Carboxylic acid functionalized SBA-15 supported Pd nanocatalyst: An efficient catalyst for hydrogenation of nitro benzene to aniline in water

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Particles distribution:

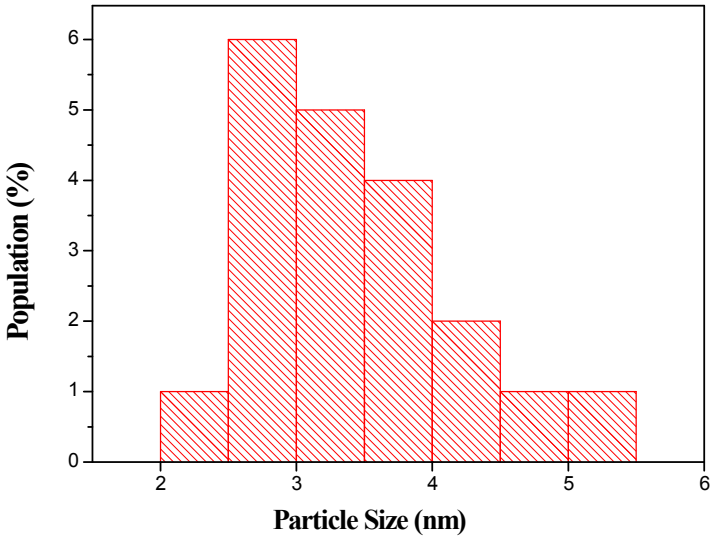

Fig. S1.Paricle size distribution of Pd/SBACOOH catalyst

Reusability Data:

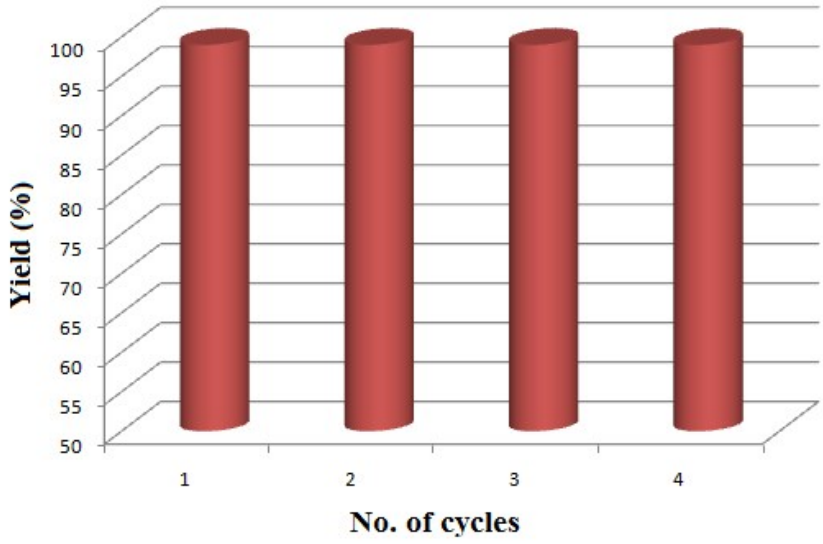

Fig. S2. Reusability of Pd/SBA-COOH catalyst

XRD Pattern of Pd/SBA-15

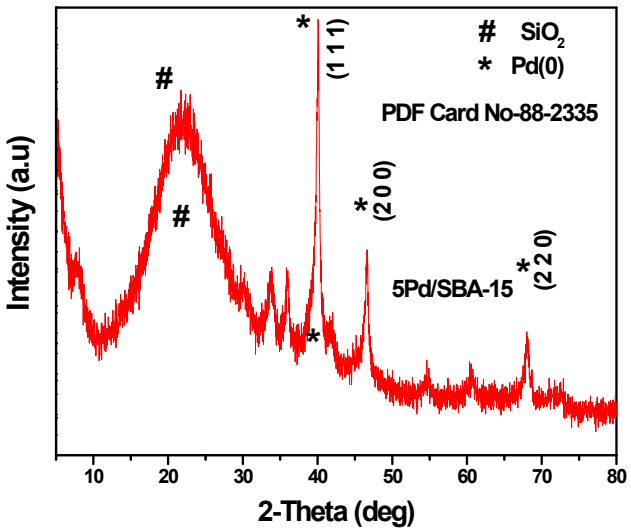

Fig. S3. XRD pattern of 5Wt% Pd/SBA-15

Table-S1:Comparison of activity of various reported catalysts including present Pd/SBA-COOH

S.No	Catalyst	Solvent	H_2 Source	Temp(°C)	TOF(h^{-1})	Referance
1*	Pd/SBA-COOH	Water	$N_2H_4.H_2O$	RT	3684.7	This Work
	Pd/SBA-15	Water	$N_2H_4.H_2O$	RT	144.5	
	Pd/SiO_2[a]	Water	$N_2H_4.H_2O$	RT	95.74	
	Pd/C[b]	Water	$N_2H_4.H_2O$	RT	75.24	
2	RhNPs/SBA-15	Water	$N_2H_4.H_2O$	RT	6117	1
3	NAP-Mg-Au(0)	Water	$NaBH_4$	RT	1.8	2
4	Rh/PICP	Ethanol	$N_2H_4.H_2O$	60	990	3
5	Rh/Fe_3O_4	Ethanol	$N_2H_4.H_2O$	80	102.9	4
6	Magnetic Au NPs	Ethanol	TMDS	RT	95	5
7	Au/TiO2-VS	CO/H2O	EtOH/H2O	25	99	6
8	Pt NWs	p-Xylene	H_2	80	57.17	7
9	$Fe(OAc)_2$	THF	$N_2H_4.H_2O$	100	3.33	8
10	Pd/CF	Ethanol	H_2	35	307	9
11	$Fe(acac)_2$	THF	TMDS	60	0.42	10
12	$ReIO_2(PPh_3)_2$	Toluene	$PhMe_2SiH$	110	0.79	11
13	NAP-Mg-Pd(0)	THF	H_2	RT	32.99	12

1* 5Wt% Pd was used

[a]BET surface area 374 m^2/g.

[b]BET surface area 1141 m2 g

TOF is calculated using the formula

TOF= No. of moles of product formed/ [mole of metal*time(h)]

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