

Supporting Information

**One-pot Hydrogenation of Furfural into Tetrahydrofurfuryl Alcohol under Ambient Conditions over PtNi Alloy Catalyst**

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Table.S1 Result of ICP –OES analysis of mono and bimetallic catalysts

Catalyst	Pt(%)	Ni(%)
Carbon	-	-
Pt(3)/C	3.08	0
Ni(3)/C	0	3.11
Pt(1)Ni(3)/C	0.98	3.05
Pt(2)Ni(3)/C	2.12	2.17
Pt(3)Ni(1)/C	3.13	1.02
Pt(3)Ni(2)/C	3.02	2.05
Pt(3)Ni(3)/C	3.05	2.98
Pt(3)Ni(3)/C (used)	2.95	2.86

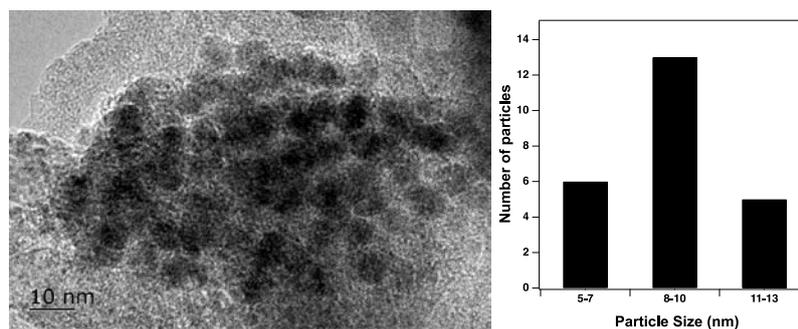


Fig.S1 TEM image of Pt(3)Ni(3) catalyst and particle size distribution

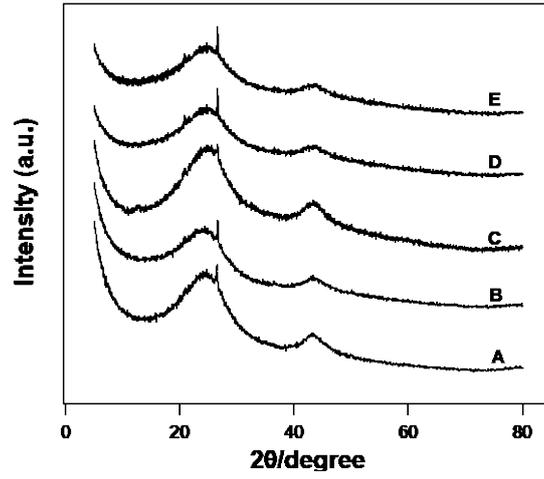
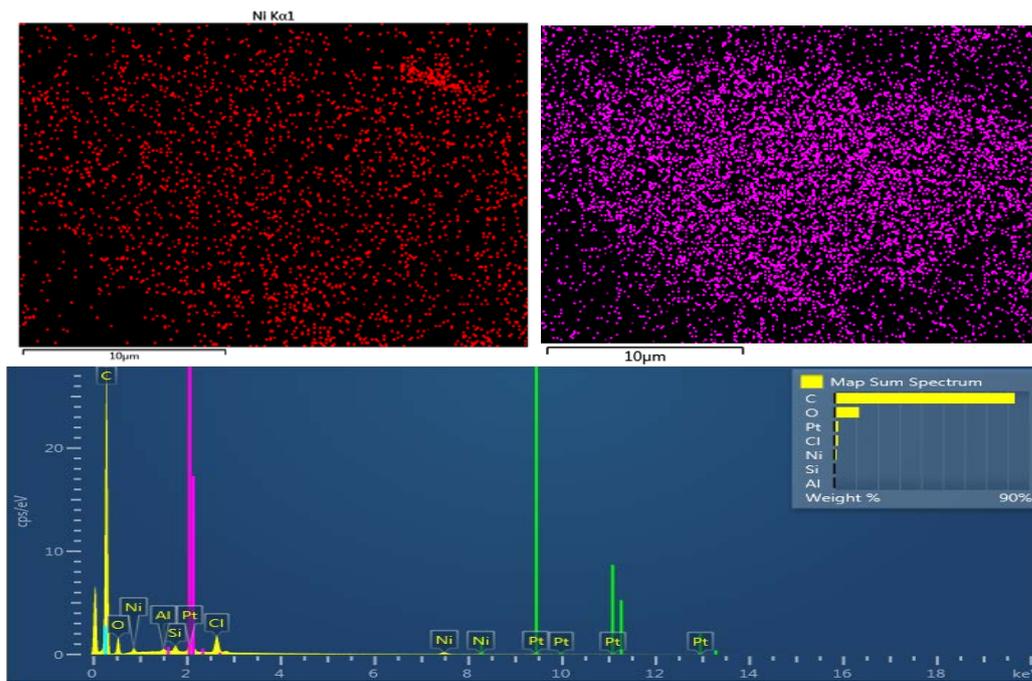
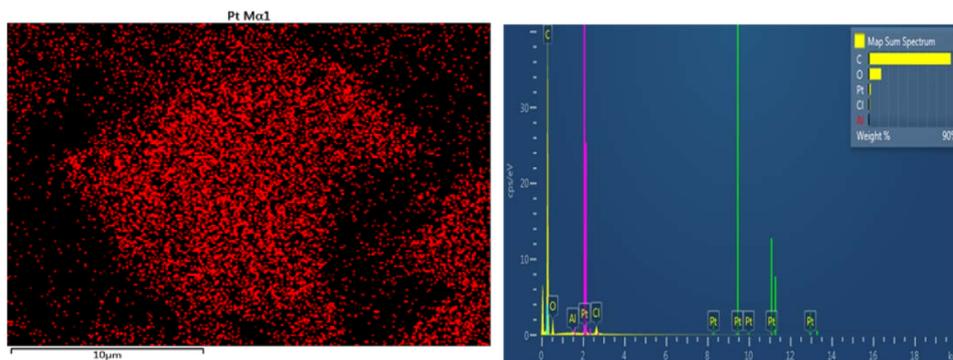


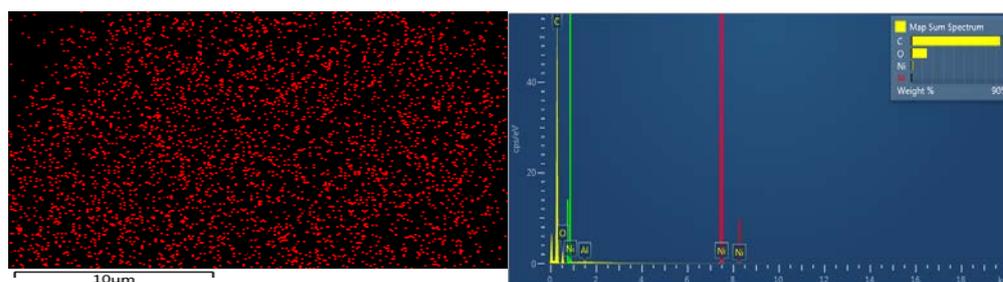
Fig. S2 XRD patterns of monometallic and bimetallic catalysts. A: active carbon; B: Pt/C; C: Ni/C; D: PtNi/C. E: used PtNi/C



A:Pt(3)Ni(3)/C



B:Pt(3)/C



C :Ni(3)/C

Fig.S3.EDX spectra of (A) Pt(3)N(3)/C, (B) Pt(3)/C, (C) Ni(3)/C catalyst

Table.S2 Hydrogenation of FOL over Pt(3)Ni(3)/C and Ni(3)/C catalyst.

entry	catalyst	FOL Conversion(%)	THFA yield(%)
1	Pt(3)Ni(3)/C	99	95
2	Ni(3)/C	78	60
3	Pt(3)/C	14	12

Reaction condition: FOL, 0.2 g; weight of catalyst, 0.1g; water, 20 ml; 35 °C, 10 h;

Table. S3 The effect of FAL concentration and mass of catalyst on hydrogenation of FAL

Entry	FAL (wt%)	Temperature (°C)	Time (h)	FAL conversion (%)	FOL yield (%)	THFA yield (%)
1	5	35	12	88	45	42
2	5	35	24	93	35	55
3	10	35	12	95	25	68
4	20	35	12	75	45	27

Reaction condition: weight of catalyst, 0.1g; water, 20 ml; 2 MPa H<sub>2</sub> was charged at room temperature; Entry 3 and 4: weight of catalyst, 1g and 2g, respectively.

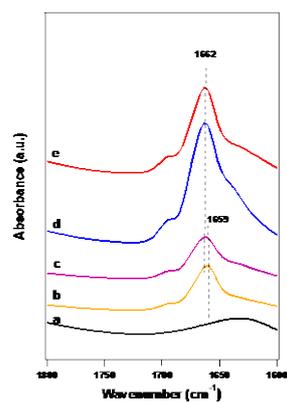


Fig.S4. Transmission FTIR of furfural adsorbed on reduced catalyst at 35 °C. (a) Background; (b) Pt/SiO<sub>2</sub>; (c) PtNi/SiO<sub>2</sub>; (d) Ni/SiO<sub>2</sub>; (e) SiO<sub>2</sub>;