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Electronic Supplementary Information

Reliable and Flexible Supercapacitors toward Wide-temperature Operation Based

on Self-supporting SiC/CNT Composite Films

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| Samples – | Mass ratio (%) | | Mass of single electrode (mg) |
|-----------|----------------|-----|--------------------------------|
| | С | SiC | Mass of single electrode (ing) |
| SiC-100 | 0 | 100 | 1.05 |
| SiC-90 | 10 | 90 | 0.95 |
| SiC-80 | 20 | 80 | 1.01 |
| SiC-70 | 30 | 70 | 0.98 |
| SiC-60 | 40 | 60 | 0.97 |



Fig. S1 The digital photographs of SiC/CNT composite films with various mass percentage of SiC nanowires: (a)100%, (b) 90%, (c) 80% and (d) 60%, respectively.



Fig. S2 Nyquist curve of as-constructed SCs based on SiC-100 film electrodes.



Fig. S3 (a-e) The GCD curves of various as-constructed SCs based on SiC-*p* composite electrodes at different current densities.



Fig. S4 Ragone plot related to energy and power densities of the assembled flexible SC.



Fig. S5 The CV curves of the soft-packaged SC with various operating voltage window.



Fig. S6 The specific capacitances of the soft-packaged SC vs. working temperatures at a current density of 0.04 A g^{-1} .