Supplementary Materials

Silicon Oxycarbide-Graphite Electrodes for High-Power Energy Storage Devices

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| C:\Users\Lenovo\Desktop\Plots for publication\PhTES Si.tif(**a**) | C:\Users\Lenovo\Desktop\Plots for publication\PhTES-10g Si.tif(**b**) |

**Figure S1.** XPS Si2p spectra of (**a**) SiOCPhTES and (**b**) SiOCPhTES/C10g samples.

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| C:\Users\Lenovo\Desktop\Plots for publication\PhTES C.tif(**a**) | C:\Users\Lenovo\Desktop\Plots for publication\PhTES-10g C.tif(**b**) |

**Figure S2.** XPS C1s spectra of (**a**) SiOCPhTES and (**b**) SiOCPhTES/C10g samples..

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| C:\Users\Lenovo\Desktop\Plots for publication\Graph34.tif(**a**) | C:\Users\Lenovo\Desktop\Plots for publication\Graph10.tif(**b**) |

**Figure S3.** (**a**) Deconvolution of Raman spectra of the pure graphite, (**b**) second-order Raman spectra of graphite, ceramic and SiOC/graphite composites.

**Table S1.** Data obtained from the deconvolution of Raman spectra.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Material** | **D4** | **D1** | **D3** | **G** | **D2** |
| **cm-1** | **Area int. %** | **FWHM** | **cm-1** | **Area int. %** | **FWHM** | **cm-1** | **Area int. %** | **FWHM** | **cm-1** | **Area int. %** | **FWHM** | **cm-1** | **Area int. %** | **FWHM** |
| SiOCPhTES | 1194 | 7.07 | 213.73 | 1333 | 65.82 | 164.19 | 1525 | 7.61 | 114.24 | 1575 | 8.34 | 52.61 | 1608 | 11.17 | 43.63 |
| SiOCPhTES/C2g | 1193 | 4.04 | 159.73 | 1327 | 66.23 | 155.38 | 1528 | 7.41 | 135.00 | 1580 | 12.39 | 56.85 | 1609 | 9.93 | 35.85 |
| SiOCPhTES/C4g | 1195 | 5.72 | 219.73 | 1332 | 60.78 | 149.48 | 1525 | 7.62 | 143.96 | 1571 | 11.72 | 41.50 | 1603 | 14.16 | 48.20 |
| SiOCPhTES/C10g | 1197 | 6.90 | 188.33 | 1333 | 60.78 | 142.96 | 1528 | 7.97 | 131.37 | 1580 | 13.65 | 37.54 | 1610 | 10.71 | 38.59 |
| Graphite | - | - | - | 1348 | 30.62 | 49.83 | - | - | - | 1573 | 65.24 | 23.46 | 1611 | 4.14 | 31.20 |

|  |  |
| --- | --- |
| (**a**) | (**b**) |

**Figure S4.** SEM pictures of (**a**) graphite flakes, (**b**) graphite flakes after 2 h of sonication in isopropanol.