

Hybrid Nanoporous Polystyrene Derived from Cubic Octavinylsilsesquioxane and Commercial Polystyrene *via* the Friedel-Crafts Reaction

Yue Wu,^{a,b} Liguang Li,^b Wenyan Yang,^b Shengyu Feng^b and Hongzhi Liu^{*a,c}

^a Key Laboratory of Special Functional Aggregated Materials, Ministry of Education, School of Chemistry and Chemical Engineering, Shandong University, Jinan 250100, P. R. China

Fax: (+86) 531 88564464; E-mail: liuhongzhi@sdu.edu.cn

^b Key Laboratory of Fine Chemicals in Universities of Shandong
Shandong Provincial Key Laboratory of Fine Chemicals, Qilu University of Technology, Jinan 250353, P. R. China

^cKey Laboratory of Specially Functional Polymeric Materials and Related Technology, Ministry of Education, East China University of Science and Technology, Shanghai, 200237.

S1 Elemental analysis results

Figure S2 FT-IR of HCP-1

Figure S3 FT-IR of HCP-2

Figure S4 FT-IR of HCP-5

Figure S5 FT-IR of HCP-6

Figure S6 FT-IR of HCP-7

Figure S7 FE-SEM image of HCP-3

Figure S8 FE-SEM image of HCP-4

Figure S9 FE-SEM image of HCP-4

Figure S10 FE-SEM image of HCP-5

Figure S11 FE-SEM image of HCP-5

Figure S12 FE-SEM image of HCP-6

Figure S13 FE-SEM image of HCP-6

Figure S14 FE-SEM image of HCP-7

Figure S15 FE-SEM image of HCP-7

Figure S16 FE-SEM image of HCP-8

Figure S17 FE-SEM image of HCP-8

Figure S18 FE-SEM image of HCP-9

Figure S19 FE-SEM image of HCP-9

S1 Elemental analysis results:

HCP-1 Elemental analysis calc. (wt%) for $C_{1232}H_{1240}Si_8O_{12}$: C 89.88, H 7.59;

Found C 91.44 H 7.84

HCP-2 Elemental analysis calc. (wt%) for $C_{624}H_{632}Si_8O_{12}$: C 87.67, H 7.45

Found C 90.24 H 8.13

HCP-3 Elemental analysis calc. (wt%) for $C_{502}H_{510}Si_8O_{12}$: C 86.83, H 7.39;

Found C 81.25 H 6.82

HCP-4 Elemental analysis calc. (wt%) for $C_{259}H_{267}Si_8O_{12}$: C 81.94, H 7.09;

Found C 76.60 H 6.59.

HCP-5 Elemental analysis calc. (wt%) for $C_{178}H_{186}Si_8O_{12}$: C 77.97, H 6.84;

Found C 73.66, H 6.08

HCP-6 Elemental analysis calc. (wt%) for $C_{137}H_{145}Si_8O_{12}$: C 74.51, H 6.62;

Found C 66.17, H 5.92

HCP-7 Elemental analysis calc. (wt%) for $C_{97}H_{105}Si_8O_{12}$: C 69.04, H 6.27;

Found C,66.84 H. 5.99

HCP-8 Elemental analysis calc. (wt%) for $C_{76}H_{84}Si_8O_{12}$: C 64.55, H 5.99;

Found C 62.56 , H. 5.76

HCP-9 Elemental analysis calc. (wt%) for $C_{64}H_{72}Si_8O_{12}$: C 61.11, H 5.77;

Found C 60.36, H 5.68.

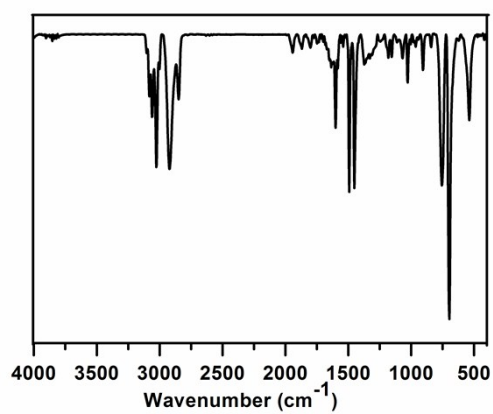


Figure S2 FT-IR of HCP-1

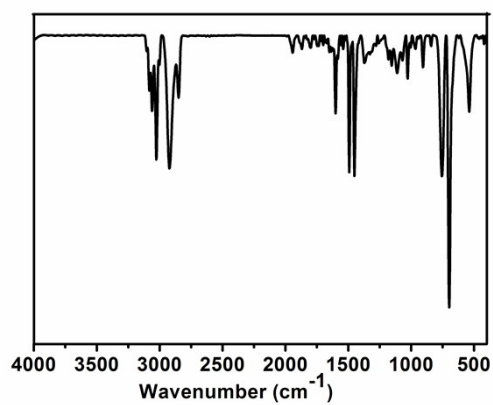


Figure S3 FT-IR of HCP-2

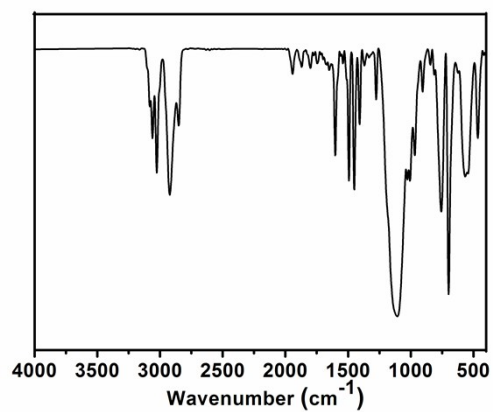


Figure S4 FT-IR of HCP-5

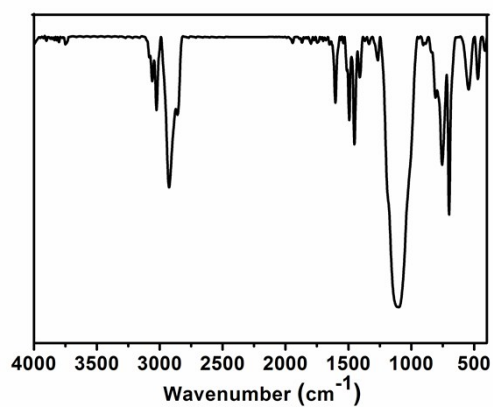


Figure S5 FT-IR of HCP-6

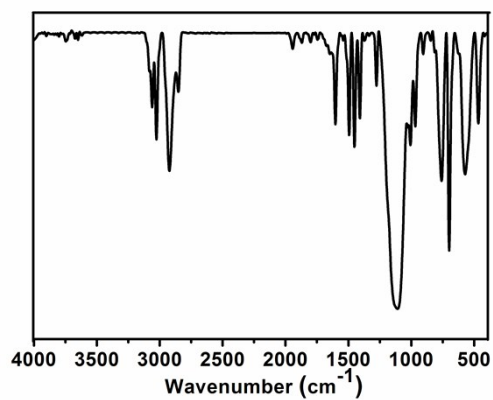


Figure S6 FT-IR of HCP-7

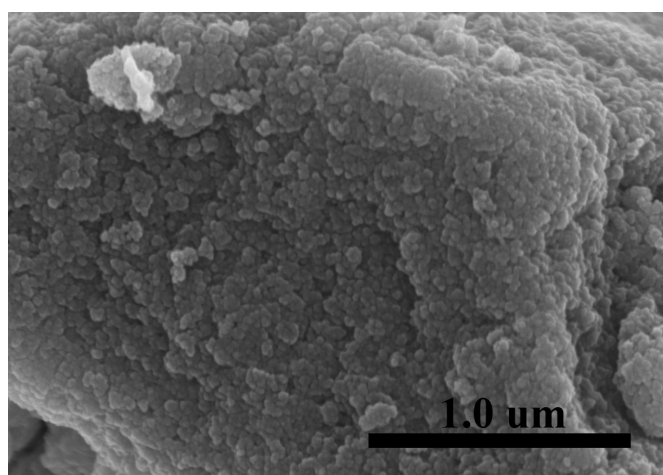


Figure S7 FE-SEM image of HCP-3

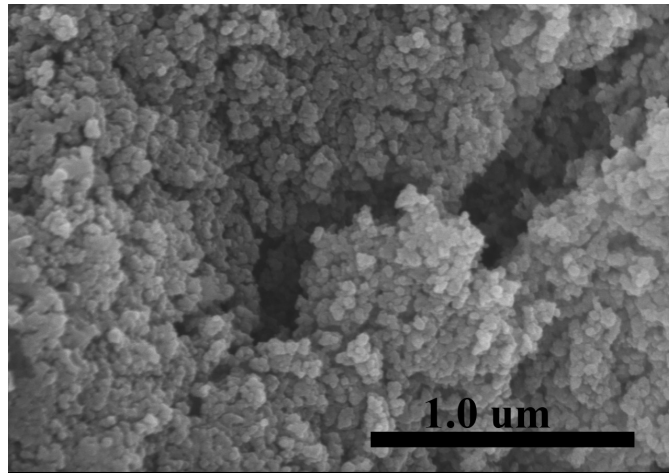


Figure S8 FE-SEM image of HCP-4

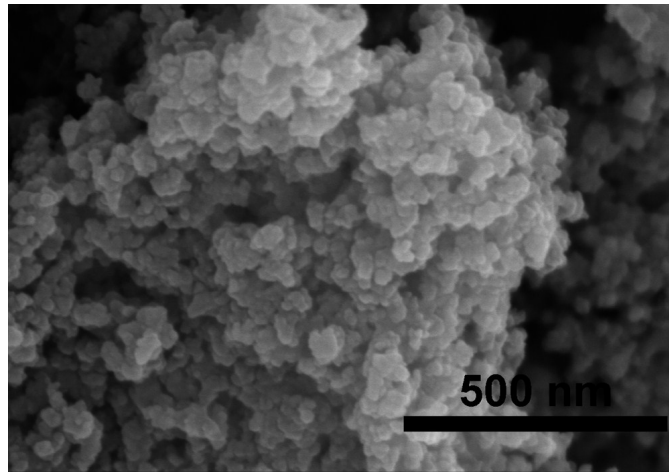


Figure S9 FE-SEM image of HCP-4

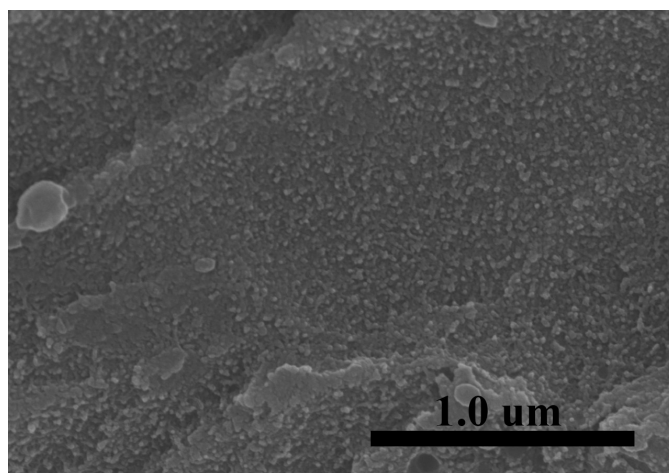


Figure S10 FE-SEM image of HCP-5

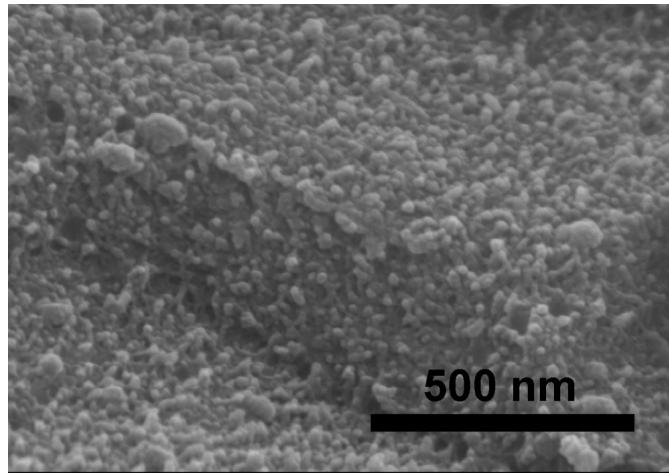


Figure S11 FE-SEM image of HCP-5

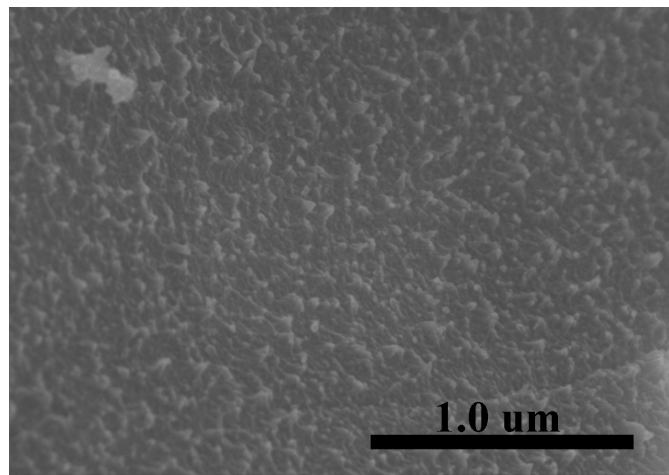


Figure S12 FE-SEM image of HCP-6

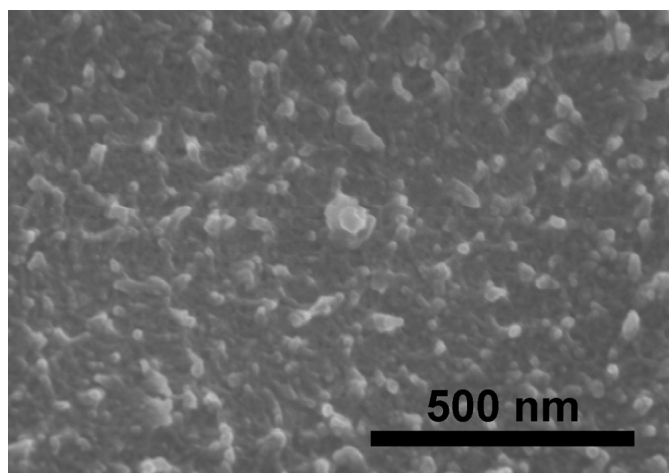


Figure S13 FE-SEM image of HCP-6

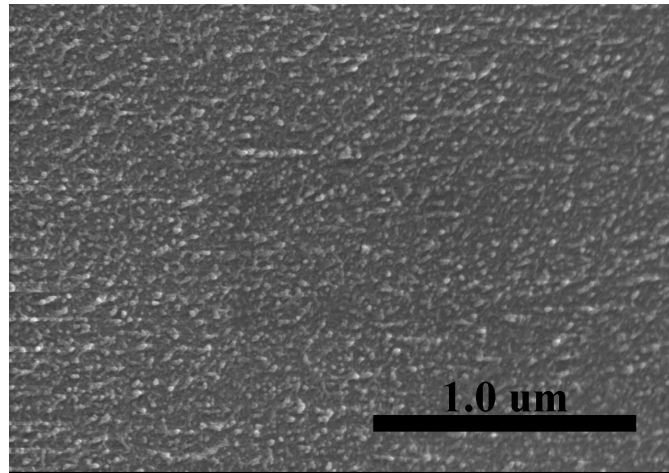


Figure S14 FE-SEM image of HCP-7

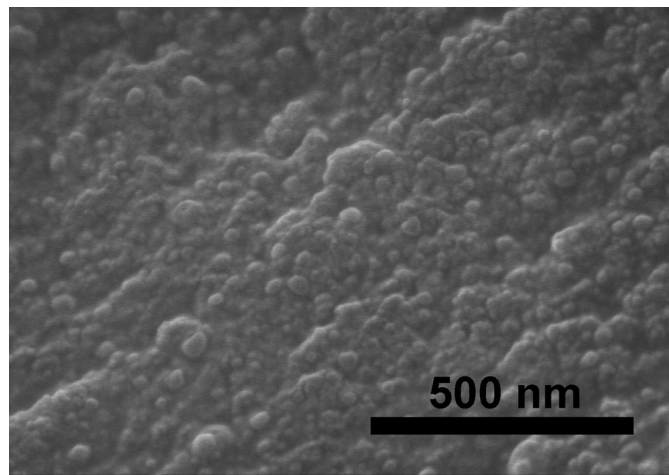


Figure S15 FE-SEM image of HCP-7

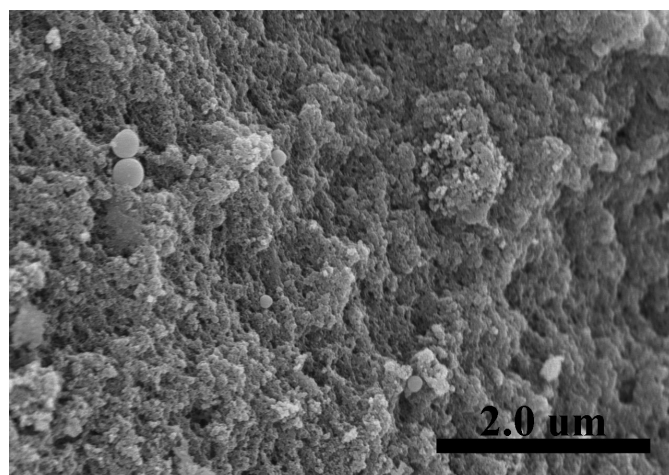


Figure S16 FE-SEM image of HCP-8

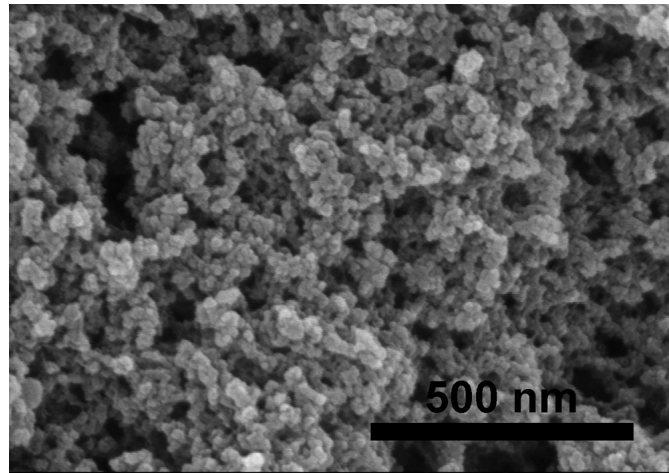


Figure S17 FE-SEM image of HCP-8

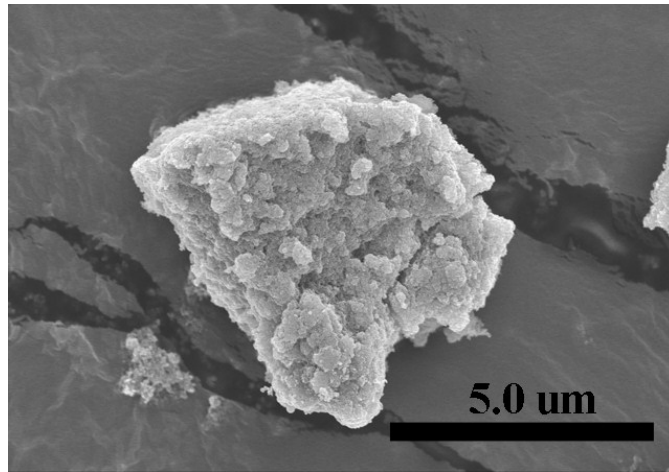


Figure S18 FE-SEM image of HCP-9

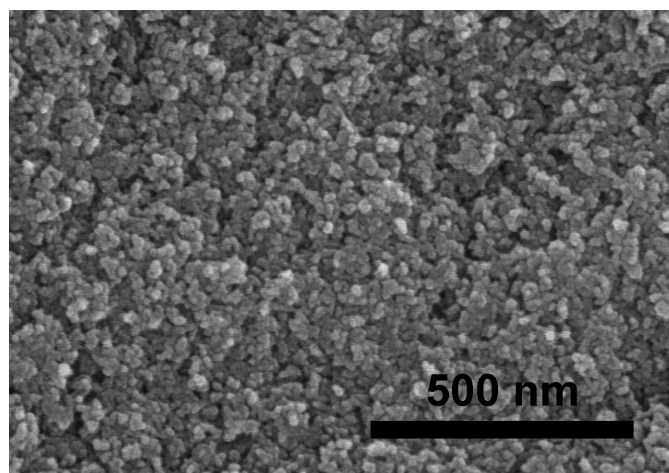


Figure S19 FE-SEM image of HCP-9