Sm_6WO_{12} Tungstate Supported Nickel-Based Catalysts with Enhanced Resistance to Coking and Oxidation in Auto-thermal Reforming of Acetic Acid

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Table S1. D_{Ni}, Ea and TOF-H_2 of NSW catalysts.

Catalysts	D_{Ni}[a] (%)	TOF-H_2 (10^{-2} s^{-1})	Ea (kJ/mol)
NS	1.6	1.56	57.6
NSW20	18.8	2.38	43.5
NSW40	1.8	1.61	68.0

[a] The dispersion of Ni (D_{Ni}) was calculated by the results of H_2-TPD assuming H_{ad}/Ni^0=1.

Table S2. Comparison of catalytic performance from reforming.

Catalyst	T (°C)	Time (h)	H_2 yield (%)	TOF-H_2 (10^{-2} s^{-1})	reforming process	Ref.
Ni/ATP[1]	700	-	79	-	SR	[1]
Co/CaSBA-15[2]	600	5	72	-	SR	[2]
Co-Rh/CeO_2[3]	700	30	76	-	SR	[3]
Ni@SiO_2-T[4]	750	10	58	-	SR	[4]
Co-Ba-Al[5]	650	10	69	0.4	ATR	[5]
Ni/$SmMn_2O_5$[6]	700	10	76	0.6	ATR	[6]
Zn-Ni-Al-Fe-O[7]	650	10	69	-	ATR	[7]
Ni/Sm_6WO_{12}[current work]	650	10	70	2.4	ATR	current work

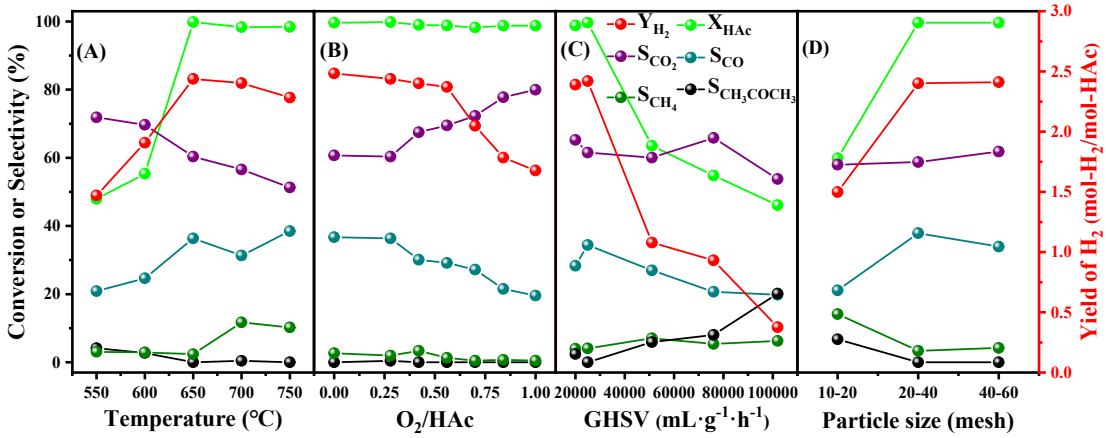

Fig. S1. Effect of (A) temperature, (B) O_2/HAc, (C) GHSV and (D) particle size on the reactivity of NS20W in ATR of HAc.

Notes and references

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