Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supporting Information

Table S1-Porosity of synthesized materials by N_2 physisorption

Sample	S_{BET} $m^2.g^{-1}$	V_t $cm^3.g^{-1}$	D nm*
Aerosil-380	360	0.85	-
Aerosil-380 SH	290	2.7	-
Aerosil-380a SH	234	1.7	-
SBA-15	927	0.98	7.6
SBA-15 SH	704	0.79	7.2
P.SBA-15	830	0.66	6.5
P.SBA-15SH	618	0.52	6.1
m-MCF	699	0.96	22
m-MCF SH	586	0.88	21

*BJH analysis from adsorption branch

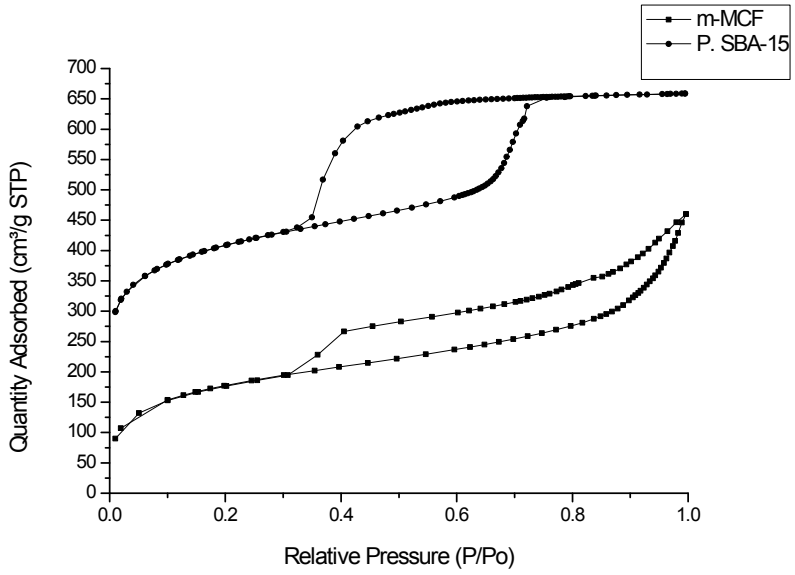


Figure S1 Ar physisorption at 77K of m-MCF and P.SBA-15

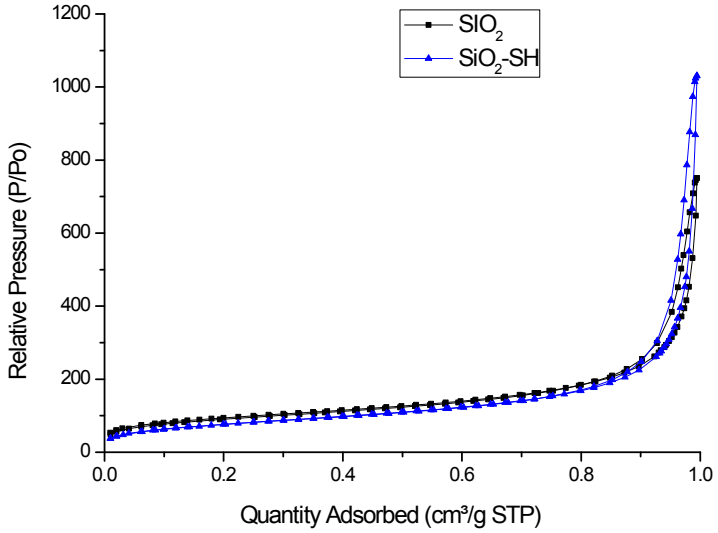


Figure S2 N_2 isotherms at 77K of aerosil-380 and functionalized aerosil

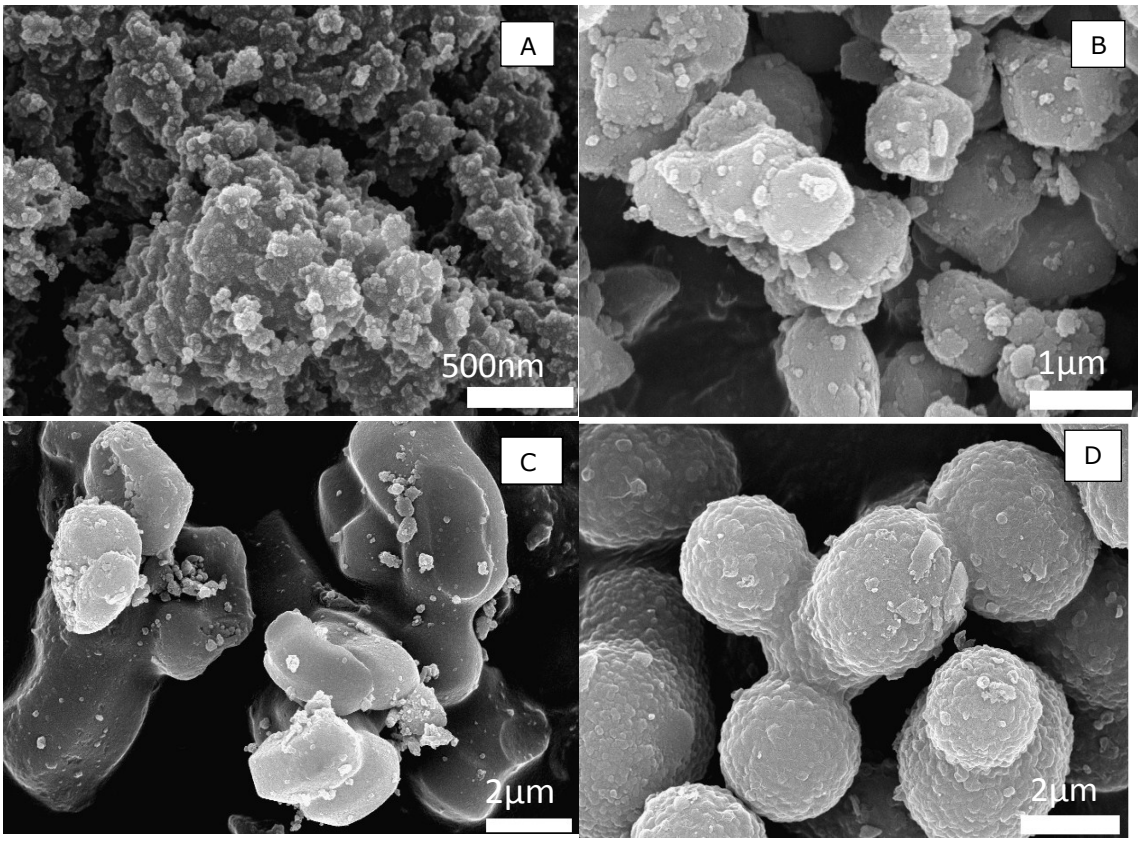


Figure S3 SEM images (A) SiO_2-SH (Aerosil) (B) SBA-15SH (C) P. SBA-15 SH (D) m-MCF-SH

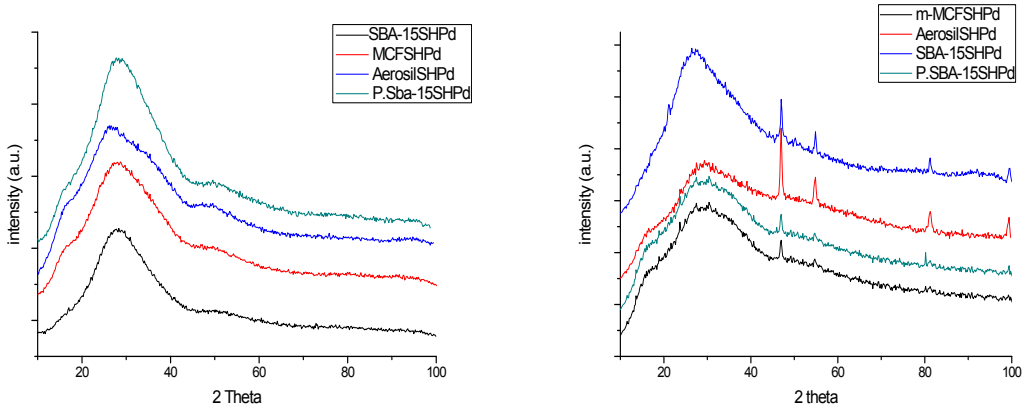


Figure S4 X-ray diffractograms of fresh catalysts (left) spent catalysts (right)

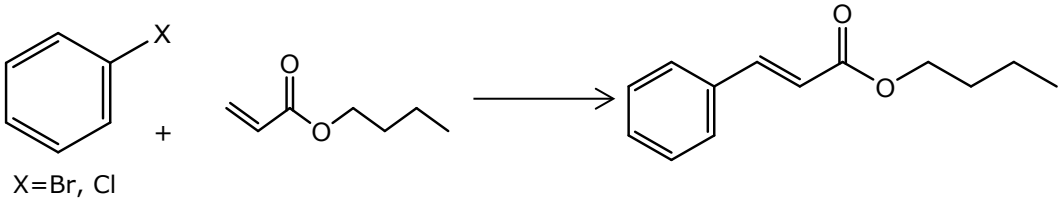


Table S2-Conversion of the Heck reaction for bromide and chloride substrates

Substrate	Solvent	Temperature	Base	Conversion (%)	Time (h)
Bromobenzene	DMF/Toluene	110	Et_3N	5	16
Bromobenzene	DMF	110	Et_3N	15	16
Bromobenzene	DMF	110	K_2CO_3	84	3
Bromobenzene	NMP	110	K_2CO_3	80	3
Chlorobenzene	DMF/Toluene	110	Et_3N	0	16
Chlorobenzene	DMF	130	Et_3N	0	16
Chlorobenzene	DMF	130	K_2CO_3	0	5
Chlorobenzene	NMP	130	K_2CO_3	0	5
Chlorobenzene	DMF	130	Et_3N	0	5

Reaction conditions: 2.25 mmol of substrate, 3.4 mmol of butyl acrylate, 20 mg of P.SBA-15SHPd (0.1mol% of palladium), 2.14 mmol of base, 2.0mL toluene+ 0.2mL DMF or 2.0mL of DMF or NMP.

Table S3-Conversion of the Heck reaction and the conversion after PVP poisoning test

Material	Conversion (%)	Conversion(%) after PVPy addition
SiO_2-SHPd	85	2
SBA-15SHPd	88	4
P-SBA-15SHPd	88	3
m-MCFSHPd	89	5

For the hot filtration test, the Heck reaction was allowed to run for 3 hours, the solid was filtered and the remained liquid was keep stirring under the same reaction condition. In the case of SBA-15SHPd, the conversion in the liquid phase increased from 48% to 71% after 10 hours, showing the contribution of soluble species on catalysis.

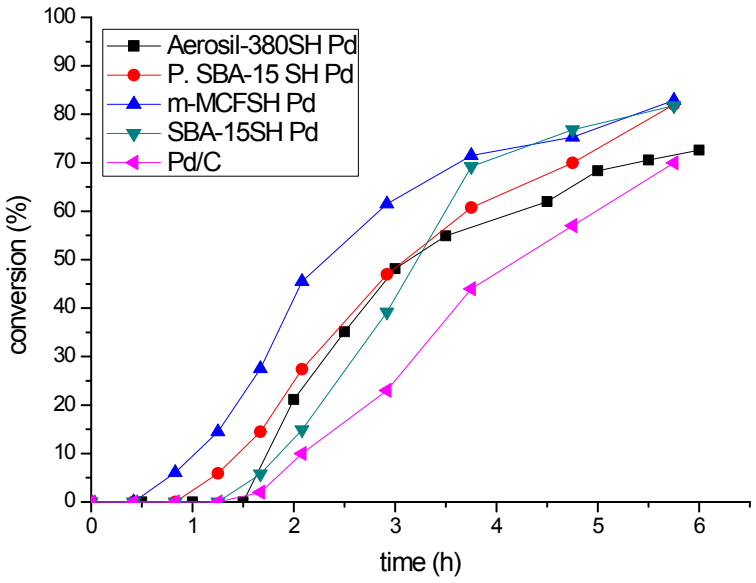


Figure S5 Plot product yield versus time for the Heck reaction between iodobenzene and butylacrylate for different materials*

* The experiments were run at a lower palladium concentration (0.01mol% of Pd related to iodobenzene).

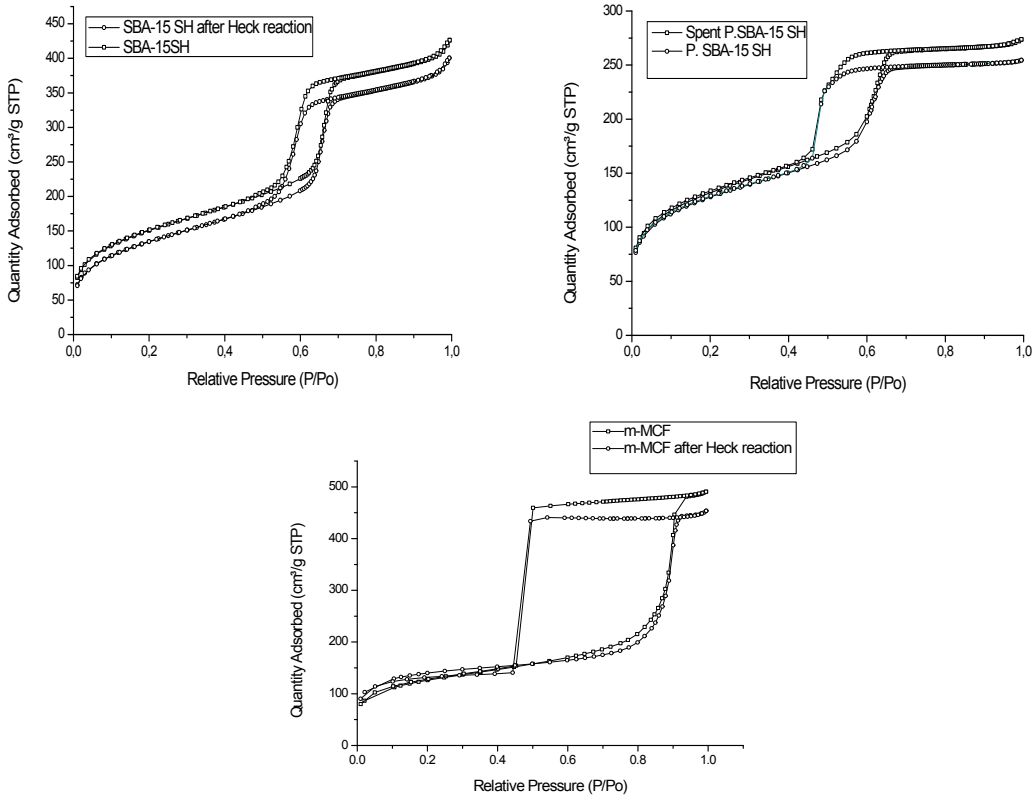
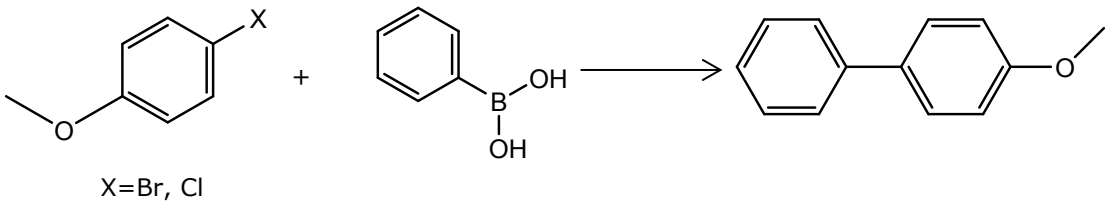


Figure S6 N_2 isotherms of fresh and spent OMS materials after the Heck reaction



X=Br, Cl

Table S4 Conversion of the Suzuki reaction for bromide and chloride substrates

Substrate	Solvent	Temperature	Base	Conversion (%)	Time (h)
4-bromoanisole	ethanol	70	$Na_2PO_4.12H_2O$	8	3
4-bromoanisole	DMF	130	$Na_2PO_4.12H_2O$	80	2
4-bromoanisole	NMP	130	$Na_2PO_4.12H_2O$	80	2
4-chloroanisole	ethanol	70	$Na_2PO_4.12H_2O$	0	3
4-chloroanisole	DMF	130	$Na_2PO_4.12H_2O$	10	4
4-chloroanisole	NMP	130	$Na_2PO_4.12H_2O$	12	4

Reaction conditions: substrate (2.4 mmol), phenylboronic acid (2.88 mmol), base (2.4 mmol), 20 mg of P.SBA-15SHPd (0.12 mol % of Pd) and 4 mL of solvent

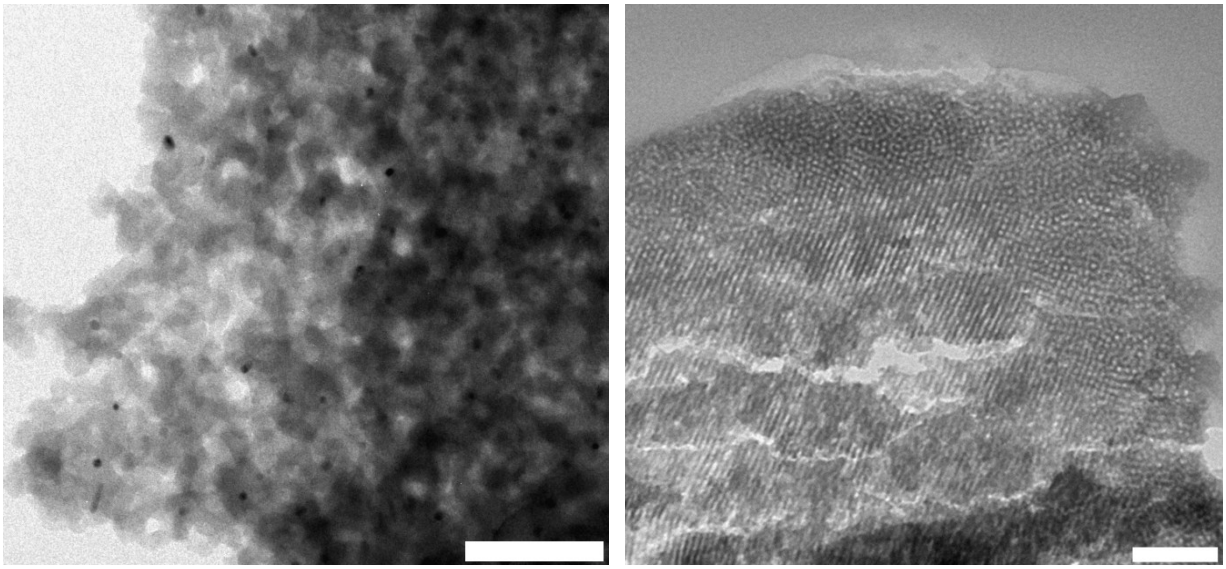


Figure S7 TEM images: Spent SBA-15SHPd (left) Spent P.SBA-15 (right) scale bars 100 nm

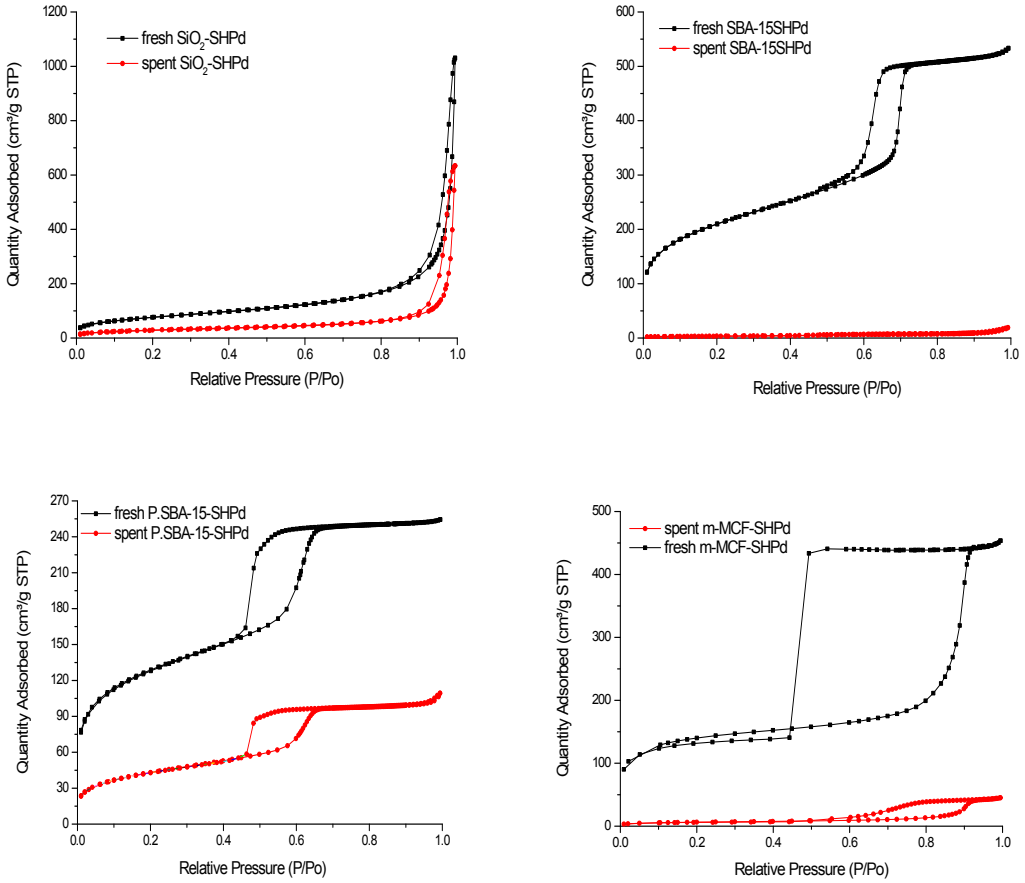


Figure S8 N_2 isotherms of fresh and spent OMS materials after the Suzuki reaction