Effects of nitrogen-dopants on Ru-supported catalysts for acetylene hydrochlorination

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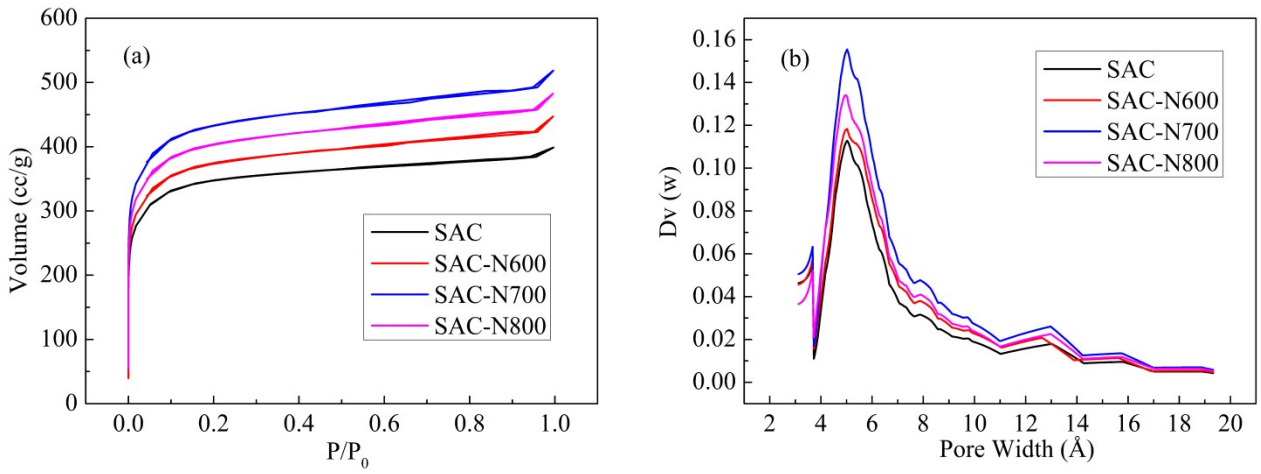
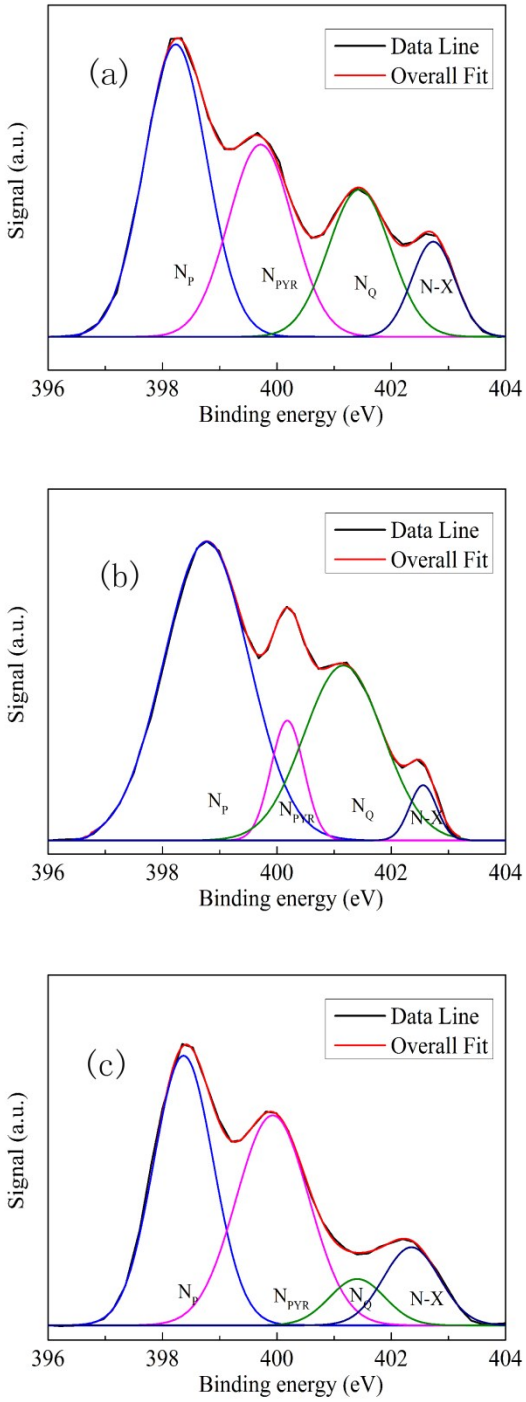


Fig. S1. N_2 adsorption-desorption isotherms (a) and the corresponding pore size distribution (b) of the supports.



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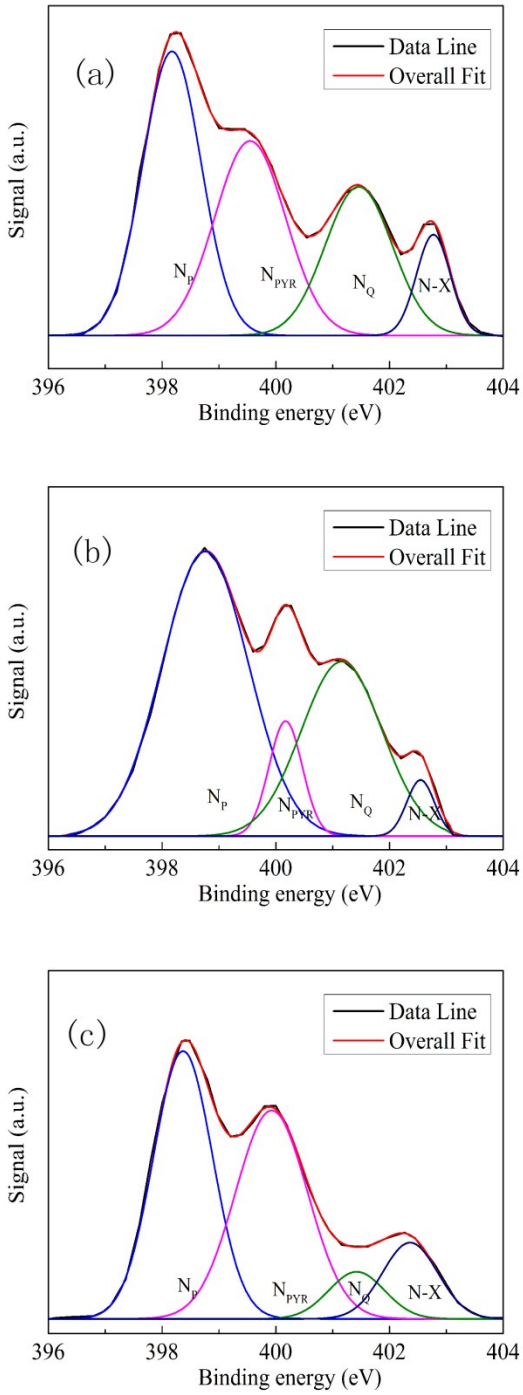
2 **Fig. S2.** N 1s XPS spectra of the fresh catalysts: (a) SAC-N600; (b) SAC-

3 N700; (c) SAC-N800.



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2 **Fig. S3.** N 1s XPS spectra of the fresh catalysts: (a) Ru/SAC-N600; (b)

3 Ru/SAC-N700; (c) Ru/SAC-N800.

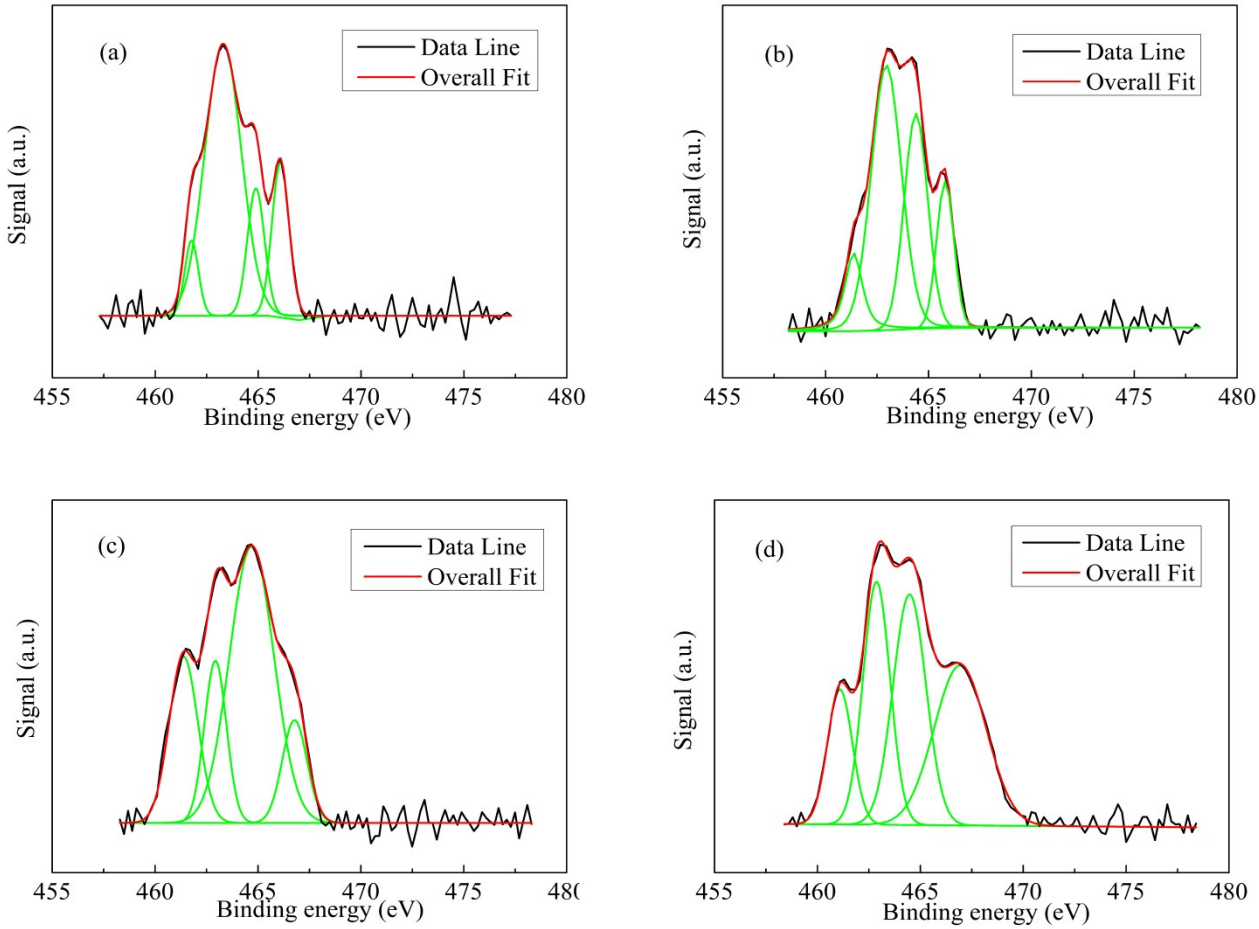

Fig. S4. Ru 3p3 XPS spectra of the fresh catalysts: (a) Ru/SAC; (b) Ru/SAC-N600; (c) Ru/SAC-N700; (d) Ru/SAC-N800.

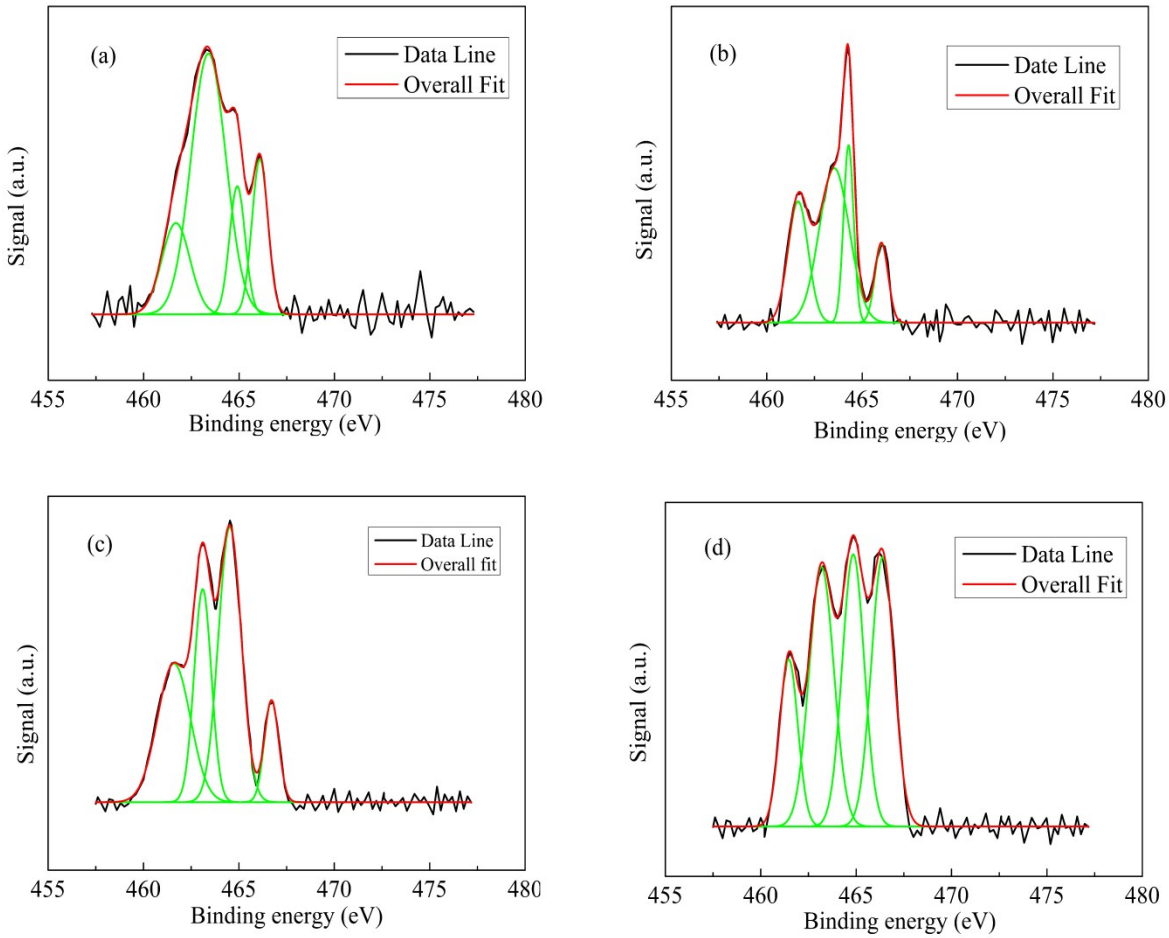

Fig. S5. Ru 3p3 XPS spectra of the used catalysts: (a) Ru/SAC; (b) Ru/SAC-N600; (c) Ru/SAC-N700; (d) Ru/SAC-N800.

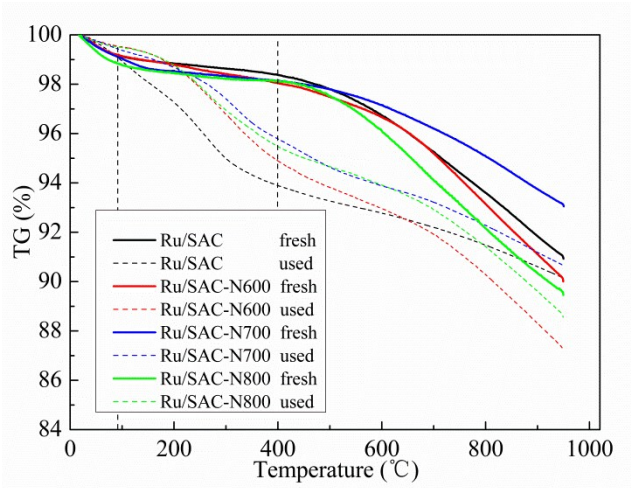

Fig. S6. TG curves of the fresh and used Ru-support catalysts.

Table S1. Nitrogen content and binding energies of nitrogen species in the catalysts

Samples	Area %, binding energy(eV)			
	N_P	N_{PYR}	N_Q	N-X
Ru/SAC-N600	37.8 (398.1)	31.6 (400.0)	22.8 (401.4)	7.8 (402.7)
Ru/SAC-N700	55.8 (398.7)	8.7 (400.1)	32.0 (401.1)	3.5 (402.5)
Ru/SAC-N800	44.6 (398.3)	35.8 (400.0)	6.7 (401.4)	12.9 (402.3)

Table S2. Elemental compositions of the bulky carbon samples determined by elemental analysis

Samples	Bulk content (%)		
	C	N	O
SAC	97.17	0.11	2.72
SAC-N600	96.98	1.42	1.60
SAC-N700	95.78	2.10	2.12
SAC-N800	95.87	1.98	2.15