SUPPLEMENTARY MATERIAL

Dispersing Pd nanoparticles on N-doped TiO_2: A highly selective catalyst for H_2O_2 synthesis

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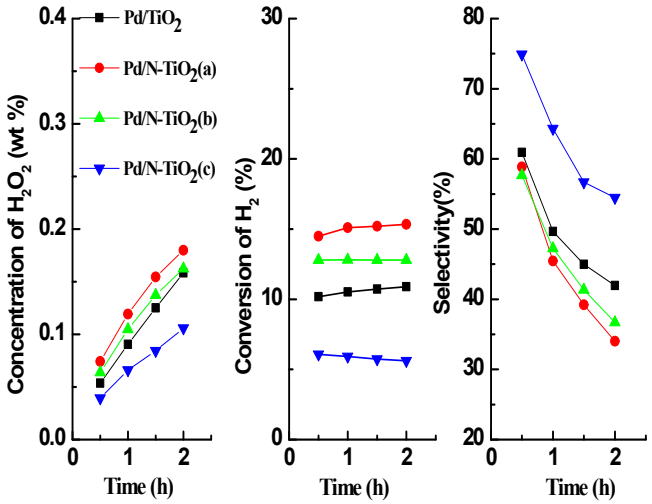

Fig. S1.Catalytic performance of Pd and Pd/N catalysts.

The catalytic results of catalyst with different Pd loadings for 2 h. Catalytic tests were carried out in the solution of 60 mL acidified ethanol by a tri-phase semi-batch reactor at 283 K, atmospheric pressure, a total flow rate of 60 mL/min with H_2:O_2:N_2=9:36:15. The amount of catalyst was 50 mg for each test unless specially emphasized.

Table S1. Catalytic performance of Pd catalysts with different thermal treatment

Catalysts	Conversion (%)	H_2O_2 Selectivity (%)	H_2O_2 Productivity (mol H_2O_2 $g_{Pd}^{-1}h^{-1}$)
Pd/TiO_2	10.2	60.9	3.0
$Pd/TiO_2(H_2)$	10.9	57.1	3.0
$Pd/TiO_2(O_2)$	8.4	62.6	2.5
$Pd/TiO_2(N_2)$	7.3	60.2	2.1

All experiments were carried out in the solution of H_2SO_4 (0.12 M)-ethanol by a tri-phase semi-batch reactor at ambient pressure and 1000 rpm for 2 h. The amount of catalyst was 50 mg for each test unless specially emphasized and all experiments were carried out for 0.5 h.