

Supporting online Materials for

**Oxygen-doped porous silicon carbide sphere as electrode material for  
supercapacitors**

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1. N<sub>2</sub> adsorption-desorption isotherm and Pore-size distribution of MMPSiC

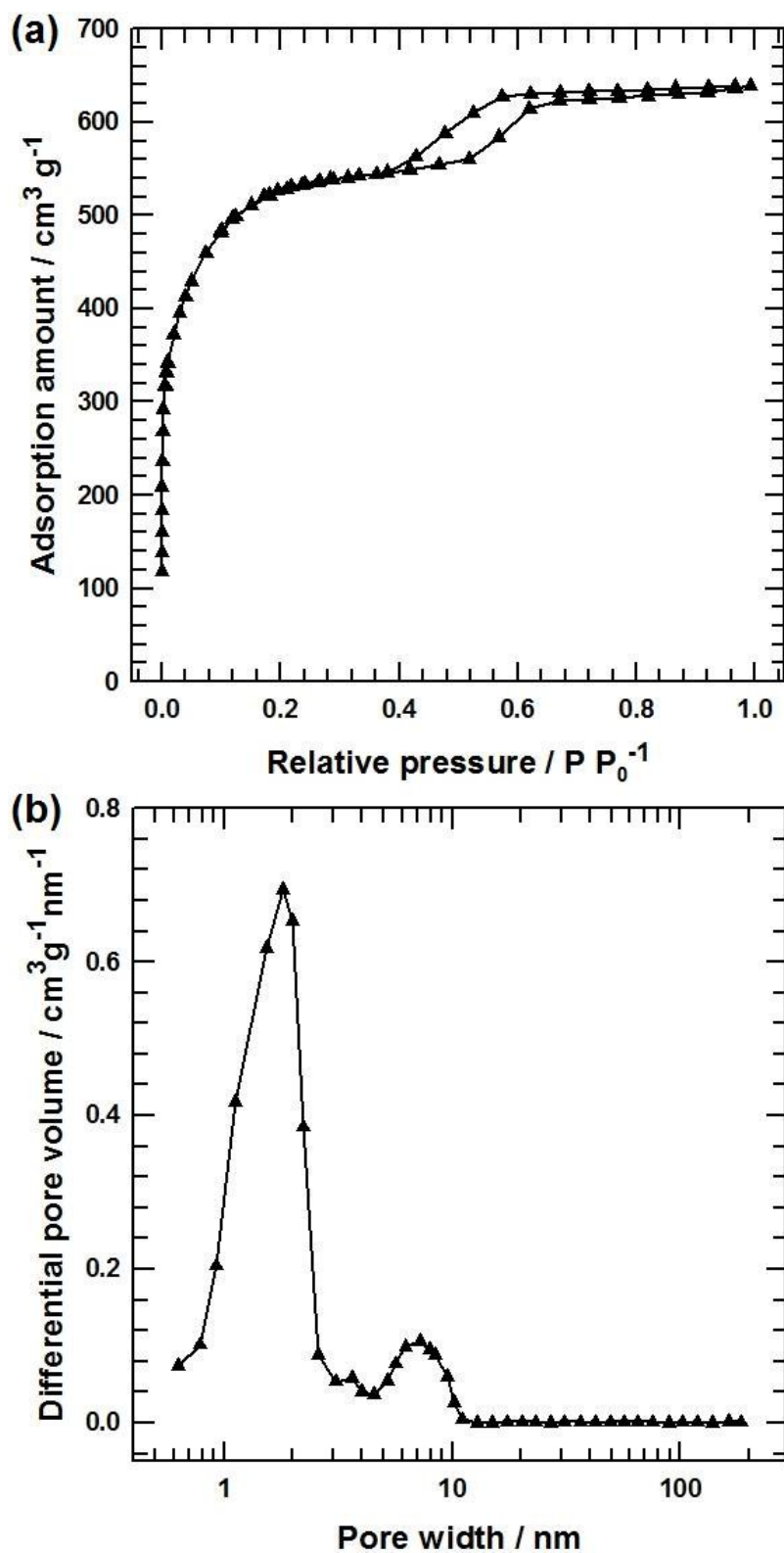
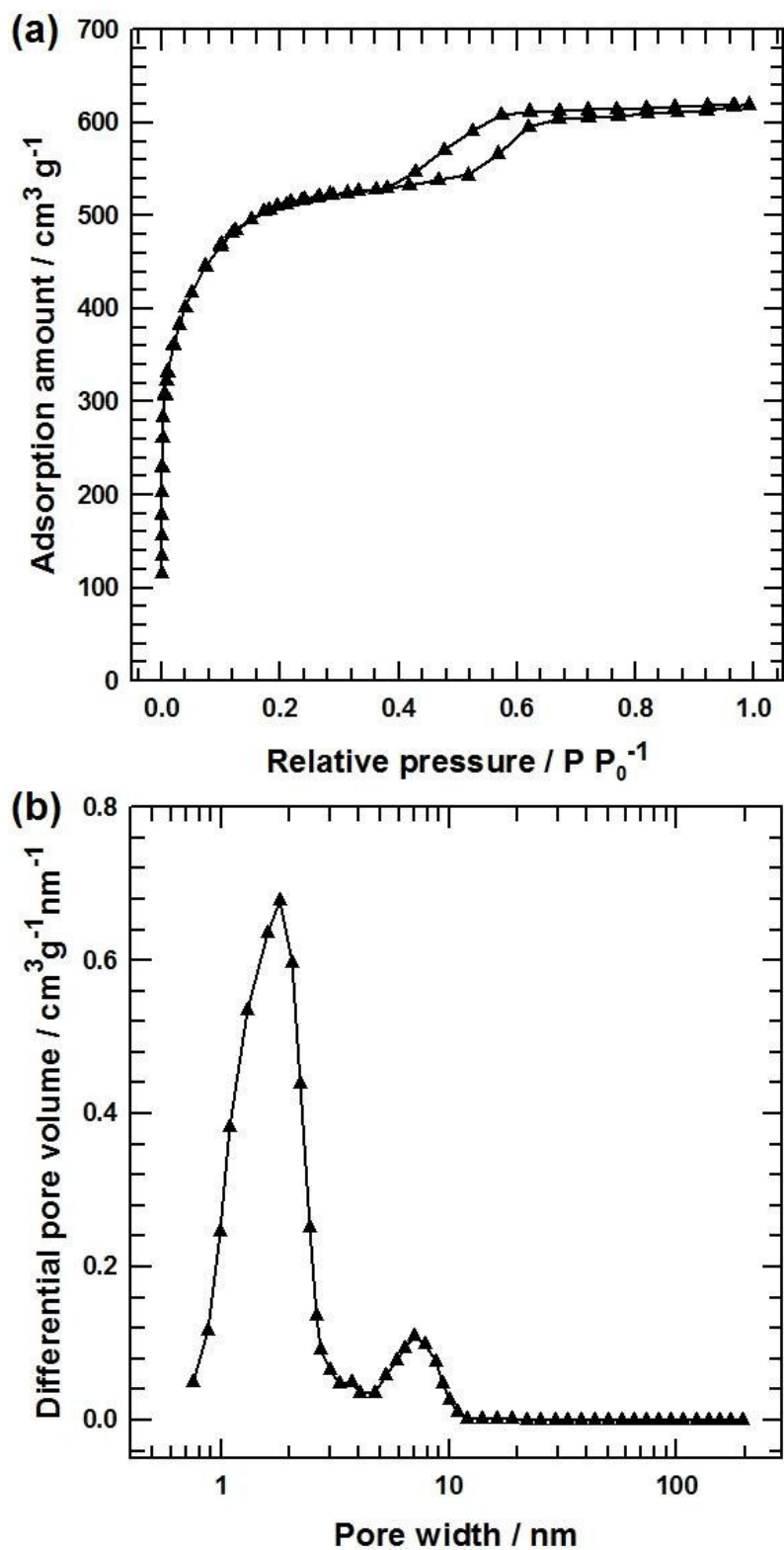


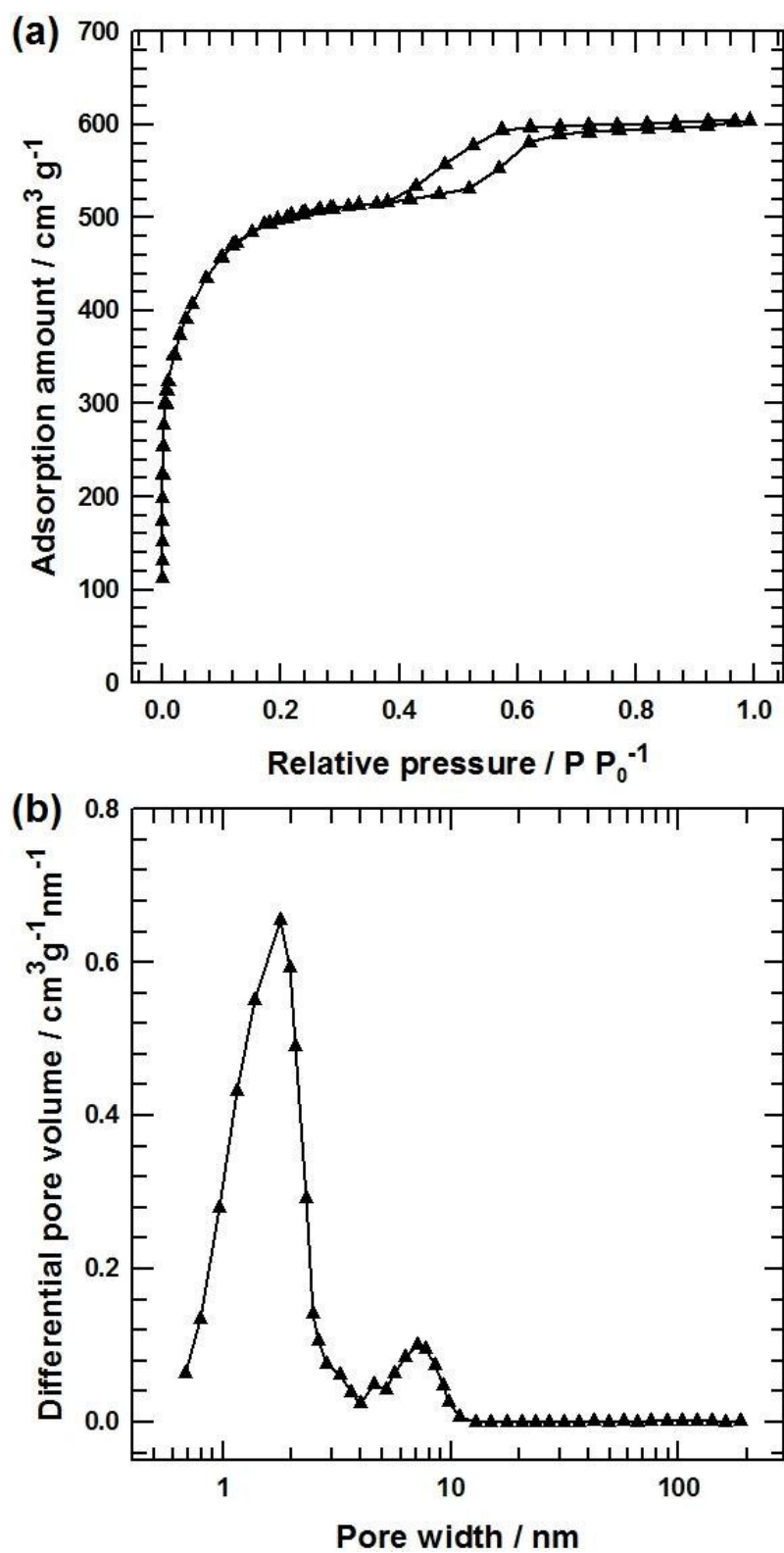
Figure S1. (a) Nitrogen adsorption-desorption isotherm of MMPSiC. (b) Pore-size distribution of MMPSiC.

2. N<sub>2</sub> adsorption-desorption isotherm and Pore-size distribution of OMMPSiC-20h



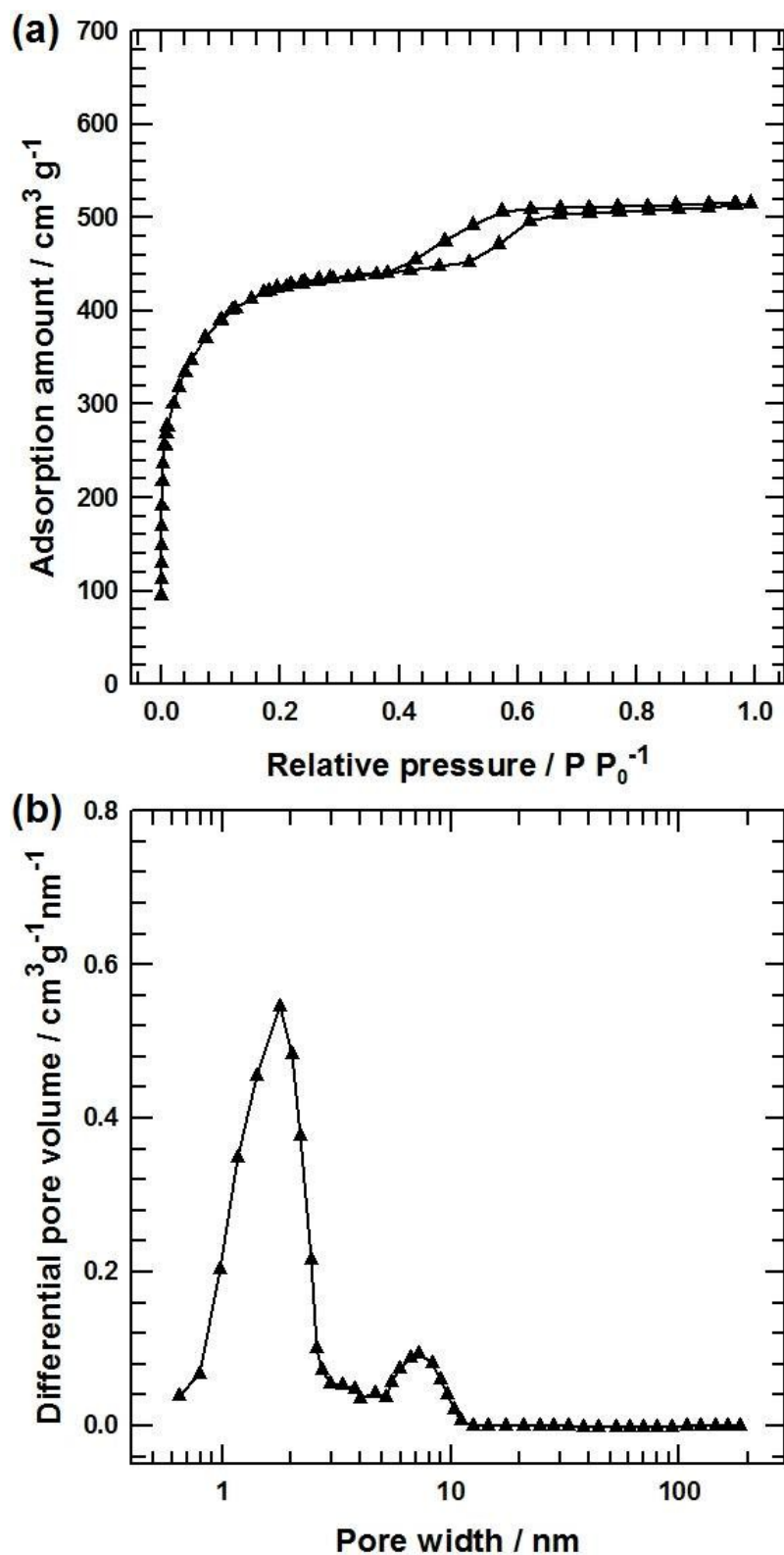
**Figure S2.** (a) Nitrogen adsorption-desorption isotherm of OMMPSiC-20h. (b) Pore-size distribution of OMMPSiC-20h.

### 3. N<sub>2</sub> adsorption-desorption isotherm and Pore-size distribution of OMMPSiC-24h



**Figure S3.** (a) Nitrogen adsorption-desorption isotherm of OMMPSiC-24h. (b) Pore-size distribution of OMMPSiC-24h.

4. N<sub>2</sub> adsorption-desorption isotherm and Pore-size distribution of OMMPSiC-28h



**Figure S4.** (a) Nitrogen adsorption-desorption isotherm of OMMPSiC-28h. (b) Pore-size distribution of OMMPSiC-28h.

5. N<sub>2</sub> adsorption-desorption isotherm and Pore-size distribution of OMMPSiC-32h

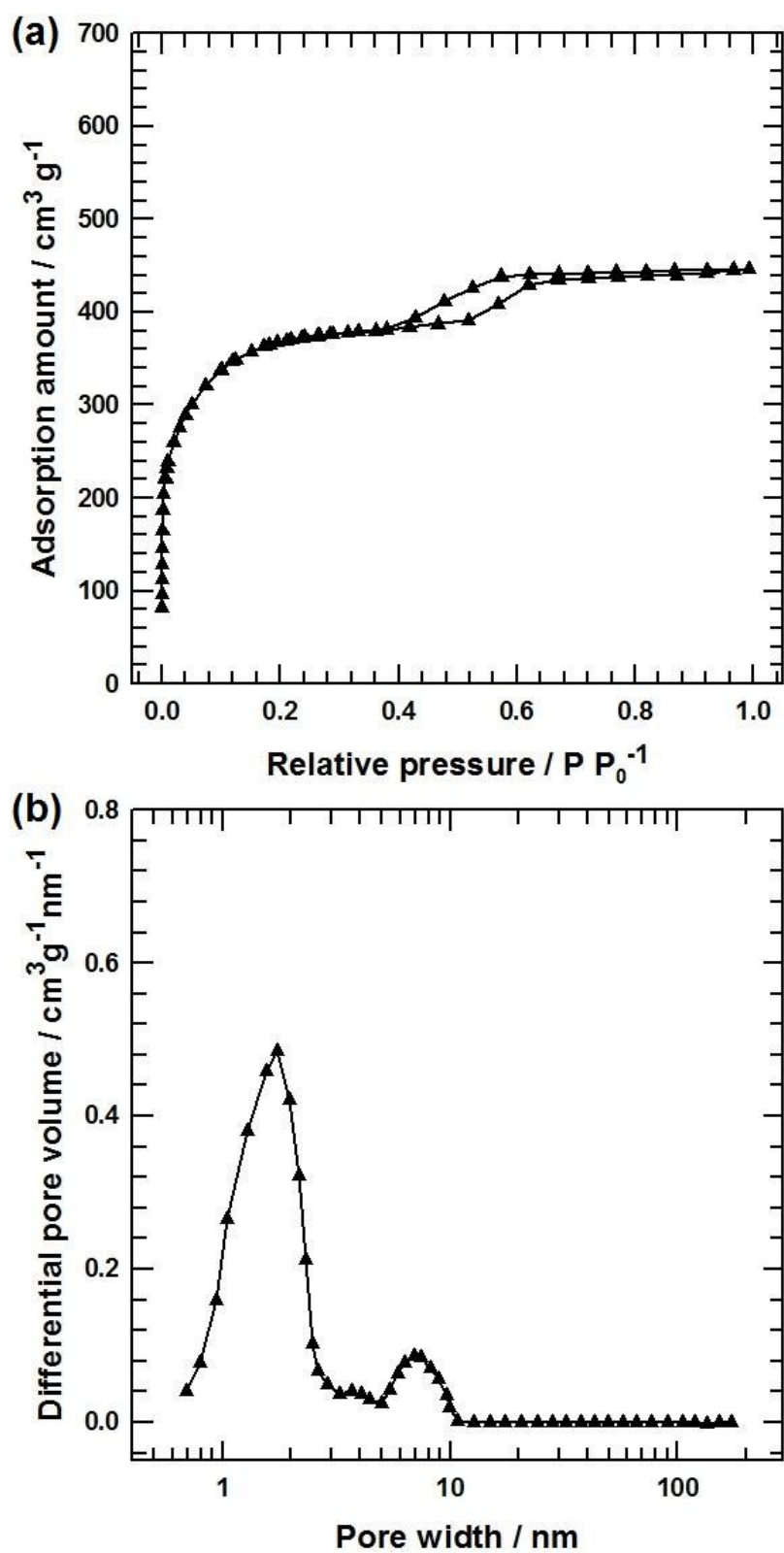


Figure S5. (a) Nitrogen adsorption-desorption isotherm of OMMPSiC-32h. (b) Pore-size distribution

of OMMPSiC-32h.

**Table S1.** The Si 2p peak position and the relative atomic percentages of various peaks in MMPSiC and OMMPSiC-*H*

|             | Fitting of the Si 2p peak Binding energy [eV]<br>(relative atomic percentage [%]) |                   |                                 |                    |                  |
|-------------|---|-------------------|---------------------------------|--------------------|------------------|
|             | Si-C  | SiOC <sub>3</sub> | SiO <sub>2</sub> C <sub>2</sub> | SiO <sub>3</sub> C | SiO <sub>2</sub> |
| MMPSiC      | 99.5<br>(70.88)   | 100.42<br>(14.45) | 101.3<br>(8.45)                 | 102.2<br>(6.22)    | -                |
| OMMPSiC-20h | 99.5<br>(68.69)   | 100.43<br>(14.31) | 101.29<br>(8.40)                | 102.2<br>(6.16)    | 102.92<br>(2.44) |
| OMMPSiC-24h | 99.49<br>(67.81)  | 100.44<br>(14.54) | 101.3<br>(8.54)                 | 102.22<br>(6.22)   | 102.92<br>(2.89) |
| OMMPSiC-28h | 99.49<br>(65.75)  | 100.42<br>(15.10) | 101.3<br>(9.36)                 | 102.21<br>(6.53)   | 102.92<br>(3.27) |
| OMMPSiC-32h | 99.5<br>(64.36)   | 100.42<br>(15.74) | 101.32<br>(9.78)                | 102.22<br>(6.48)   | 102.92<br>(3.64) |

**Table S2.** The C 1s peak position and the relative atomic percentages of various peaks in MMPSiC and OMMPSiC-*H*

|             | Fitting of the C 1s peak Binding energy [eV]<br>(relative atomic percentage [%]) |                                 |                   |                   |
|-------------|--|---------------------------------|-------------------|-------------------|
|             | Si-C   | SiO <sub>x</sub> C <sub>y</sub> | C-C               | C-OH/C-O-C        |
| MMPSiC      | 282.7<br>(60.87)   | 283.68<br>(24.69)               | 284.6<br>(14.43)  | -                 |
| OMMPSiC-20h | 282.71<br>(54.96)  | 283.71<br>(22.86)               | 284.62<br>(13.03) | 285.73<br>(9.15)  |
| OMMPSiC-24h | 282.71<br>(51.62)  | 283.72<br>(22.06)               | 284.61<br>(12.24) | 285.73<br>(14.08) |
| OMMPSiC-28h | 282.7<br>(45.92)   | 283.71<br>(21.38)               | 284.59<br>(10.89) | 285.73<br>(21.81) |
| OMMPSiC-32h | 282.7<br>(42.91)   | 283.72<br>(21.06)               | 284.6<br>(10.17)  | 285.73<br>(25.86) |



**Table S3.** Pore characteristics of MMPSiC and OMMPSiC-*H*

|             | $S_{\text{BET}}$<br>[m <sup>2</sup> g <sup>-1</sup> ] | $S_{\text{micro}}$<br>[m <sup>2</sup> g <sup>-1</sup> ] | $S_{\text{meso}}$<br>[m <sup>2</sup> g <sup>-1</sup> ] | $V_{\text{tot}}$<br>[cm <sup>3</sup> g <sup>-1</sup> ] | $V_{\text{micro}}$<br>[cm <sup>3</sup> g <sup>-1</sup> ] | $V_{\text{meso}}$<br>[cm <sup>3</sup> g <sup>-1</sup> ] |
|-------------|---|---|--|--|--|---|
| MMPSiC      | 1713  | 1372  | 341  | 1.233  | 0.618  | 0.615   |
| OMMPSiC-20h | 1672  | 1346  | 326  | 1.19   | 0.603  | 0.587   |
| OMMPSiC-24h | 1625  | 1309  | 316  | 1.148  | 0.581  | 0.567   |
| OMMPSiC-28h | 1407  | 1102  | 305  | 1.031  | 0.485  | 0.546   |
| OMMPSiC-32h | 1274  | 983   | 291  | 0.948  | 0.429  | 0.519   |