

Supplementary information

**Sulfonic acid-functionalized platelet SBA-15 materials as efficient catalysts for
biodiesel synthesis**

Shih-Yuan Chen,^a Toshiyuki Yokoi,^b Chih-Yuan Tang,^c Ling-Yun Jang,^d Takashi
Tatsumi,^b Jerry C. C. Chan,^a Soofin Cheng,^{a*}

^aDepartment of Chemistry, National Taiwan University, Taipei 106, Taiwan.

*^bCatalytic Chemistry Division, Chemical Resources Laboratory, Tokyo Institute of
Technology, 4259-R1-9 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan.*

^cInstrutmentation Center, National Taiwan University, Taipei 106, Taiwan.

*^dResearch Division, National Synchrotron Radiation Research Center, Hsinchu 300,
Taiwan.*

To whom correspondence should be address:

Prof. Soofin Cheng

Department of Chemistry, National Taiwan University, Taipei 106, Taiwan.

TEL: +886-2-33661662

FAX: +886-2-2363-6359

E-mail: chem1031@ntu.edu.tw

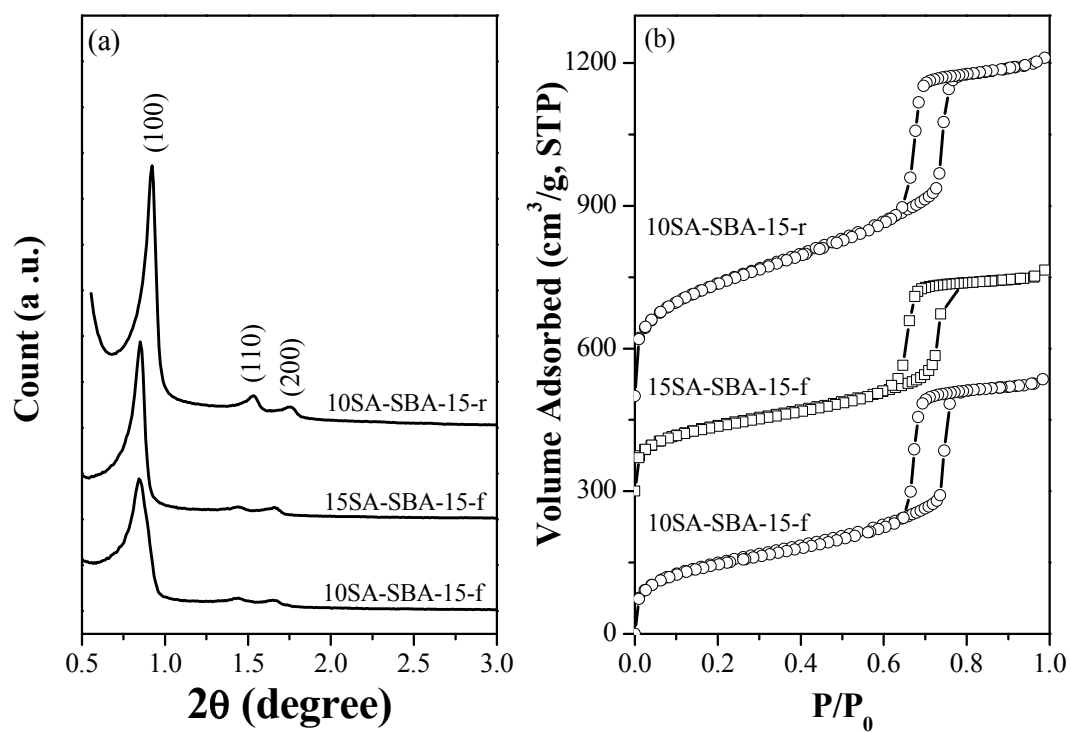


Fig. S1. (a) Small-angle XRD patterns and (b) nitrogen adsorption-desorption isotherms of long-channel 10SA-SBA-15-f, 15SA-SBA-15-f and 10SA-SBA-15-r materials.

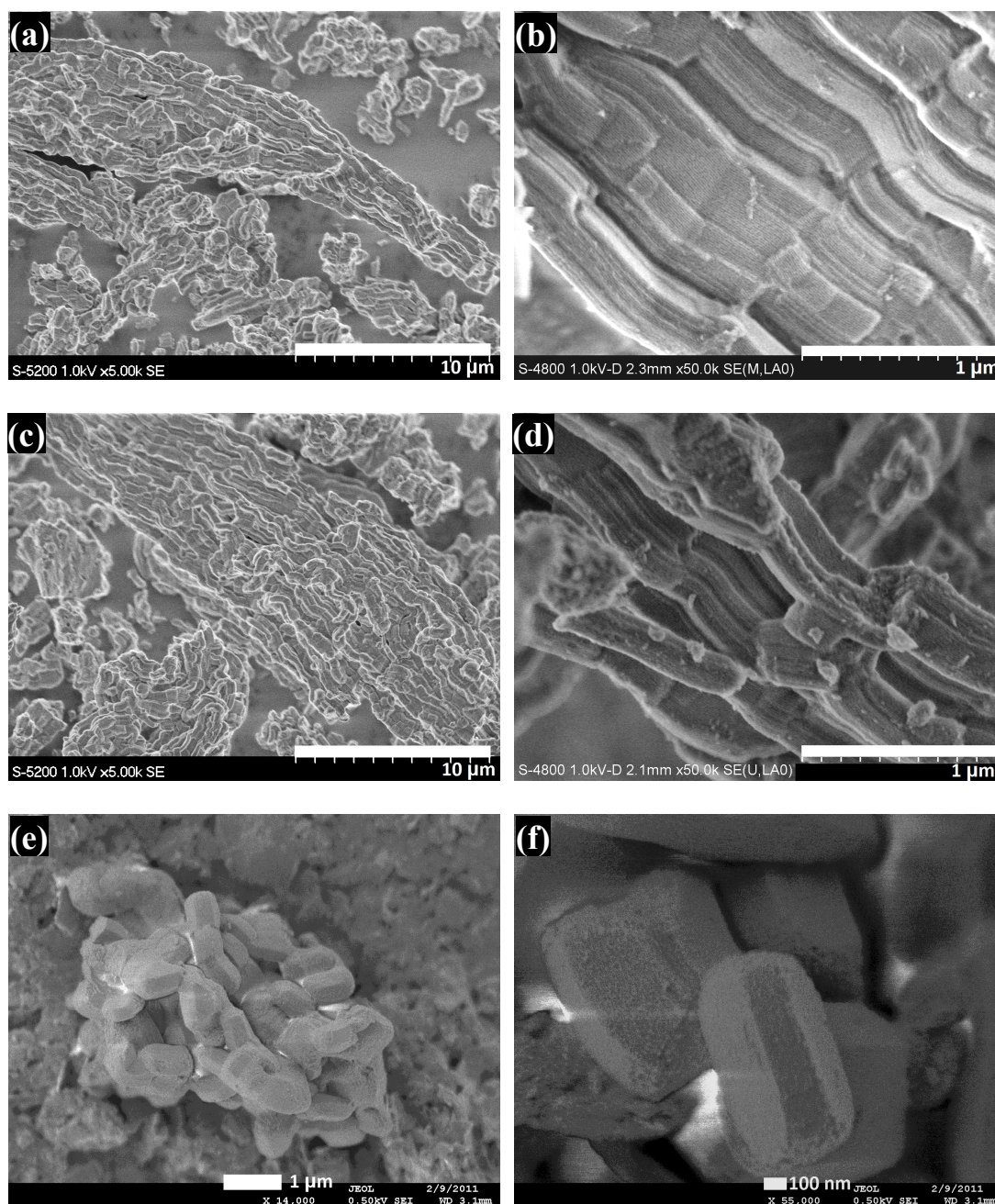


Fig. S2. SEM and HR-SEM photos of long-channel SA-SBA-15 materials: (a,b) 10SA-SBA-15-f, (c,d) 15SA-SBA-15-f and (e,f) 10SA-SBA-15-r.

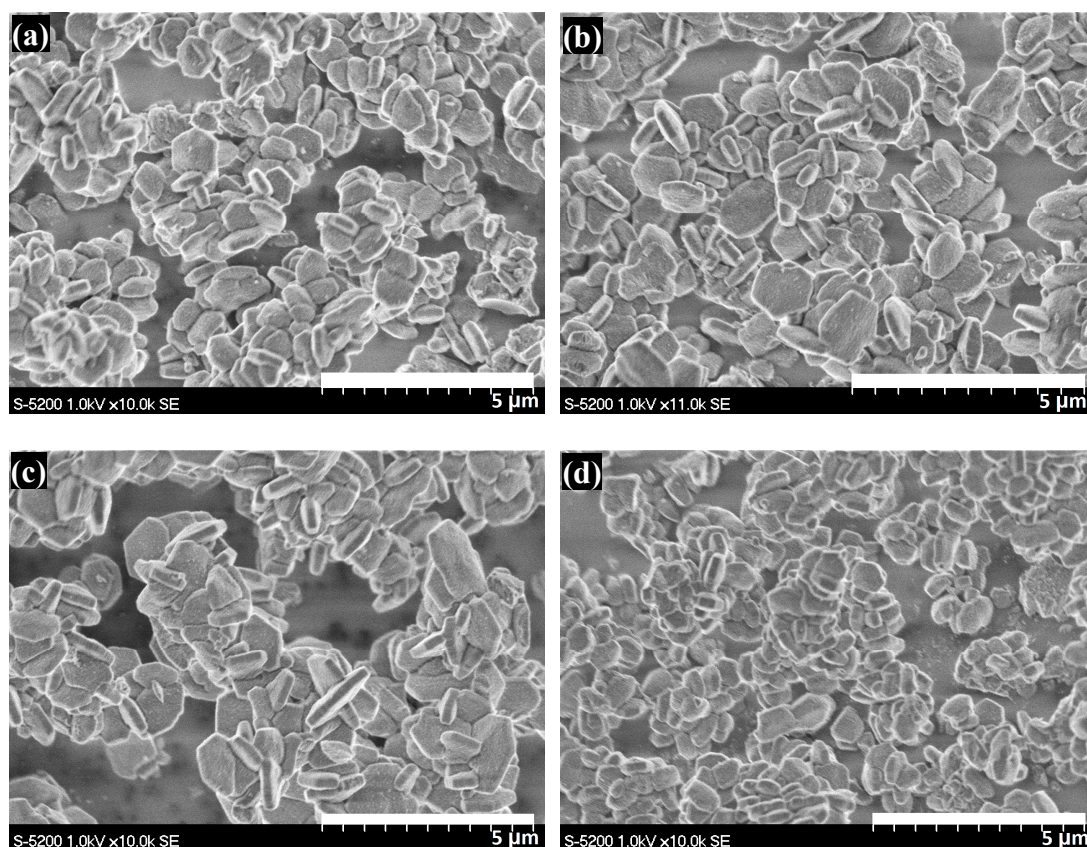


Fig. S3. SEM photos of short-channel SA-SBA-15 materials: (a) 5SA-SBA-15-p, (b) 10SA-SBA-15-p, (c) 20SA-SBA-15-p and (d) 30SA-SBA-15-p.

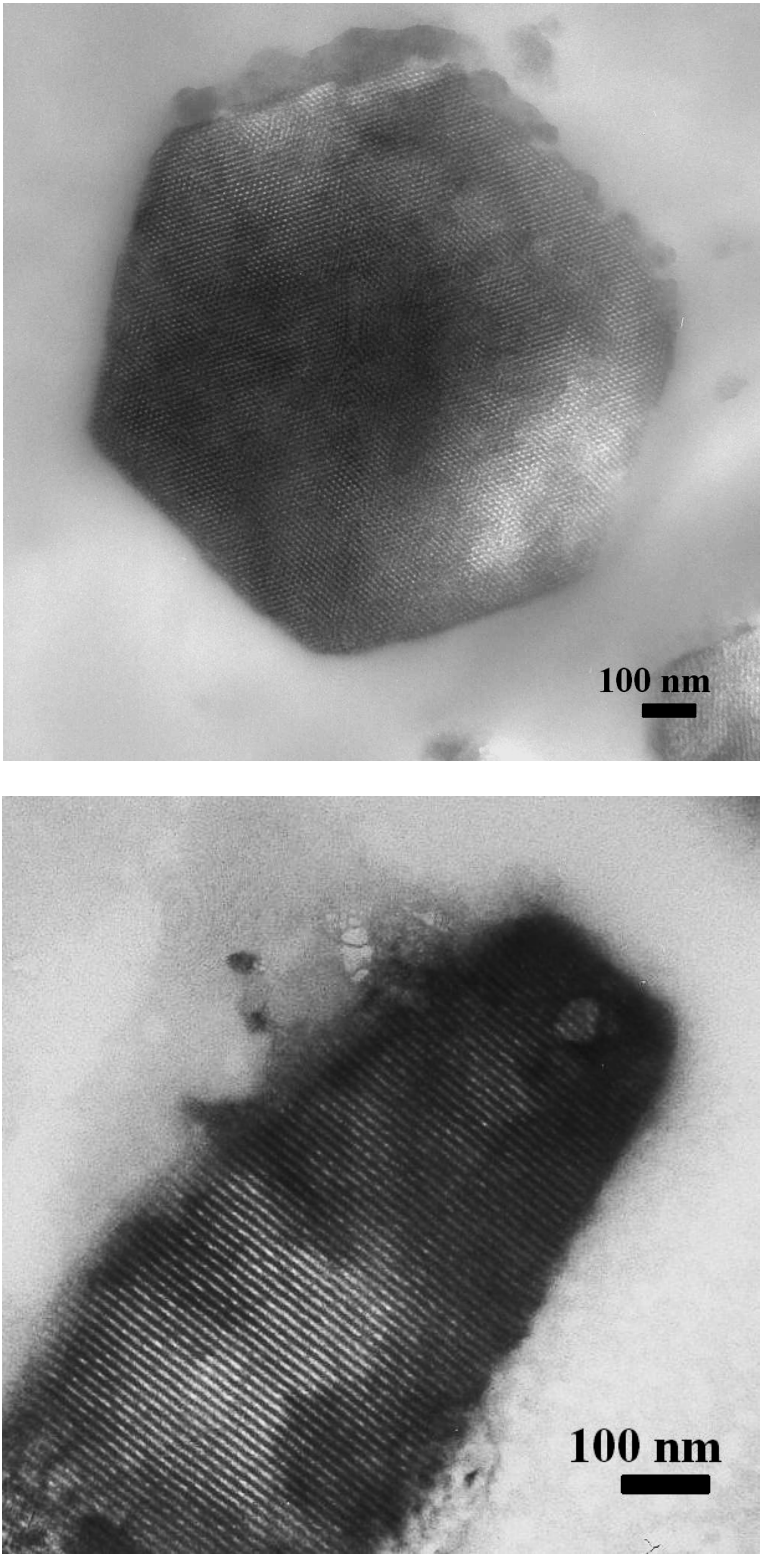


Fig. S4. TEM photos of short-channel 10SA-SBA-15-p material.

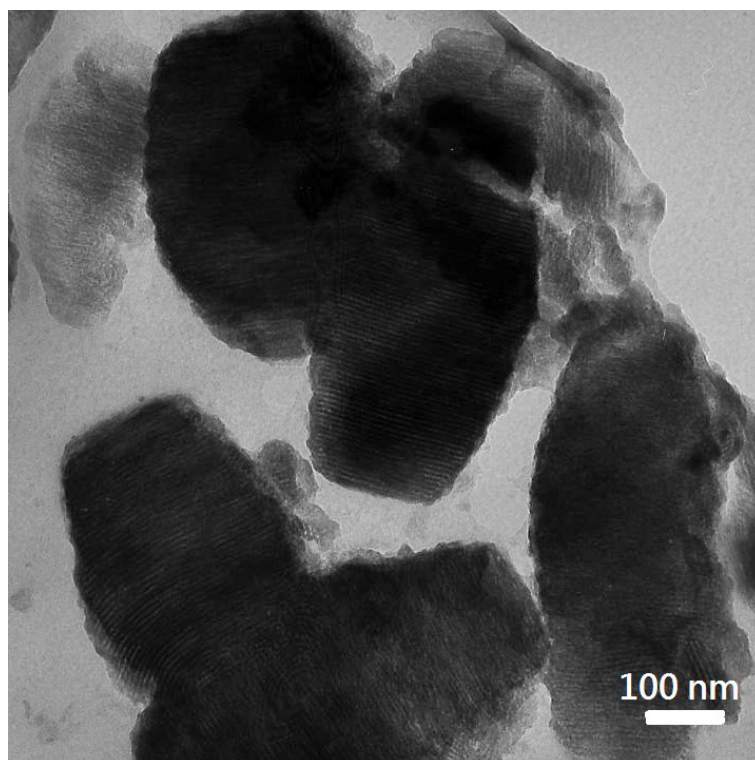
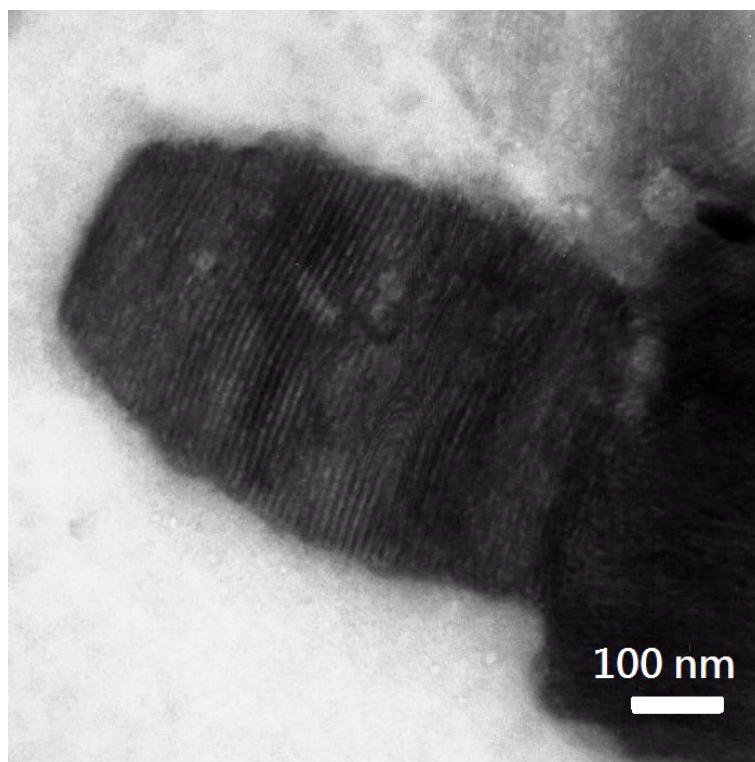


Fig. S5. TEM photos of short-channel 30SA-SBA-15-p material.

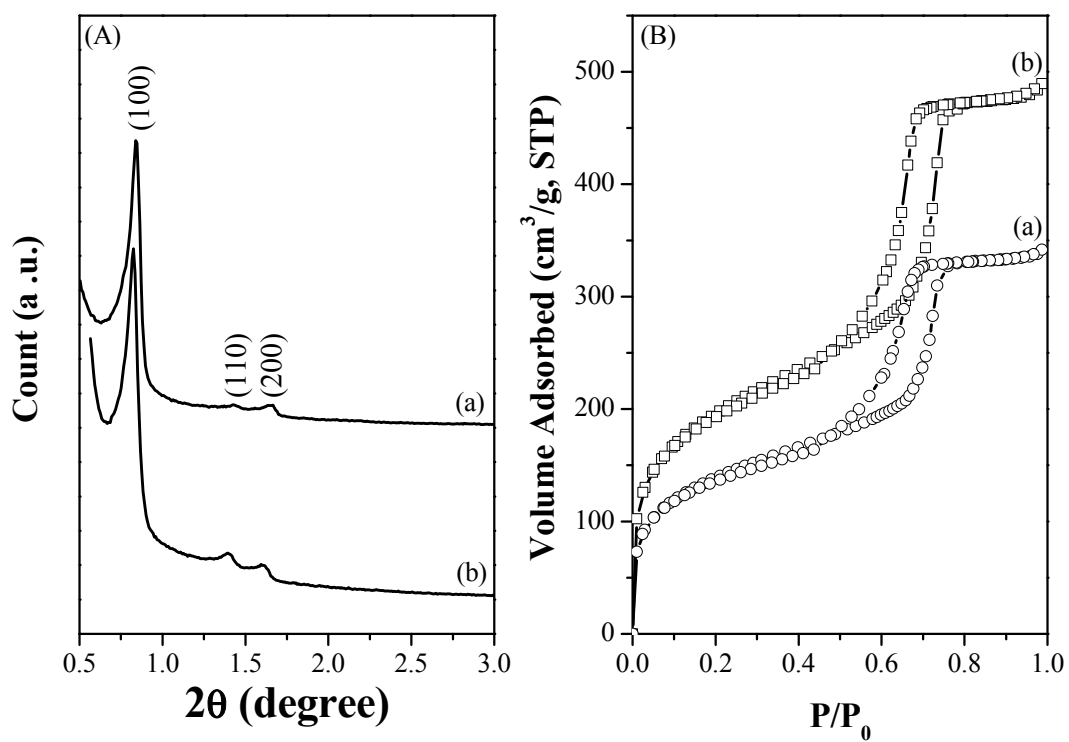


Fig. S6. (A) Small-angle XRD patterns and (B) N_2 adsorption-desorption isotherms of dual-functionalized materials (a) 5Me-15SA-SBA-15-p and (b) 10Me-15SA-SBA-15-p.

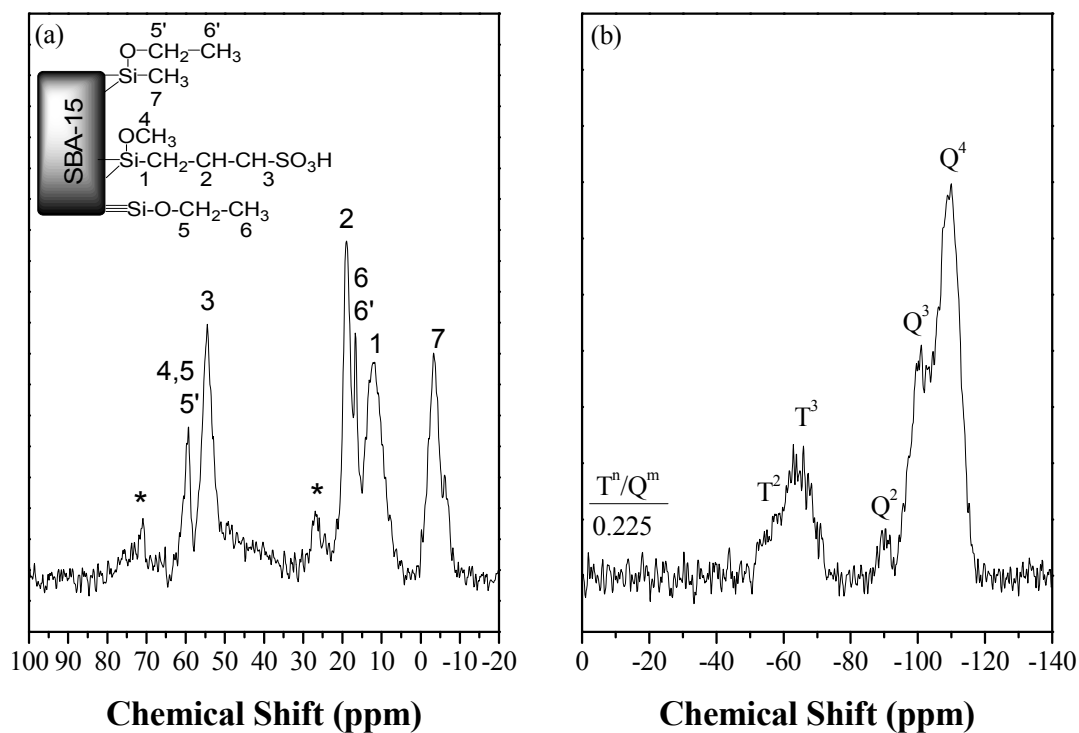


Fig. S7. Solid state (a) ^{13}C CP-MAS and (b) ^{29}Si MAS NMR spectra of dual-functionalized 10Me-15SA-SBA-15-p material after ethanol extraction. The asterisk peaks are carbons on P123 residues. The asterisk peaks are carbons on P123 residues.

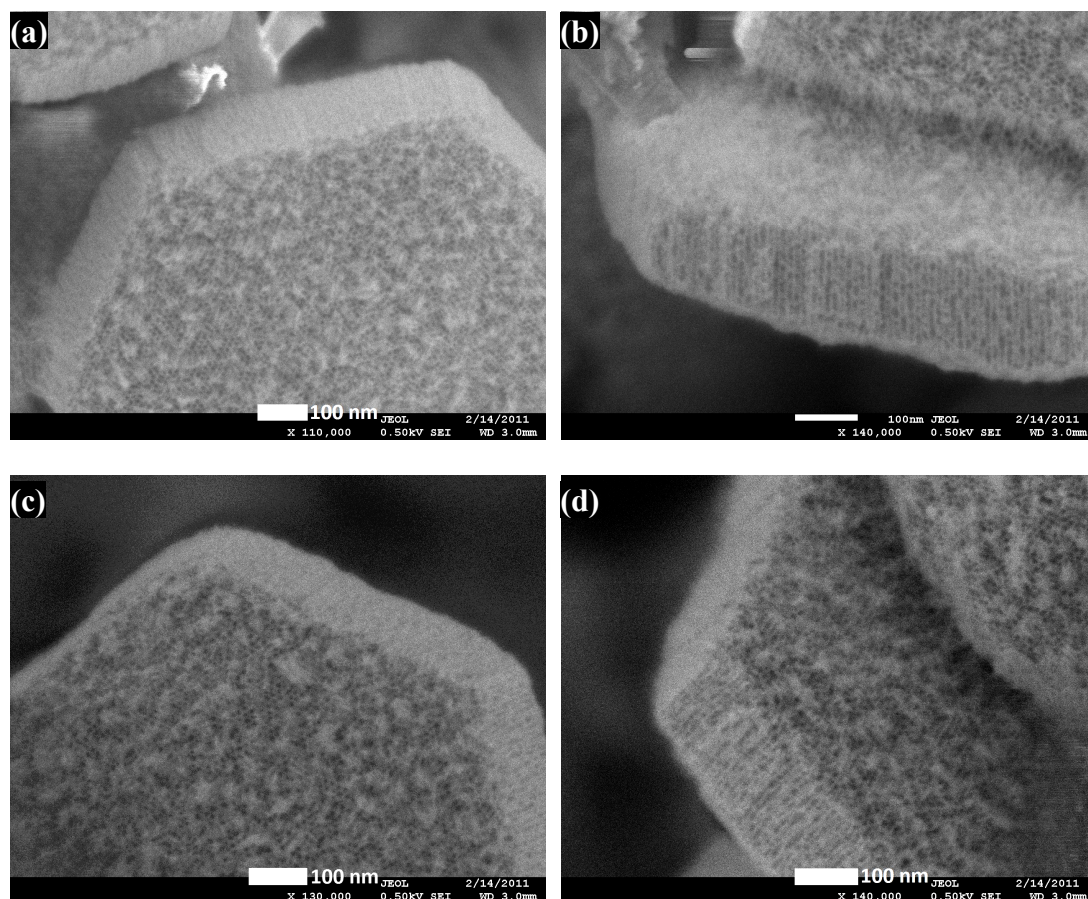


Fig. S8. HRSEM photos of dual-functionalized materials (a,b) 5Me-15SA-SBA-15-p and (c,d) 10Me-15SA-SBA-15-p.