Supplementary Materials

Spillover Hydrogen on Electron-Rich Ni/m-TiO_2 for Hydrogenation of Furfural to Tetrahydrofurfuryl Alcohol

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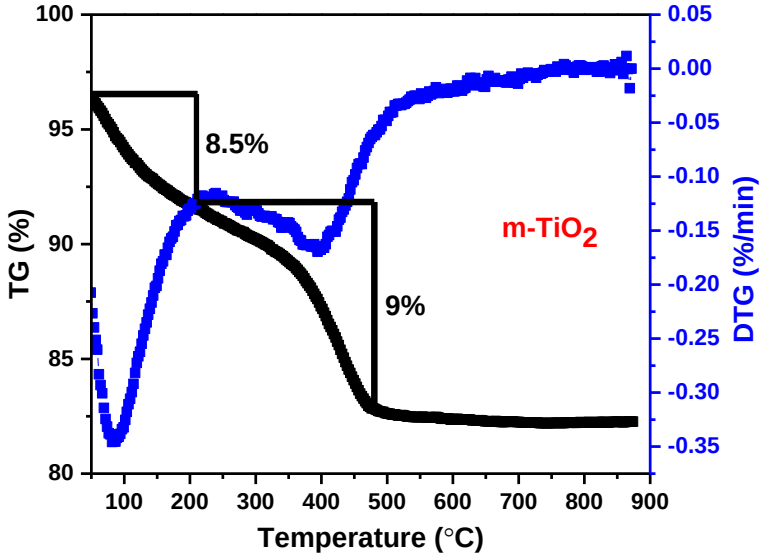

Figure S1. TGA analysis of uncalcined m-TiO_2 catalyst.

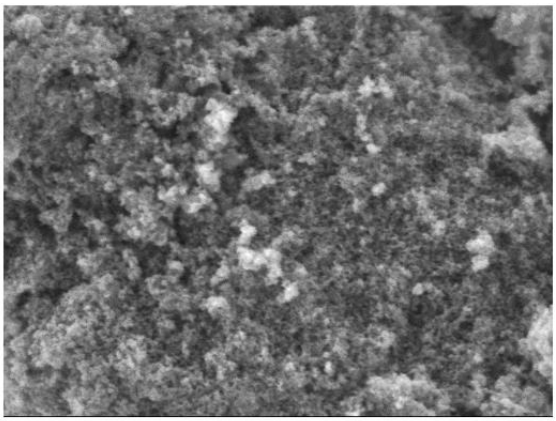

Figure S2. SEM image of pure m-TiO_2

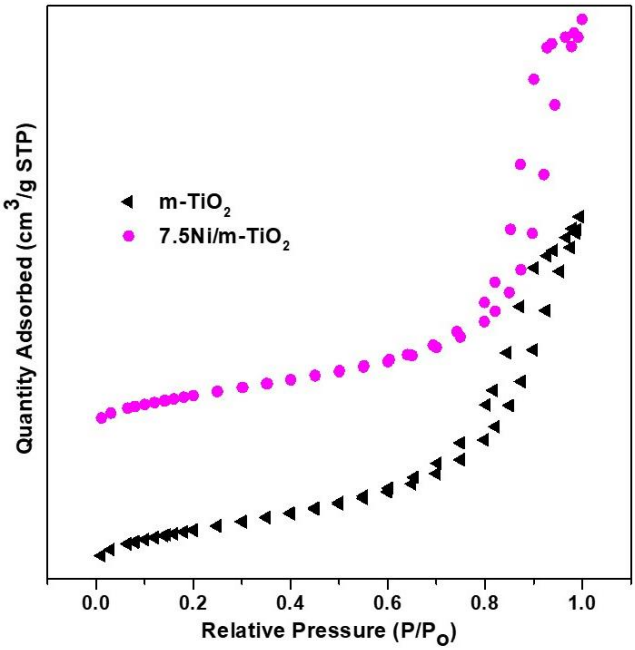

Figure S3. BET of pure m-TiO_2 and 7.5Ni/m-TiO_2.

Table S1. Physicochemical properties of various catalysts.

S.No	Catalysts	BET (m^2/g)	Pore Volume (cm^3/g)	Pore Size (nm)
1	m-TiO_2	275.3	0.71	10.3
2	7.5Ni/m-TiO_2	246.0	0.85	13.5

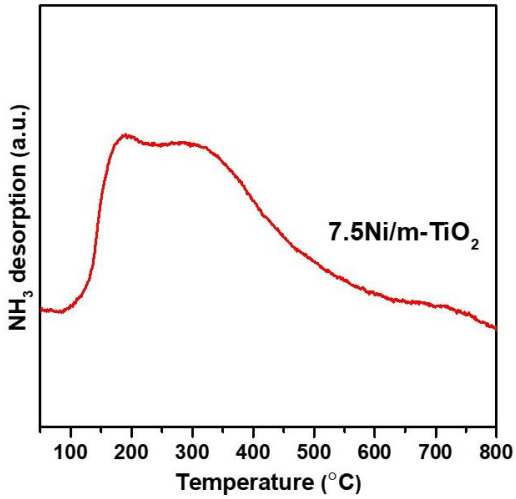

Figure S4. NH_3-TPD of 7.5Ni/m-TiO_2.

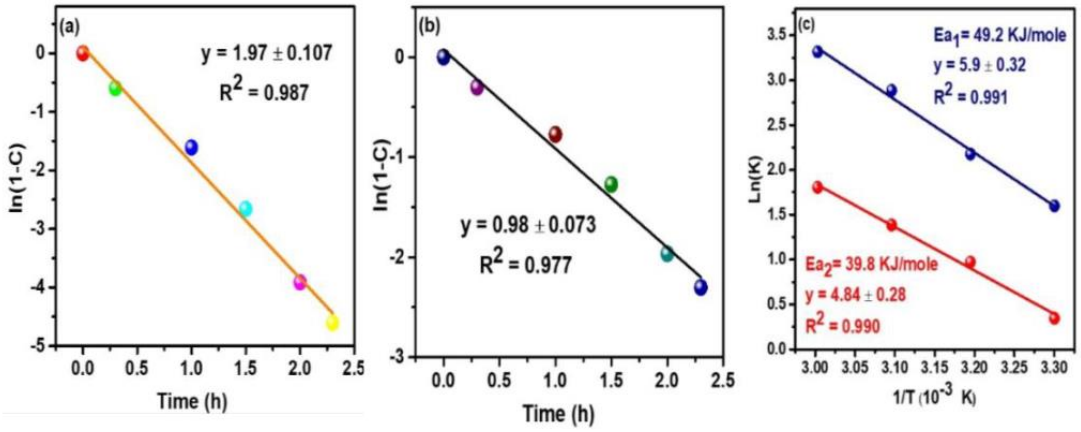

Figure S5. First order kinetics fit for (**a**) hydrogenation of FFA to FOL, (**b**) hydrogenation of FOL to THFA at various time and T = 100 °C, (**c**) Arrhenius plot of the activation energy (Ea_1 FFA hydrogenation, Ea_2 for FOL hydrogenation) at T = 30–60 °C, substrate = 1 mmol, water = 2 mL, catalyst = 0.03 g, p = 2 MPa H_2, time = 1 h.

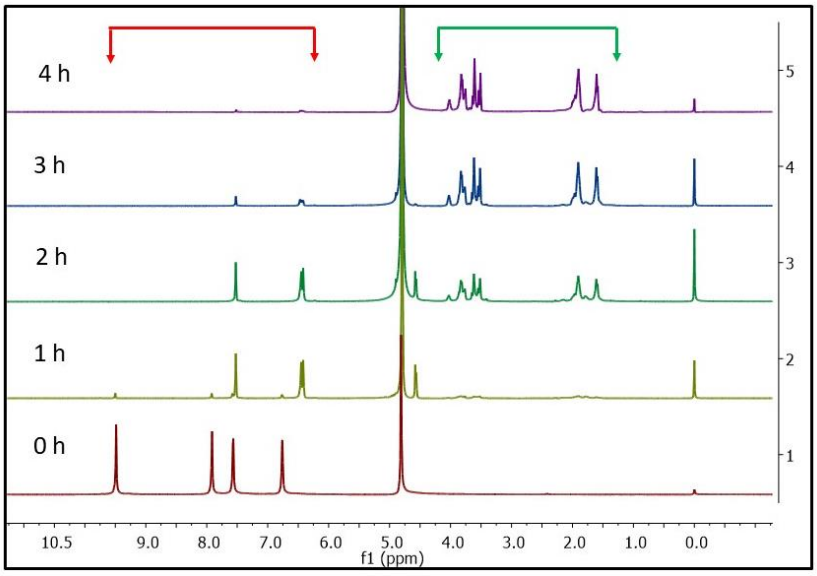

Figure S6. ^{1}H NMR of conversion of FFA to THFA in isotopic D_2O. The red arrows show the consumption of FFA and FOL, and the green one leads the formation of THFA.

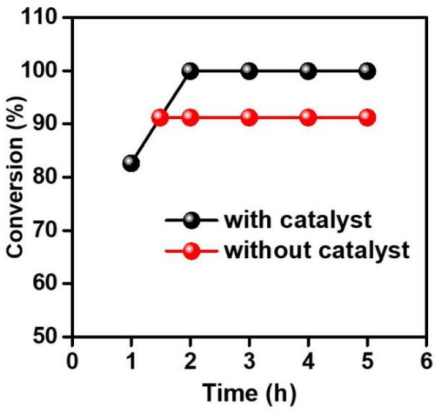

Figure S7. Leaching test for FFA hydrogenation with catalyst (black color), without catalyst (red color).

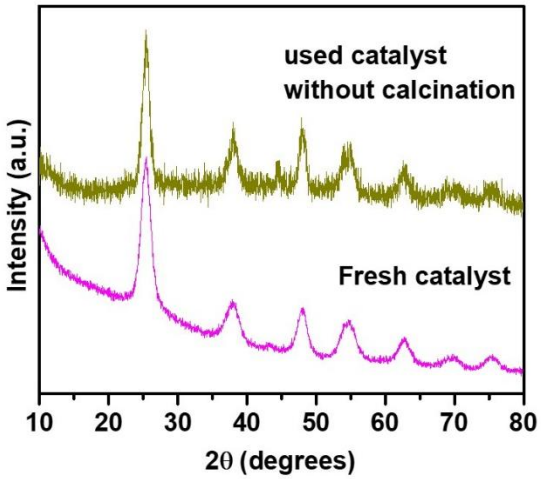

Figure S8. XRD of spent 7.5Ni/mTiO$_2$ catalyst.