

Supplementary Information

For

Palladium-guanidine complex immobilized on SBA-16: highly active and recyclable catalyst for the Suzuki coupling and alcohol oxidation

Hengquan Yang^{a,b,*}, Xiaojing Han^a, Zhancheng Ma^a, Runqin Wang^a, Jing Liu^a and Xiangfei Ji^{a,b}

^aSchool of Chemistry and Chemical Engineering, Shanxi University, Taiyuan 030006, China.

^bFine Chemical Engineering Centre of Education Ministry, Shanxi University, Taiyuan 030006, China.

Table S1 Textural parameters of SBA-16 and Pd-G/SBA-16-G

Samples	S ^a	V ^b	Cage size ^c
	(m ² /g)	(cm ³ /g)	(nm)
SBA-16	701	0.65	6.0
Pd-G/SBA-16-G	314	0.33	5.1

^a ET surface area.

^b Single point pore volume calculated at relative pressure P/P₀ of 0.99.

^c BJH method from adsorption branch.

Table S2 Screening of base for the Suzuki reaction in the presence of the catalyst Pd-G/SBA-16-G^a

$$\text{C}_6\text{H}_5\text{Br} + \text{C}_6\text{H}_5\text{B(OH)}_2 \xrightarrow[50\% \text{ aqueous ethanol}]{0.01 \text{ mol\% Pd, } 50^\circ\text{C}} \text{C}_6\text{H}_5\text{C}_6\text{H}_5$$

Entry	Base	Conv. (%) ^b	Entry	Base	Conv. (%) ^b
1	NaOAc	18.7	6	NaOH	98.7
2	KF	42.4	7	K ₂ CO ₃	95.0
3	NaHCO ₃	53.7	8	Na ₂ CO ₃	87.2
4	KHCO ₃	40.5	9	K ₃ PO ₄ •3H ₂ O	>99
5	KOH	97.6			

^a The reaction was carried out with 8 mmol of halide, 8.8 mmol of phenylboronic acid, 8.8 mmol of K₃PO₄•3H₂O, 0.01 mol% Pd with respect to aryl bromides (9.86 mg), 8 mL of water and 8 mL of ethanol at 50 °C in air.

^b The conversion was determined by GC.

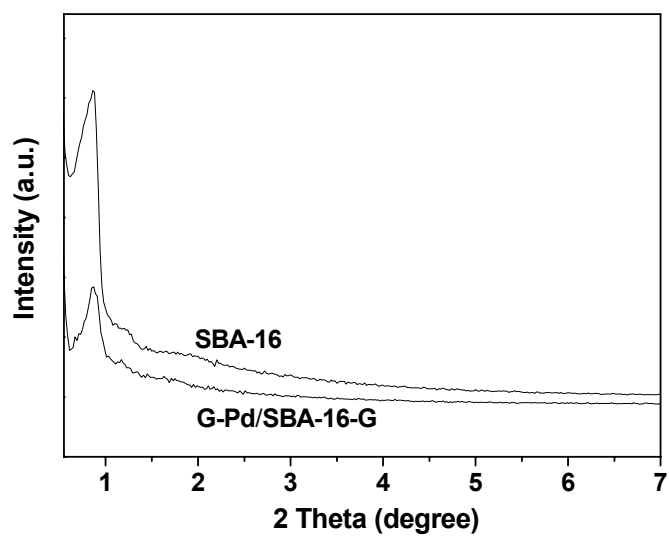


Fig. S1 XRD patterns of SBA-16 and G-Pd/SBA-16-G.