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

Pd anchored on C_3N_4 nanosheets/ reduced graphene oxide: an efficient catalyst for the transfer hydrogenation of alkenes

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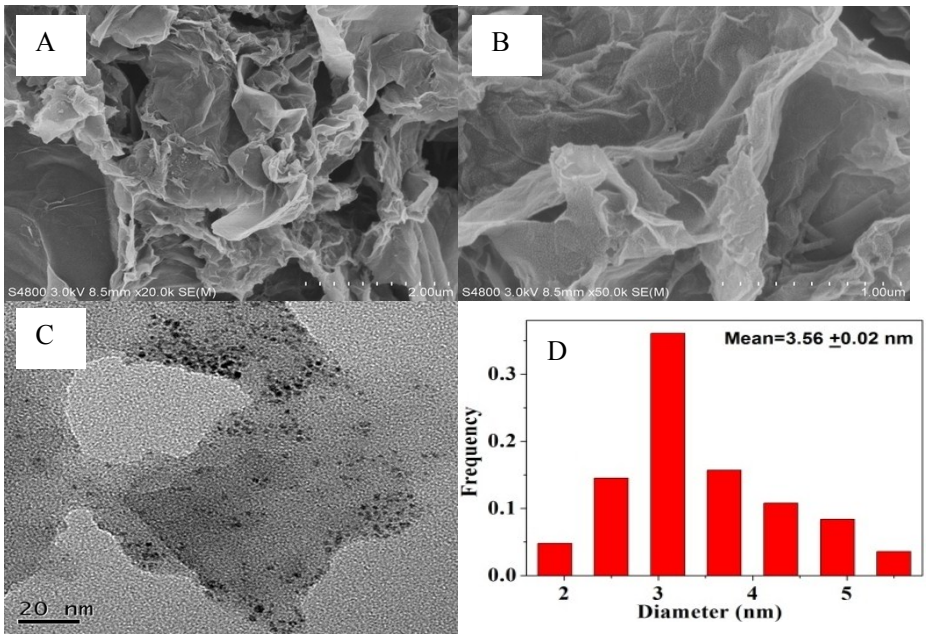

Fig. S1 The SEM images of g-C_3N_4 NS/rGO_{20} (A, B), the TEM image of the synthesized Pd-g-C_3N_4 NS (B) and Pd particle-size distribution in the Pd-g-C_3N_4 NS (D).

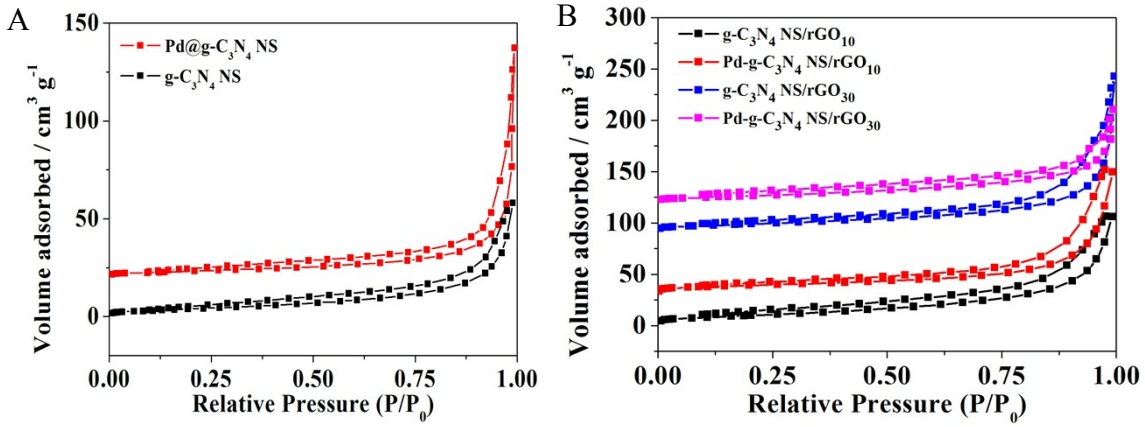

Fig. S2 The nitrogen adsorption-desorption isotherms of g-C_3N_4 NS, Pd-g-C_3N_4 NS (A) and g-C_3N_4 NS/rGO_{10}, g-C_3N_4 NS/rGO_{30}, Pd-g-C_3N_4 NS/rGO_{10}, Pd-g-C_3N_4 NS/rGO_{30} (B).

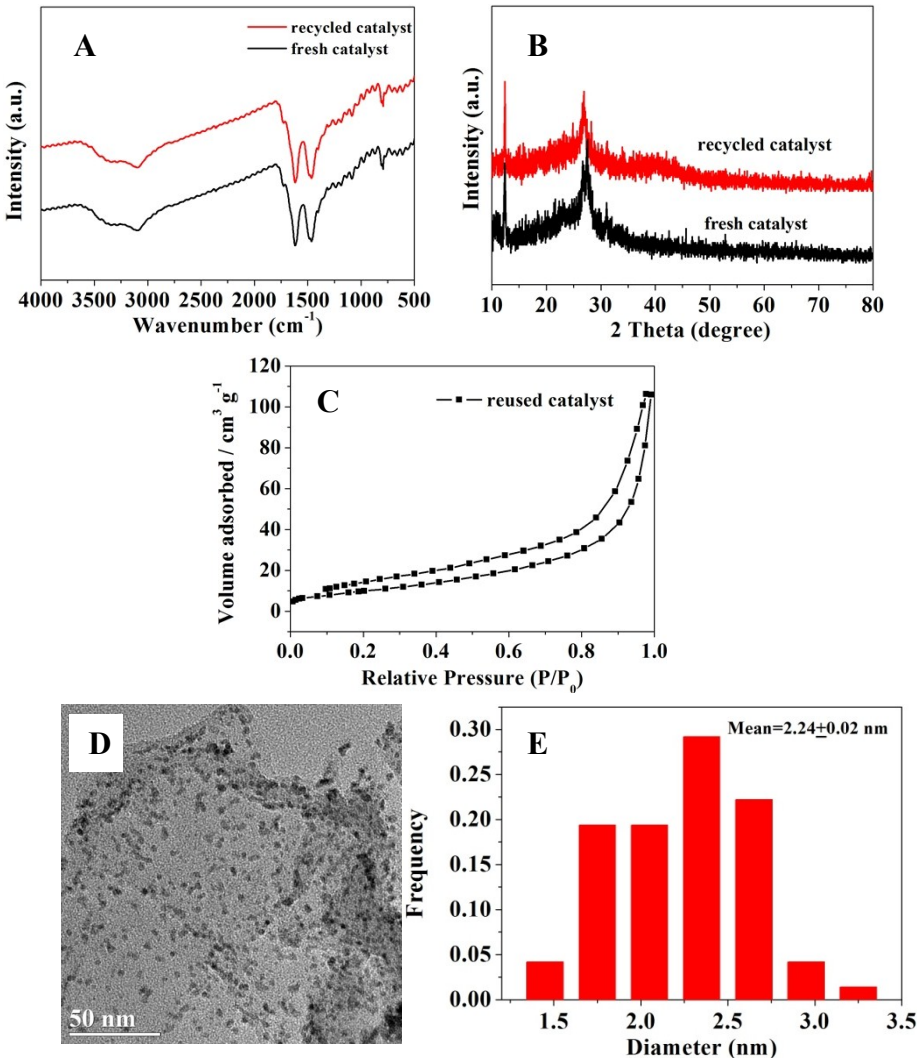

Fig. S3 FT-IR spectra (A) and the XRD pattern (B) and the nitrogen adsorption-desorption isotherms (C) and the the TEM image (D) and the Pd particle-size distribution (E) of the reused Pd-g-C_3N_4 NS/rGO_{20} catalyst.

Table S1 Various reported catalyst tested for hydrogenation of alkenes.

Entry	Catalyst	Hydrogen source	Solvent	Tem (°C)	Time (h)	TOF (h^{-1})	Reference
1	Pd/CN	HCOOH	H_2O	25	0.25-3	4-53	1
2	Pd@CN[a]	HCOOH	-	90	12	3.2-3.8	2
3	Fe_3O_4@GO	$N_2H_4 \cdot H_2O$	EtOH	80	4-20	0.7-3	3
4	Pd@POP	HCOOH:Et_3N	EtOH	25	4-15	4-17	4
5	$Al_2(BDC)_3$[a]	$N_2H_4 \cdot H_2O$	MeCN	25	24	0.07	5

6	$Cu_3(BTC)_2$[b]	$N_2H_4 \cdot H_2O$	MeCN	25	24	0.04	5
7	Cu(0)@UiO-66-NH_2	$N_2H_4 \cdot H_2O$	EtOH	25	0.25	100	6
8	HKUST-1[c]	$N_2H_4 \cdot H_2O$	MeCN	25	24	1.1	7
9	MIL-53 (Al)	$N_2H_4 \cdot H_2O$	MeCN	25	24	0.74	7
10	Monarch-1300 Carbon	N_2H_4	THF	40	24	65-95(Conv. %)	8
11	cobalt catalyst	i-PrOH	THF	100	24	0.005-0.02	9
12	Pd-g-C_3N_4 NS/rGO_{20}	HCOOH:$HCOONH_4$	EtOH	30	0.25-4	9-133	This work

[a] Pd@CN = (Pd)-supported Nitrogen-doped carbon catalyst

[b] BDC= *p*-benzenedicarboxylate

[c] BTC=1,3,5-benzenetricarboxylate

[d] HKUST-1=MOF-199

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