

Hierarchical porous carbon with ordered straight micro-channels templated by continuous filament glass fiber array for high performance supercapacitors

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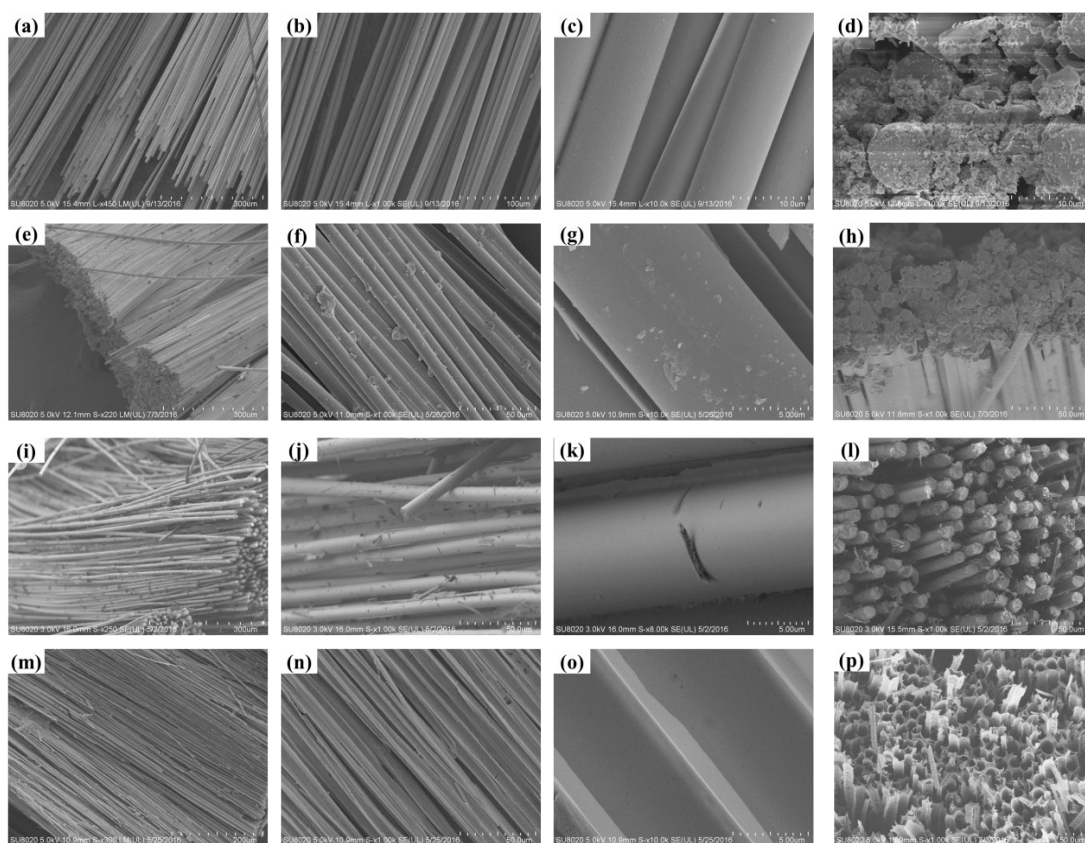


Figure S1 SEM images of continuous filament glass fibers (a-d); glucose filled bundled glass fiber array hybrid (e-h); carbon filled bundled glass fiber array (i-l); GTSDC of etched away glass fiber array (m-p).

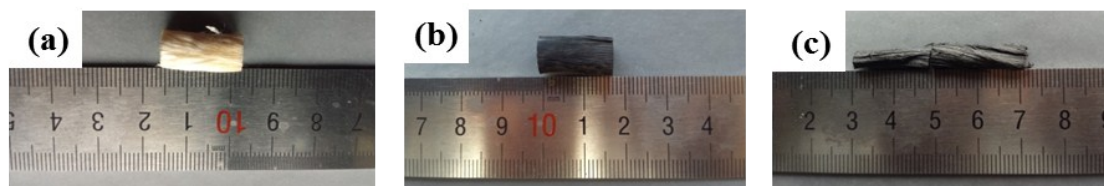


Figure S2 The photographic images of glucose filled glass fiber array (a); carbon filled glass fiber array (b); GTSDC of etching away glass fiber array (c).

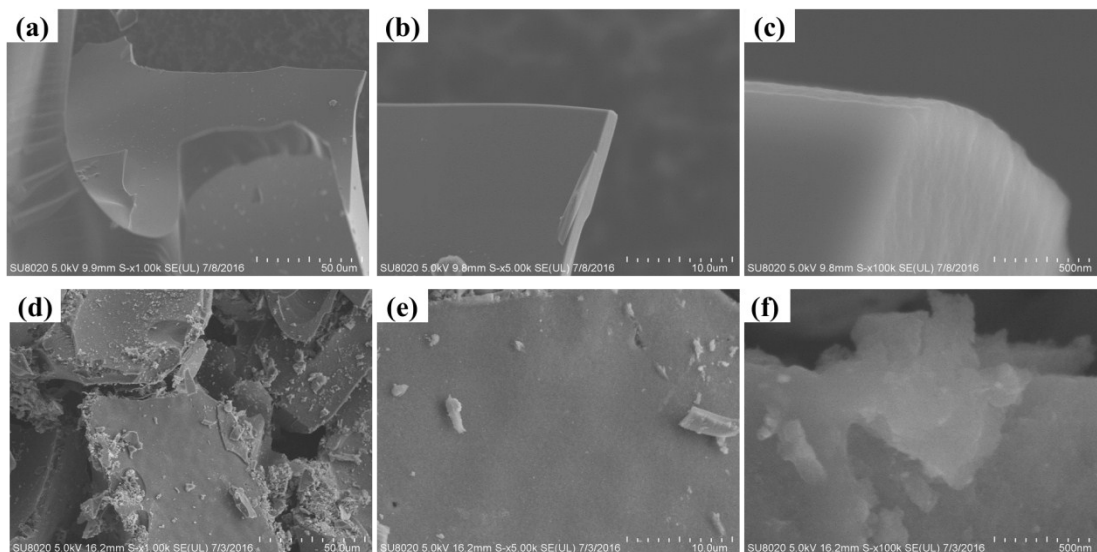


Figure S3 SEM images of glucose directly carbonized at 800 °C (GDC) (a-c); GDC activated by KOH at 900 °C (GDC-900) (d-f).

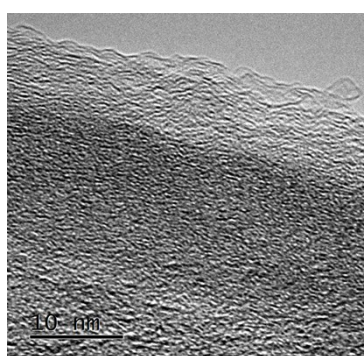


Figure S4 HRTEM image of GTSDC without KOH activation

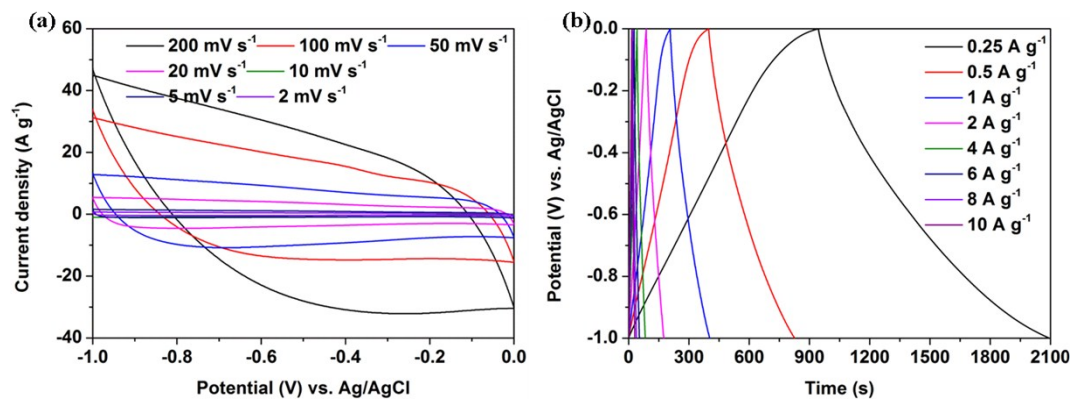


Figure S5 CV curves of GDTS-900 at different scan rates (a) and galvanostatic charge/discharge curves under different current density (b).

Table S1 Specific capacitance as a function of the scan rates (mV s^{-1}).

| Scan rate \ Sample | 2 | 5 | 10 | 20 | 50 | 100 | 200 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| GDC | 33.2 | 31 | 26.7 | 21.7 | 14.4 | 10 | 6.4 |
| GDC-900 | 133.5 | 128 | 122.4 | 118.8 | 56 | 50.8 | 47.5 |
| GTSDC | 66.9 | 62.7 | 57.5 | 49.9 | 36.7 | 27.2 | 18.9 |
| GTSDC-700 | 131.4 | 125.7 | 114.7 | 104.4 | 84.8 | 69.2 | 53.8 |
| GTSDC-800 | 159 | 151.6 | 145.5 | 138.5 | 124.6 | 107.9 | 83.6 |
| GTSDC-900 | 200 | 193 | 187.4 | 180.4 | 166.6 | 153.1 | 126.6 |
| GTSDC-1000 | 132.9 | 123.8 | 118.2 | 111.5 | 98.5 | 83.2 | 65 |

Table S2 Specific capacitance as a function of the current density (A g^{-1})

| Current density \ Sample | 0.25 | 0.5 | 1 | 2 | 4 | 6 | 8 | 10 |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-----|
| GDC | 44.4 | 31.9 | 21 | 12.6 | 5.6 | 3.8 | 1.6 | 1 |
| GDC-900 | 198.5 | 145.6 | 119 | 143.4 | 132 | 128.4 | 122.4 | 117 |
| GTSDC | 60.3 | 53.6 | 43.6 | 36.2 | 31.2 | 23.4 | 17.6 | 14 |
| GTSDC-700 | 144.3 | 128.1 | 96 | 89.6 | 78.4 | 70.8 | 65.6 | 61 |
| GTSDC-800 | 188 | 162.5 | 145 | 134.8 | 132.8 | 129 | 119.2 | 113 |
| GTSDC-900 | 283 | 213.6 | 196.3 | 173.8 | 164 | 157.8 | 152.8 | 148 |
| GTSDC-1000 | 146.3 | 129.3 | 120.2 | 115 | 104 | 97.8 | 91.2 | 84 |

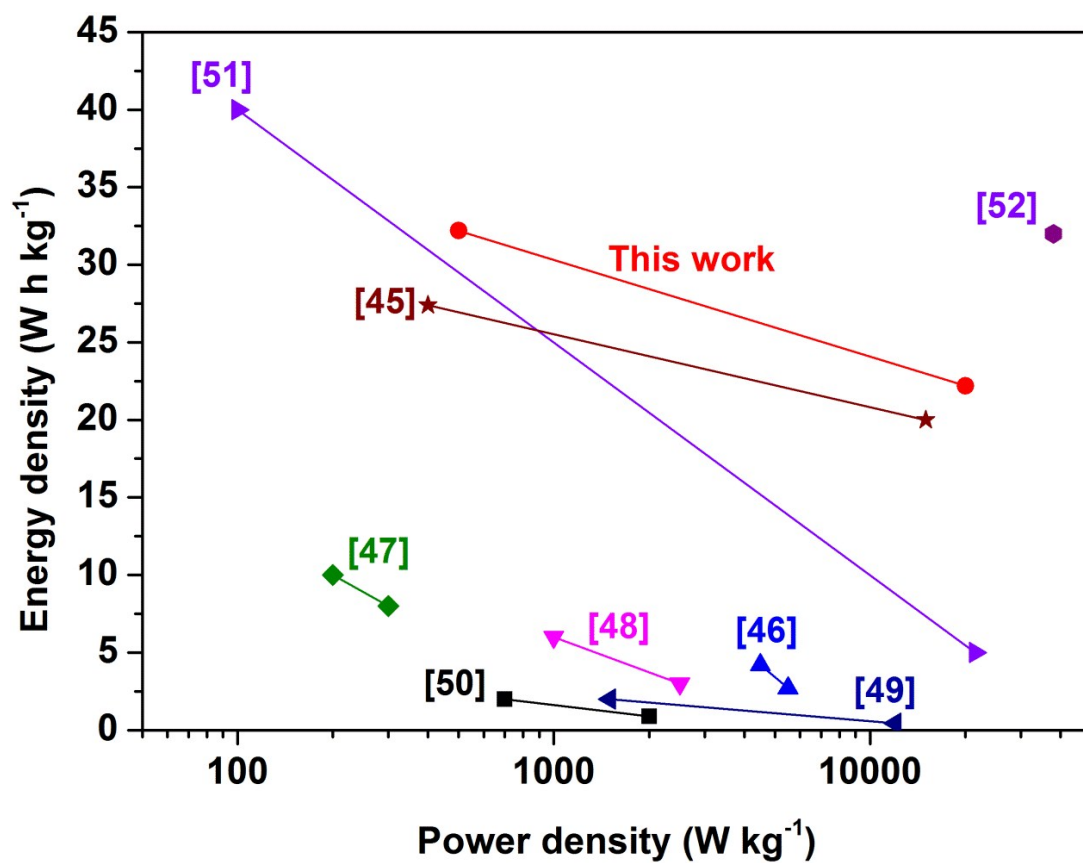


Figure S6 Performance comparison of our cell versus previously reported carbon symmetric supercapacitors in aqueous electrolyte.