Electronic Supplementary Information

Highly dispersed nickel nitride nanoparticles on nickel nanosheets as an active catalyst for hydrazine electrooxidation

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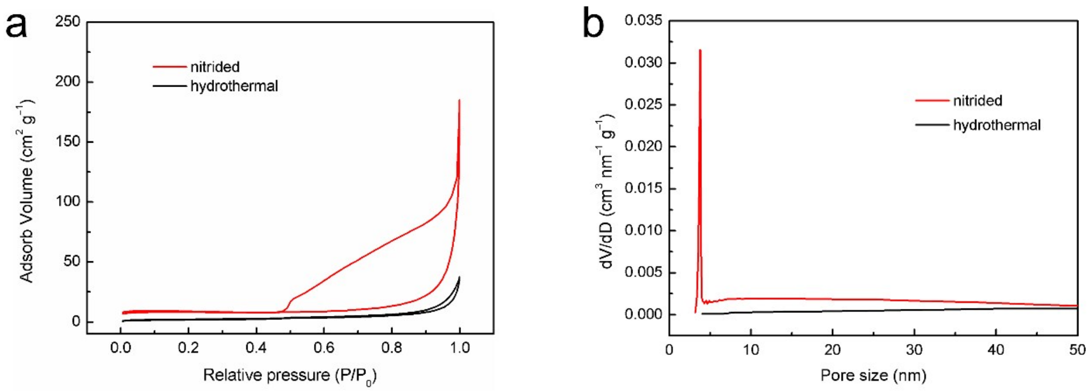

Figure S1. (a) N_2 adsorption/desorption isotherms and (b) the corresponding pore size distribution of the hydrothermal and nitrided catalysts, respectively.

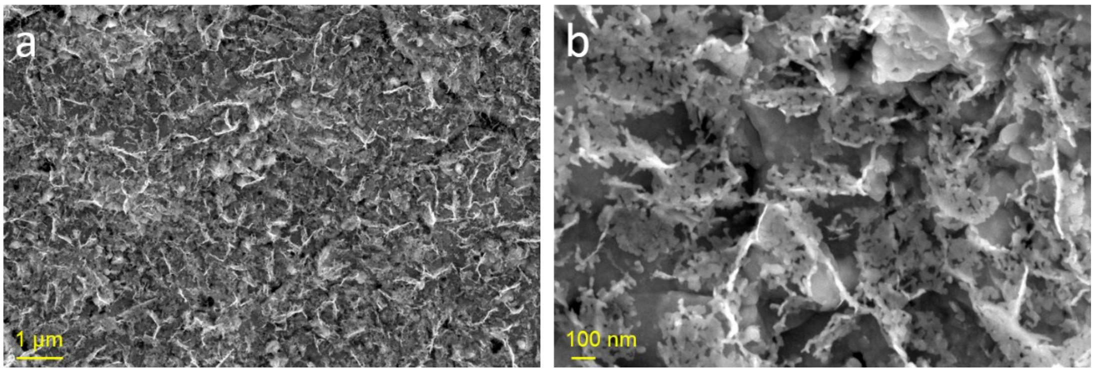

Figure S2. FE-SEM images of the Ni_3N/NF catalyst at different magnifications.

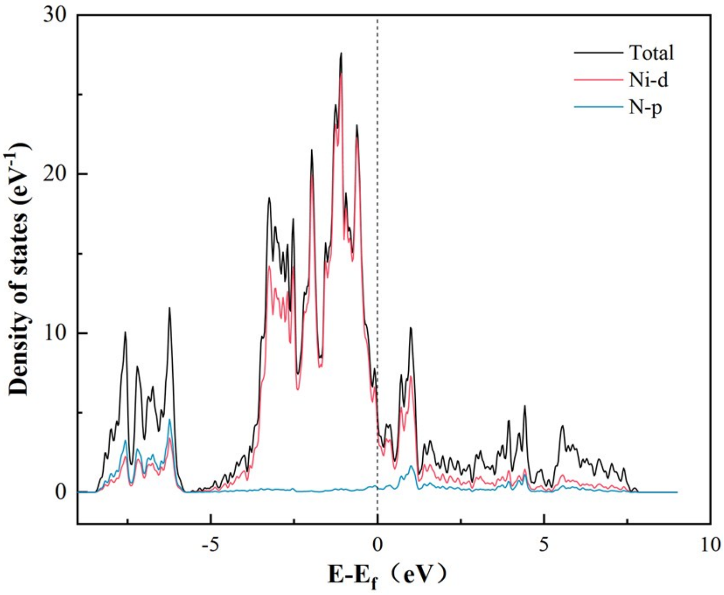

Figure S3. Computed density of states of Ni_3N. The Fermi level (E_F) is set to zero.

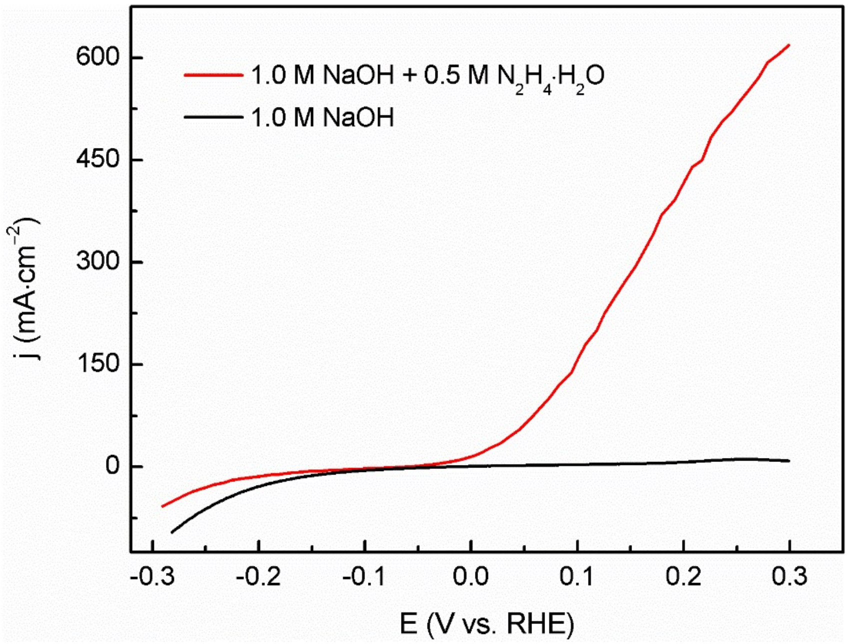

Figure S4. Comparison of the LSV curves of the Ni_3N/Ni/NF catalyst in an electrolyte with and without $N_2H_4 \cdot H_2O$ at a scan rate of 20 $mV \cdot s^{-1}$.

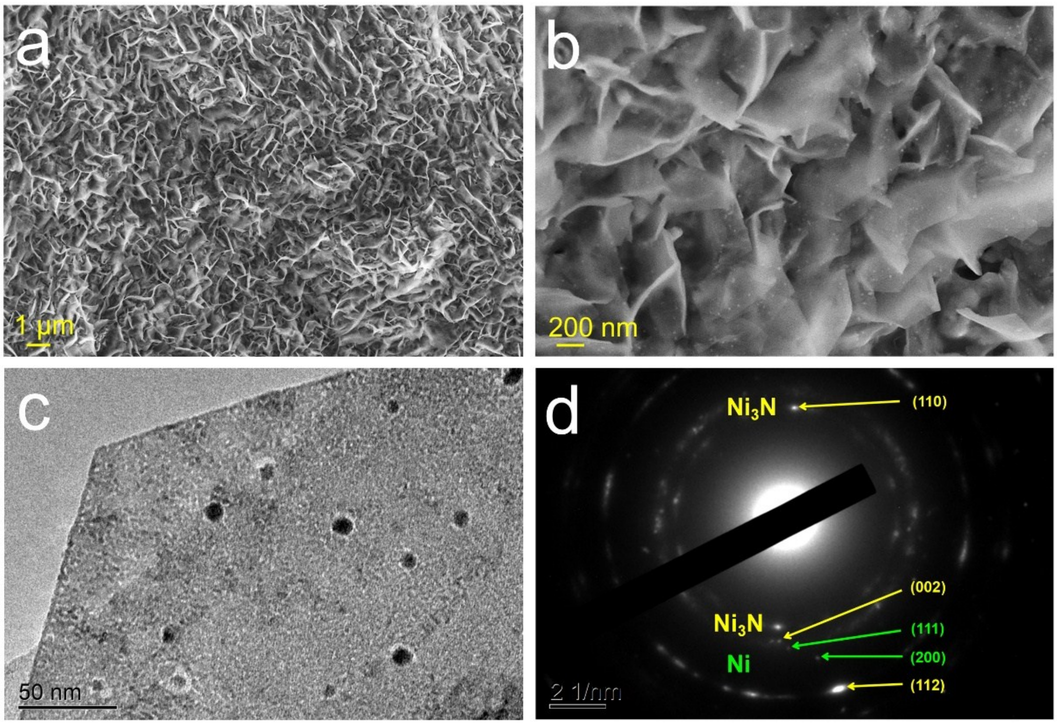

Figure S5. (a,b) FE-SEM images, (c) TEM image and (d) SAED pattern of the post-used Ni_3N/Ni/NF catalyst after 12 h of constant-current measurement.

Table S1. A comparison of catalytic properties of various catalysts towards hydrazine electrooxidation.

Sample	Electrolyte	Electrocatalytic performance		Reference
	$[N_2H_4]$ and [NaOH] (M)	j ($mA\cdot cm^{-2}$)	E (V vs. RHE)	
$Ni_{0.6}Co_{0.4}$/NF	0.5, 3.0	292	0.22	[1]
Ni-NSA/NF	0.5, 3.0	228	0.25	[2]
Cu film/Cu foil	0.2, 3.0	135	0.47	[3]
CoNi-S/NF	2.0, 0.1	118	1.0	[4]
Ni_2P/NF	0.1, 1.0	220	0.10	[5]
NiS_2/TiM	0.5, 1.0	300	0.22	[6]
Ni-Cu/Cu foil	0.1, 3.0	300	0.47	[7]
Ni_xP/NF (DP)	0.1, 1.0	580	0.30	[8]
Ni-B/NF	0.1, 1.0	340	0.30	[9]
Ni-Zn/NF	0.1, 1.0	225	0.30	[10]
Pd-porous Ni/NF	0.1, 1.0	450	0.30	[11]
Ni_3N/Ni/NF	0.5, 1.0	623	0.30	This work

References

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