Electronic Supporting Information

Catalytic etherification of glycerol to *tert*-butyl glycerol ethers using *tert*-butanol over sulfonic acid functionalized mesoporous polymer

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Figures

Tables

Fig. S1. Nitrogen adsorption-desorption isotherm of MP and MP-SO_3H-*x*

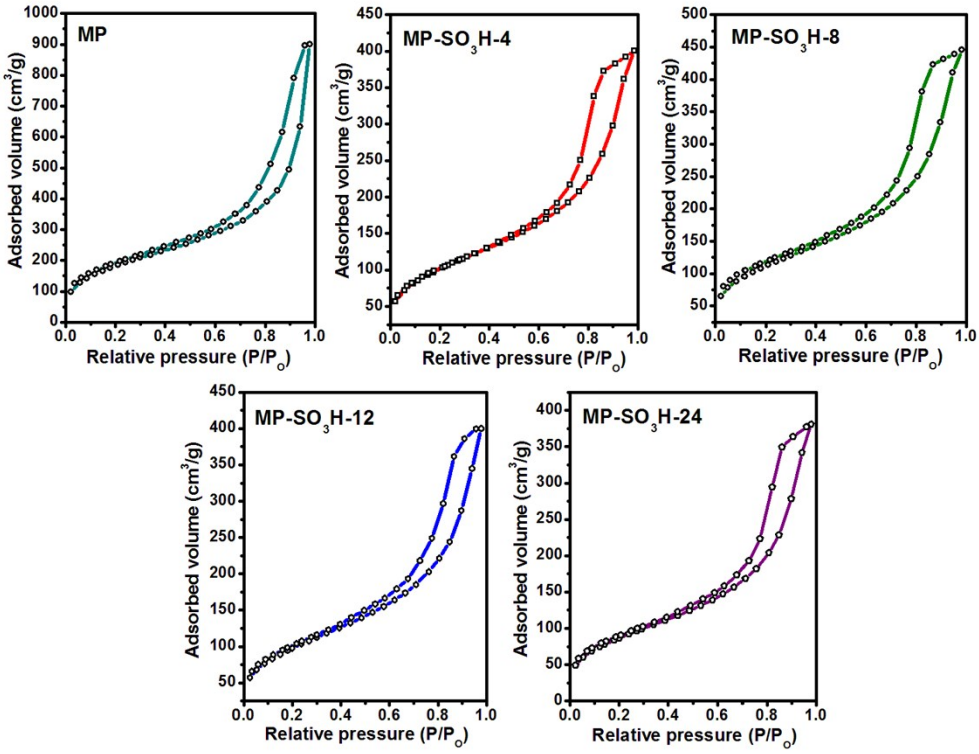


Fig. S2. BJH Pore size distribution curves of MP and MP-SO_3H-*x*

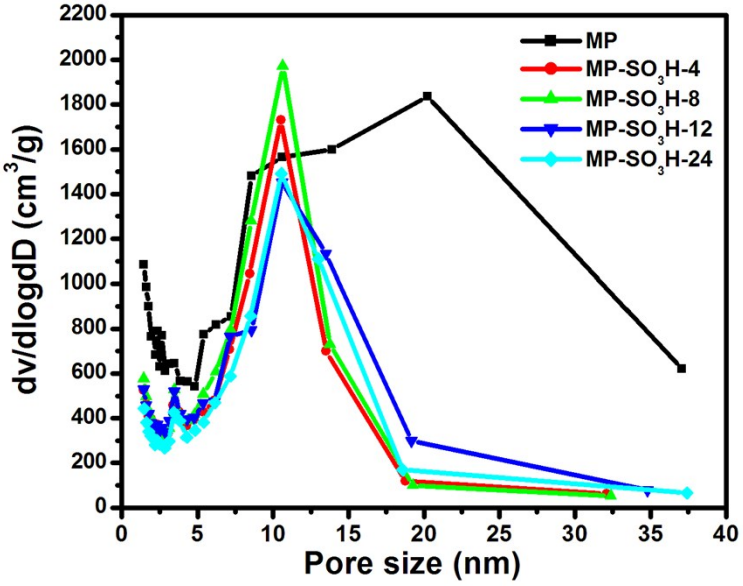
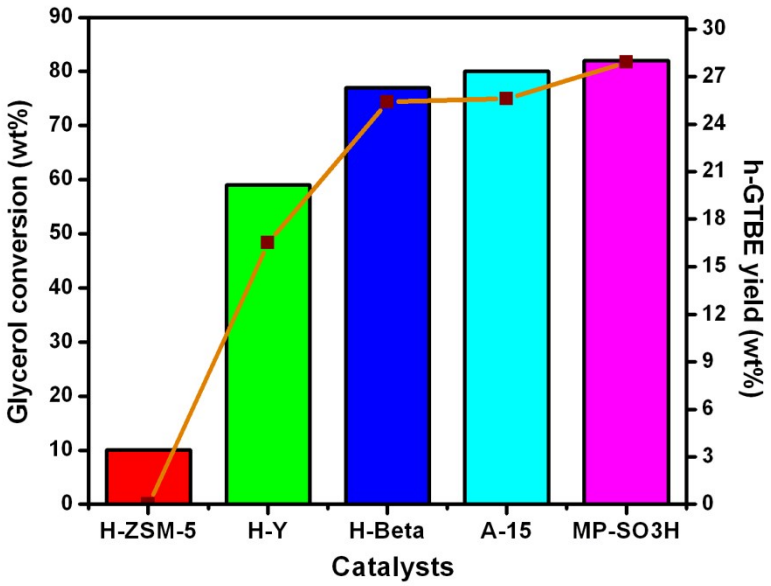


Fig. S3. Catalytic activity correlation of MP-SO_3H-8 and other solid acid catalysts with h-GTBE yield



Reaction conditions: Glycerol = 6 g, *tert*-butanol = 19.3 g, reaction temperature= 95 °C, catalyst wt = 0.3 g, time = 6 h, stirring speed = 800 rpm.

Table S1: Comparison of MP-SO_3H-8 catalyst with the reported solid acid catalysts

Catalyst	Temp (°C)	Gly/ TBA	Time (h)	Catalyst amount (wt%)	Glycerol conv. (wt%)	Selectivity (wt%)			h-GTBE (yield)	Ref
						MTBE	DTBE	TTBE		
Amberlyst-15	90	1: 8	48	6	91.0	63.0	36.0	1.0	33.7	1
Amberlyst-16	90	1: 8	48	6	67.0	65.0	34.0	1.0	23.5	1
Amberlyst-36	90	1: 8	48	6	69.0	69.0	30.0	1.0	21.4	1
Amberlyst-35	90	1: 8	48	6	70.0	71.0	27.0	2.0	20.3	1
Lewatit K2629	90	1: 8	48	6	71.0	66.0	33.0	1.0	24.1	1
Nafion SAC-13	90	1: 8	48	6	30.0	91.0	9.0	1.0	3.0	1
H-Beta	75	1:4	48	5	63.0	74.0	26.0	-	16.4	2
F-H-Beta	75	1:4	48	5	75.0	63.0	36.0	1.0	27.8	2
Amberlyst-15	75	1: 8	48	5	81.0	64.0	35.0	1.0	29.2	2
Sulfonated clay	120	1:6	5	5	81.0	68.0	30.0	2.0	25.9	3
MP-SO_3H-8	**95**	**1:6**	**6**	**5**	**85.0**	**65.0**	**34.0**	**1.0**	**29.8**	PW
MP-SO_3H-8	**95**	**1:6**	**24**	**5**	**85.0**	**56.0**	**42.0**	**2.0**	**37.4**	PW
MP-SO_3H-8	**95**	**1:4**	**6**	**5**	**82.0**	**66.0**	**32.5**	**1.5**	**27.9**	PW
MP-SO_3H-8	**95**	**1:4**	**24**	**5**	**83.5**	**63.0**	**35.0**	**2.0**	**30.9**	PW
H-ZSM-5	95	1:4	6	5	10.0	100	-	-	0.0	PW
H-Y	95	1:4	6	5	59.0	72.0	27.0	1.0	16.5	PW
H-Beta	95	1:4	6	5	77.0	67.0	33.0	-	25.4	PW
Amberlyst-15	95	1:4	6	5	80.0	68.0	31.6	0.4	25.6	PW

Gly = glycerol, TBA= *tert*-butanol, PW = Present work

References

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