Supporting Information

Sulfonic acid-functionalized mesoporous carbon/silica materials as efficient catalysts for dehydration of fructose into 5-hydroxymethylfurfural

Xiaoning Tian,[a] Zhongqing Jiang,[a,*] Yingying Jiang,[a] Weitong Xu,[a] Chenxu Li,[b,a] Lijuan Luo[a] and Zhong-Jie Jiang,[c,*]

[a] Department of Materials and Chemical Engineering, Ningbo University of Technology, Ningbo 315016, Zhejiang, China. Email: zhongqingjiang@hotmail.com

[b] Chemical Engineering Research Institute, Membrane Research Center, East China University of Science and Technology, Shanghai 200237, China.

[c] New Energy Research Institute, College of Environment and Energy, South China University of Technology, Guangzhou 510006, Guangdong, China. Email: zhongjiejiang1978@hotmail.com or eszjiang@scut.edu.cn

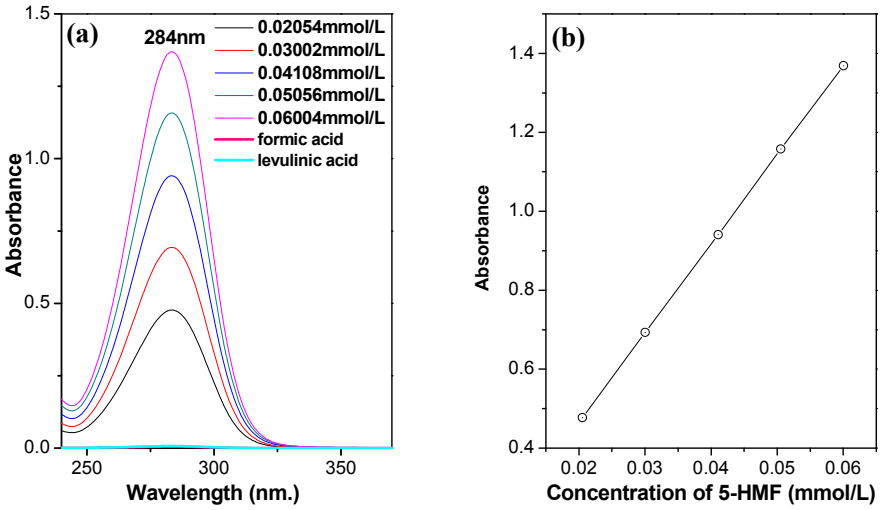

Fig. S1. (a) UV-Vis spectra of the 5-HMF solutions at the different concentrations and UV-Vis spectra of formic acid or levulinic acid. (b) Plot of absorbance at 284 nm vs. the 5-HMF concentration. The UV-visible absorption coefficient of the 5-HMF at 284 nm estimated is 2.3×10^4 L/mol·cm.

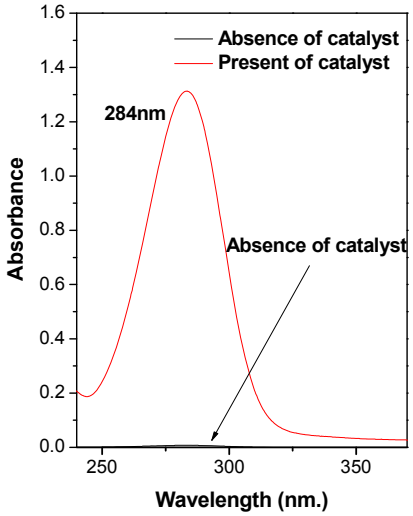

Fig. S2 UV-Vis spectra of the solutions in the present and absence of the sulfonic acid-functionalized mesoporous carbon/silica (77%SC-S(3,0.32)).

Table S1. Pore structure and Specific surface area of the mesoporous silicas and the corresponding catalysts.

samples	Specific surface area(m^2/g)	Pore size (nm)	Pore volume(cm^3/g)
S(2,0.32)	681	12.412	2.337
22%SC-S(2,0.32)	528	5.622	0.6655
77%SC-S(2,0.32)	444	3.823	0.2629
200%SC-S(2,0.32)	414	1.9	0.22

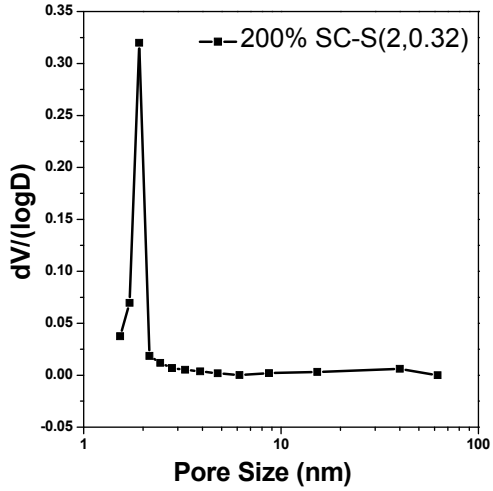

Fig. S3 BJH pore size distribution of 200%SC-S(2,0.32).