Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting information

Hydrogenation of Nitriles to Primary Amines Over Highly Dispersed Ni/SiC Catalyst Without Ammonia Addition

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Tables and Figures

Table S1. Optimization of reaction conditions for BN hydrogenation over Ni/SiC.

Entry	Solvent	Conv. (%)	Select. (%)
1	Methanol	57%	77%
2	Ethanol	51%	77%
3	i-Propanol	38%	76%
4	Hexane	44%	39%
5	1,4-Dioxane	11%	69%
6	THF	19%	74%

Reaction conditions: 1 mmol of BN, 20 mL of solvent, 100 mg of catalyst, 2 MPa of H_2, 120 °C, reaction time was 2 h.

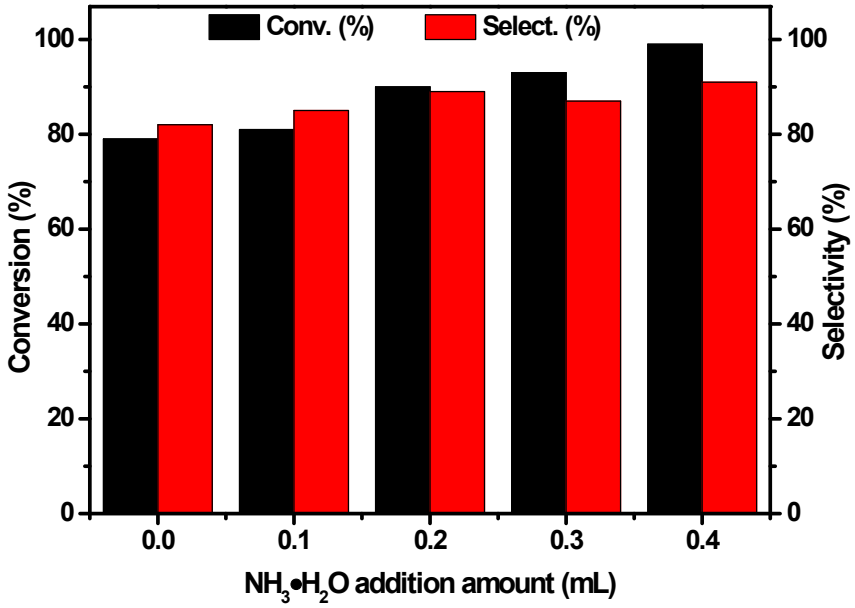

Figure S1. The effect of ammonia addition on the hydrogenation of BN Reaction conditions: 1 mmol of BN, 20 mL of methanol, 0.1-0.4 mL of NH_3•H_2O, 100 mg of catalyst, 2 MPa of H_2, 150°C, reaction time was 1.5 h.

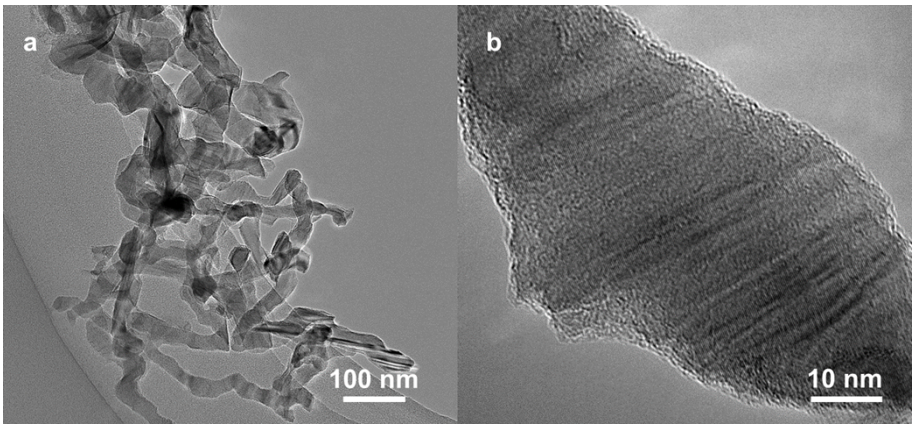

Figure S2. TEM (a) and HRTEM (b) images of Ni/SiC

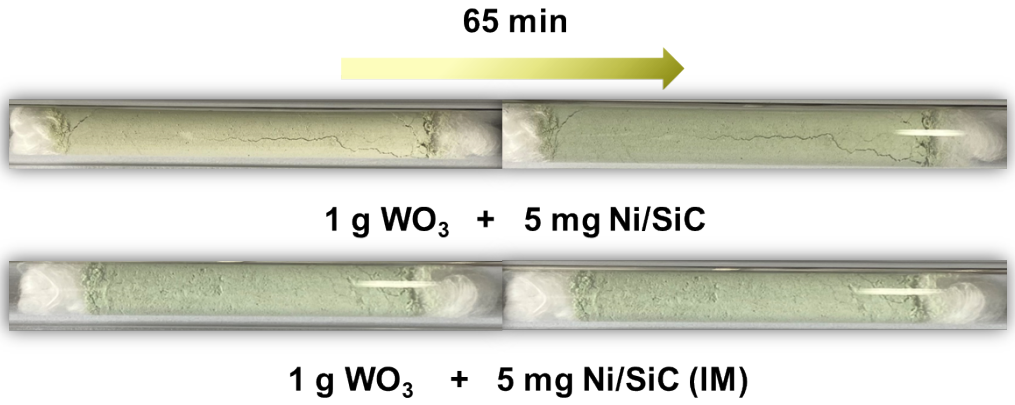

Figure S3. Comparison of the H-spillover capability of different catalysts by reducing WO_3 at 30 °C with a H_2 flow of 10 mL/min

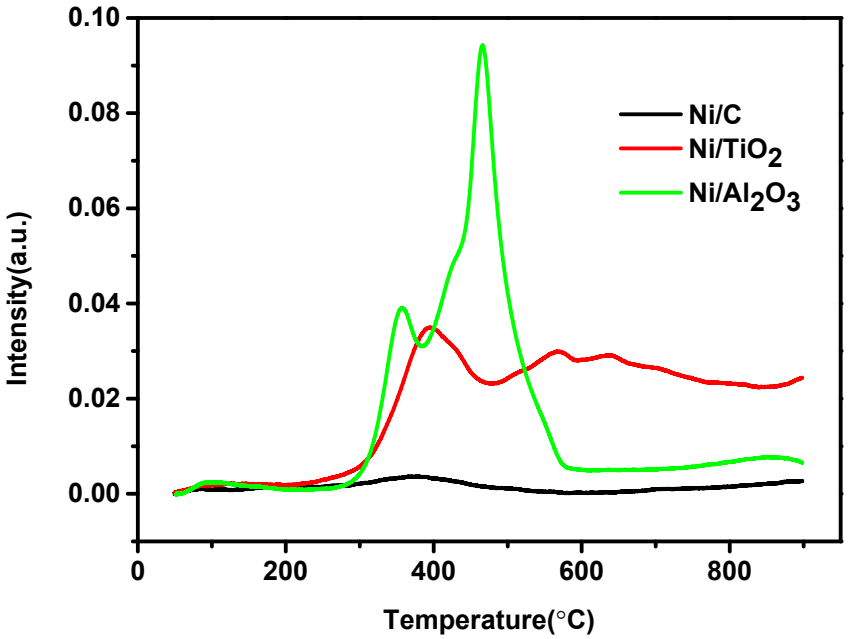

Figure S4. CO_2-TPD profiles of Ni/C, Ni/Al_2O_3 and Ni/TiO_2

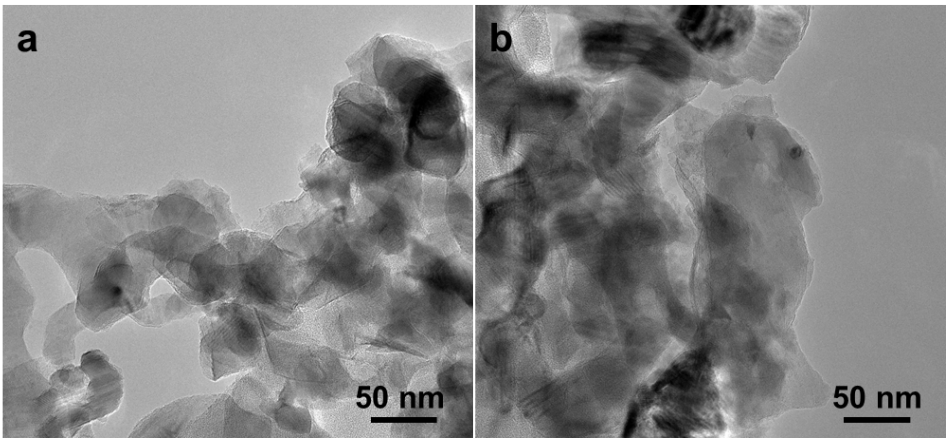

Figure S5. TEM images of Ni/SiC after 5 times used

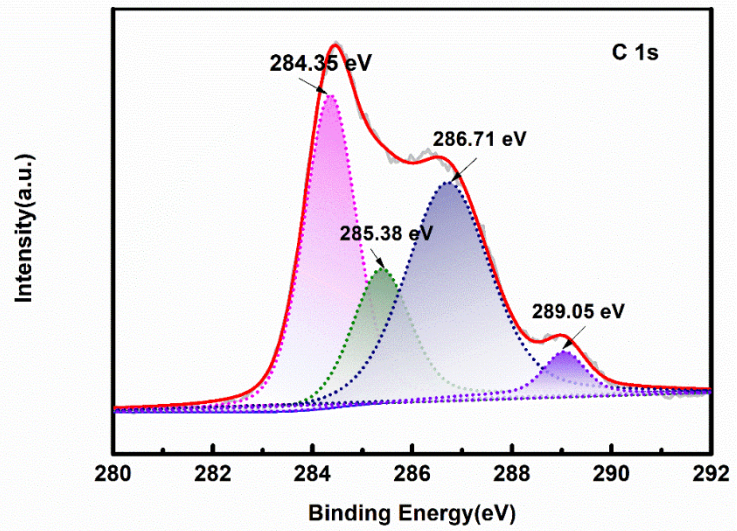

Figure S6. C 1s XPS spectrum of Ni/SiC