Supporting information

Carbon-coated Porous Silicon as High Performance Li-ion Battery Anode Materials: Can the Production Process Be Cheaper and Greener?

Wenfeng Ren,[a,b] Yanhong Wang,[a,*] Zailei Zhang,[a] Qiangqiang Tan,[a] Ziyi Zhong,[c] and Fabing Su[a,*]

[a] *State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China 100190*

[b] *University of Chinese Academy of Sciences, Beijing, China 100049*

[c] *Institute of Chemical Engineering and Sciences, A*star, 1 Pesek Road, Jurong Island, Singapore 627833*

*To whom correspondence should be addressed. E-mail address: wangyanhong@ipe.ac.cn (Y. Wang); fbsu@ipe.ac.cn (F. Su), Tel.: +86-10-82544850, Fax: +86-10-82544851.

Table S1. The synthesis conditions used for preparing the Si/C materials.

Entry	Samples	Si:Cu-based catalyst	Catalysts	ROH	Time (h)	Yield (%)
1	P-Si-0	1:0	-	C_2H_5OH	12	100
2	P-Si-1	1:3	$Cu(Ac)_2$	C_2H_5OH	12	35
3	P-Si-2	1:3	CuCl	C_2H_5OH	12	33
4	P-Si-3	1:3	$CuCl_2$	C_2H_5OH	12	32
5	P-Si-4	1:3	Cu_2O	C_2H_5OH	12	34
6	P-Si-5	1:3	CuO	C_2H_5OH	12	38
7	P-Si-6	1:3	CuCl	C_2H_5OH	4	69
8	P-Si-7	1:3	CuCl	C_2H_5OH	8	61
9	P-Si-8	1:3	CuCl	C_2H_5OH	16	25
10	P-Si-9	1:1	CuCl	C_2H_5OH	12	50
11	P-Si-10	1:2	CuCl	C_2H_5OH	12	44
12	P-Si-11	1:3	$Cu(Ac)_2$	CH_3OH	12	38

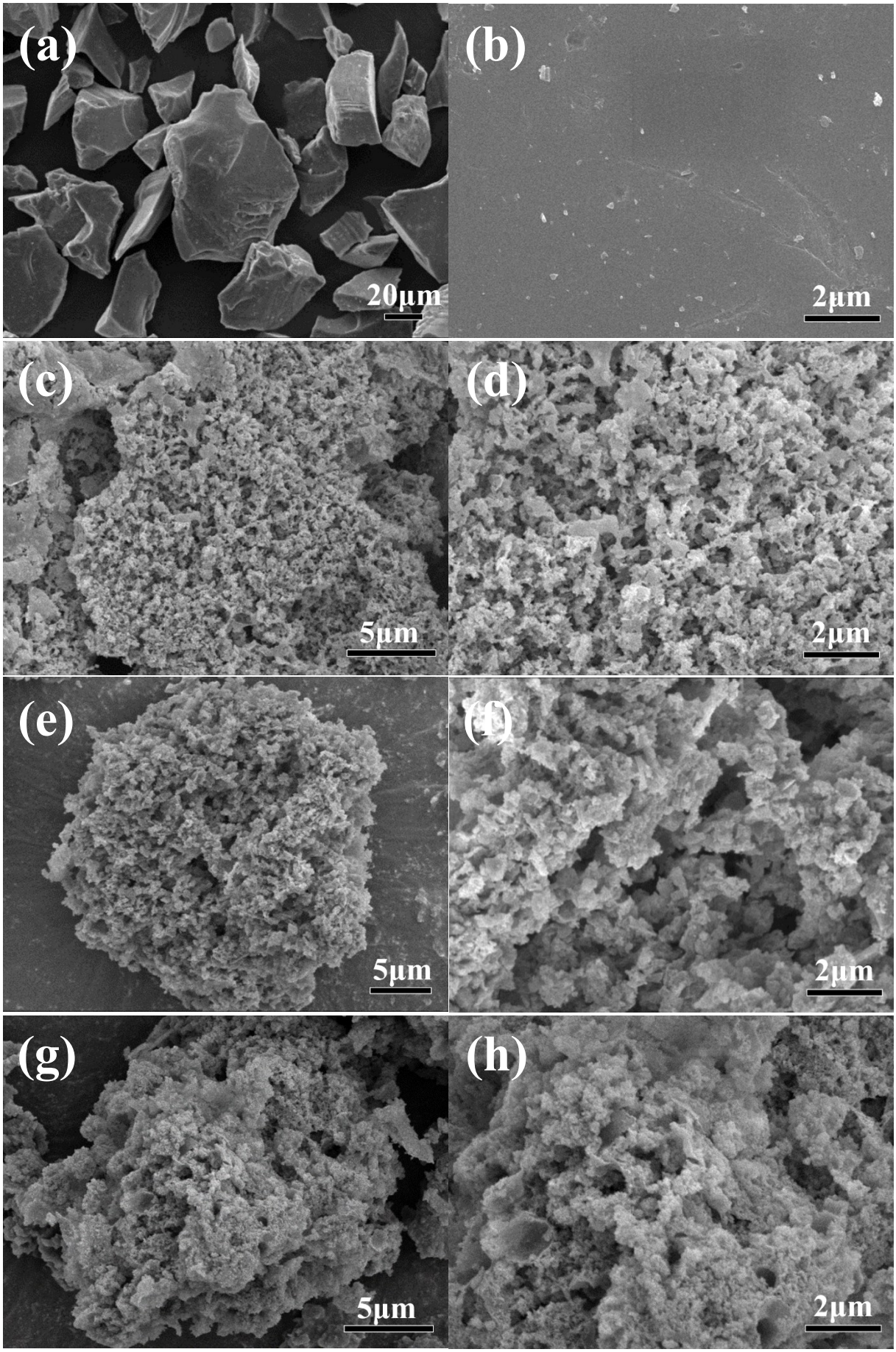

Fig. S1. SEM images of P-Si-0 (a and b), P-Si-3 (c and d), P-Si-4 (e and f), and P-Si-5 (g and h).

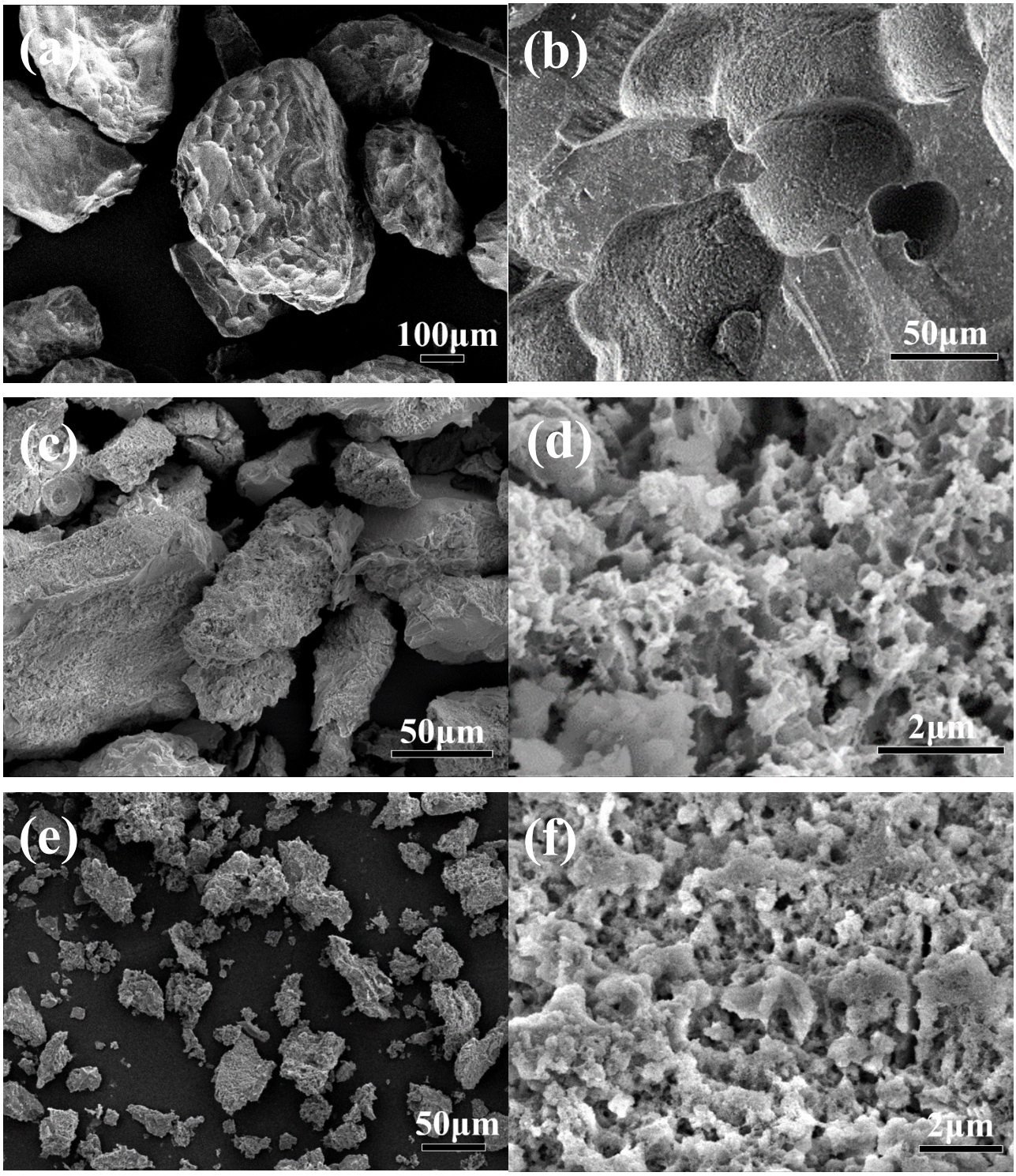

Fig. S2. SEM images of P-Si-6 (a and b), P-Si-7 (c and d), and P-Si-8 (e and f).

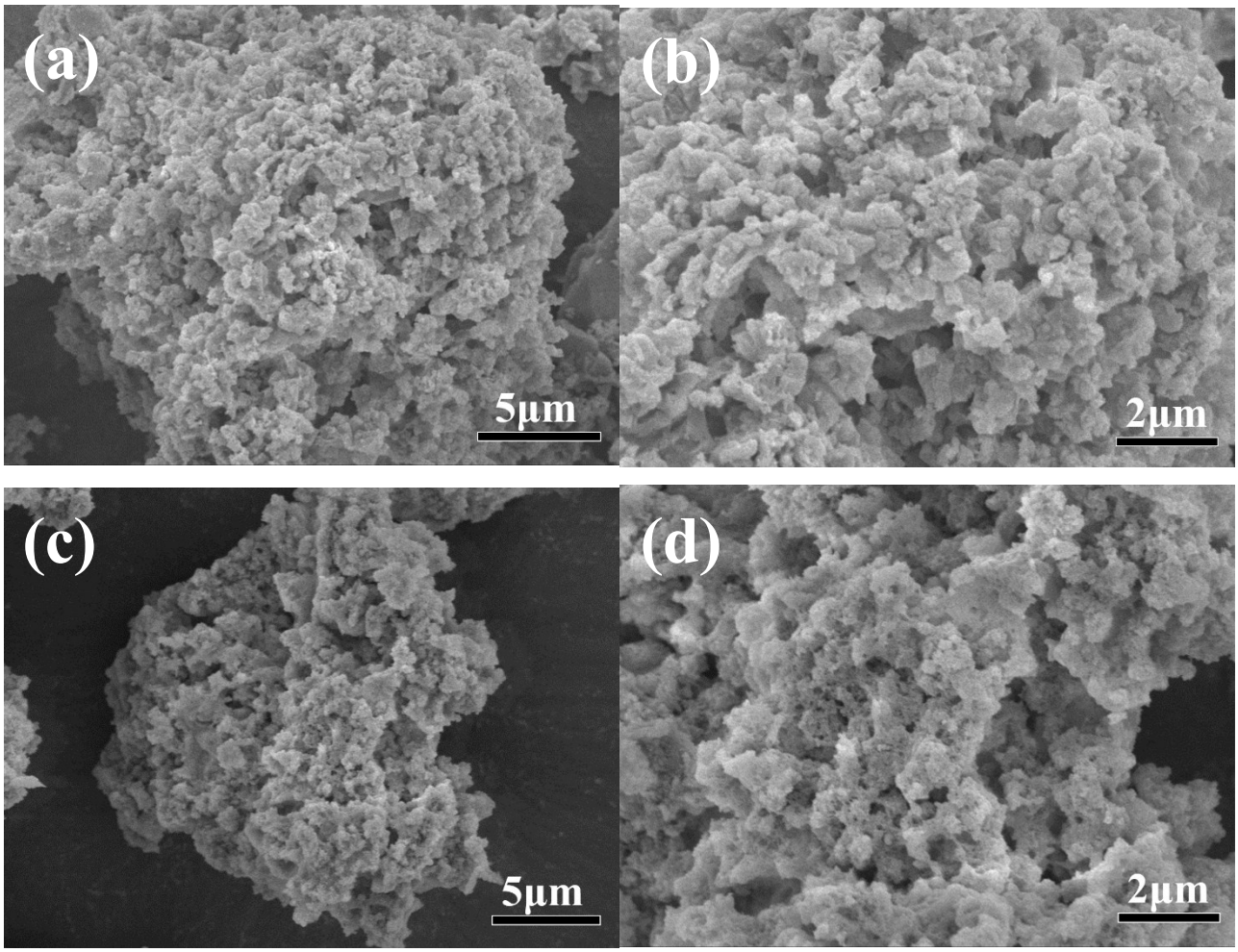

Fig. S3. SEM images of P-Si-9 (a and b) and P-Si-10 (c and d).

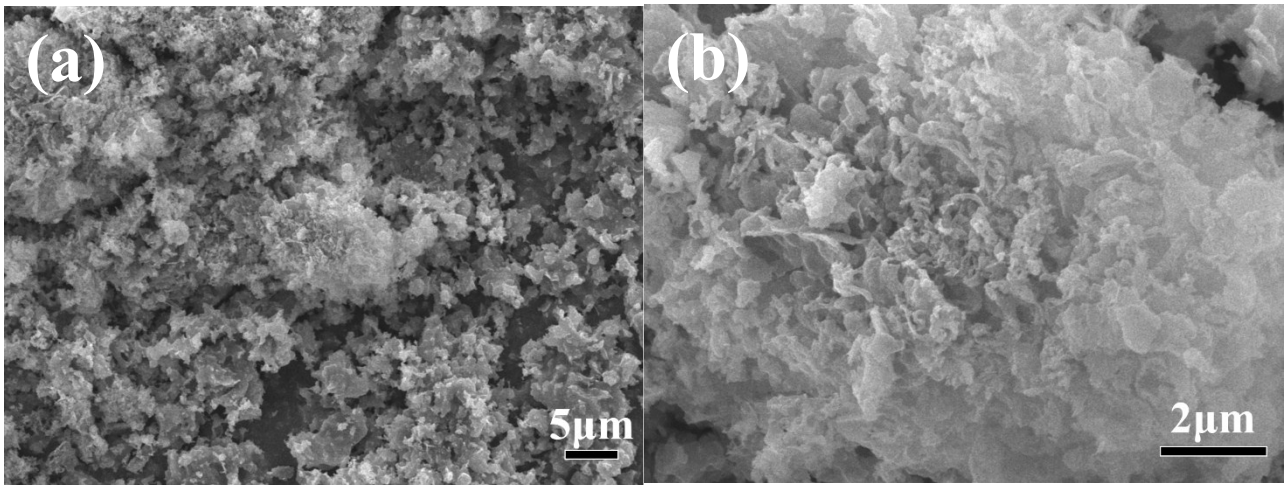

Fig. S4. SEM images of P-Si-11 (a and b).

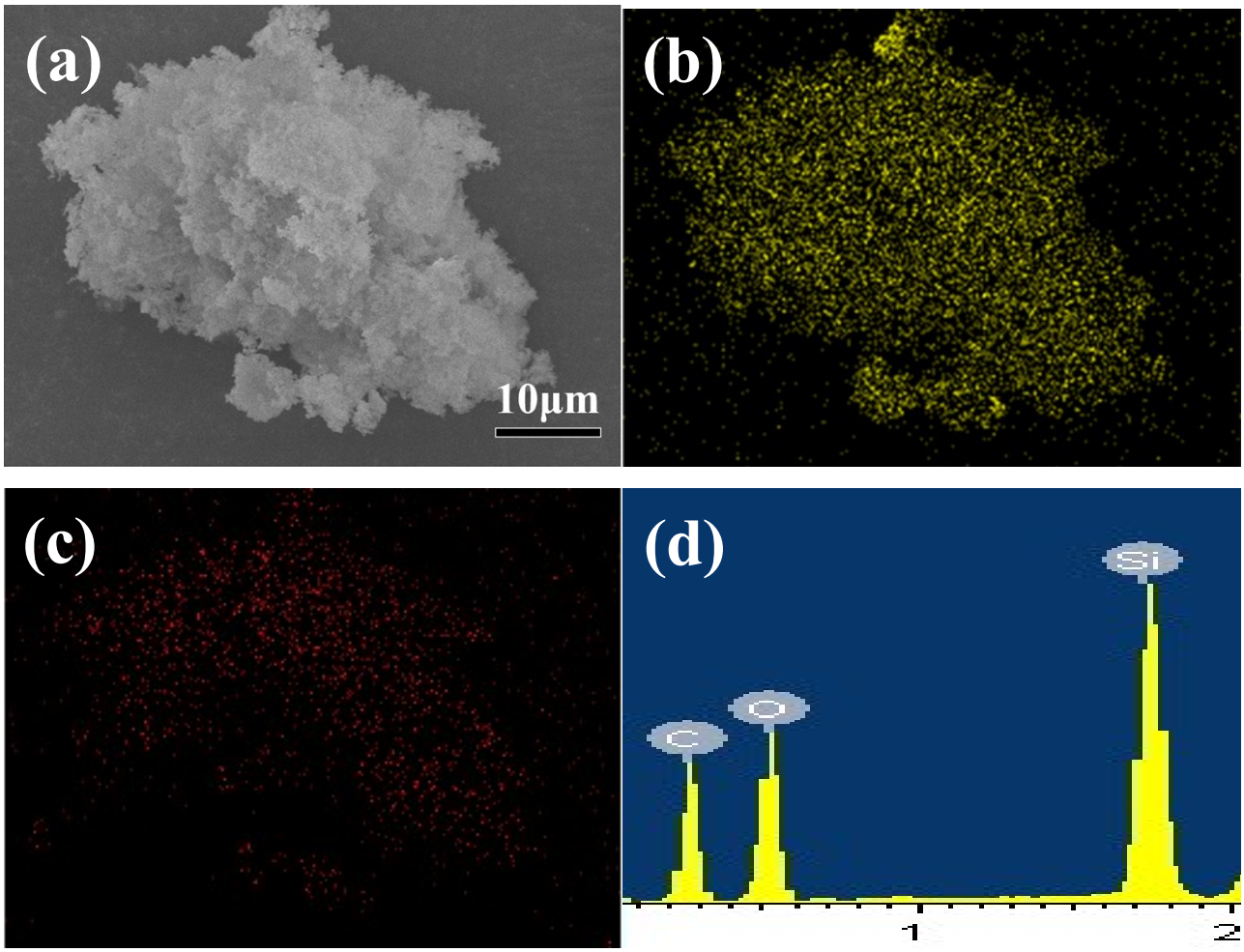

Fig. S5. SEM image (a), corresponding elemental mapping images Si (b) and C (c), EDX spectrum (d) of P-Si/C-1.

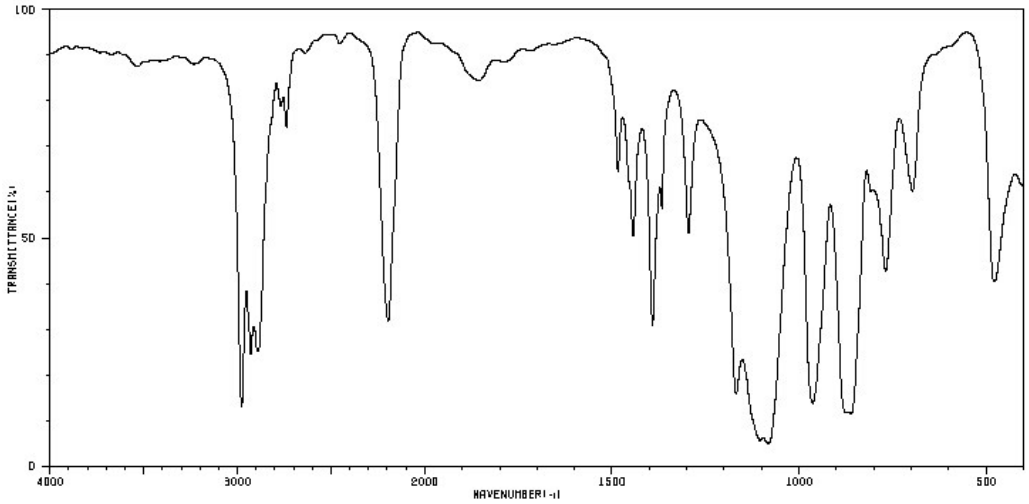

Fig. S6. The standard FTIR spectra of alkoxysilane from the Coblentz Society.

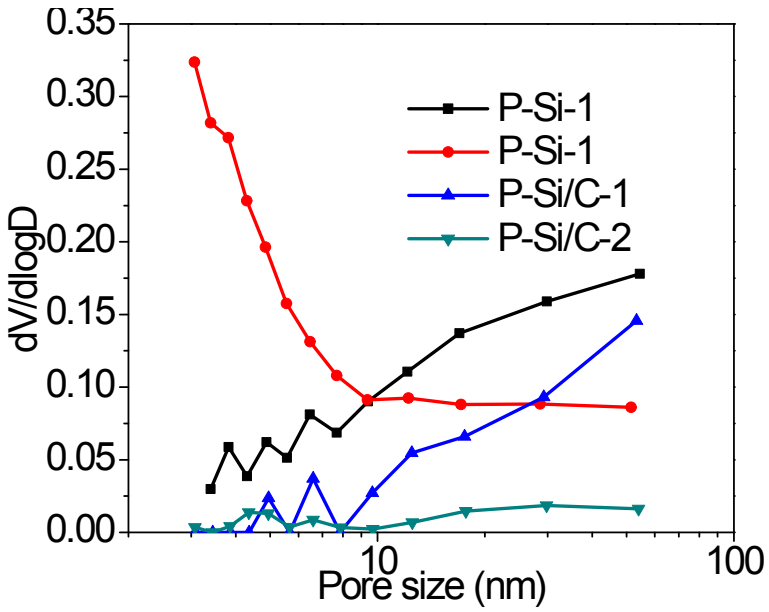

Fig. S7. The pore size distributions of P-Si-1, P-Si-2, P-Si/C-1, and P-Si/C-2.