F-N20