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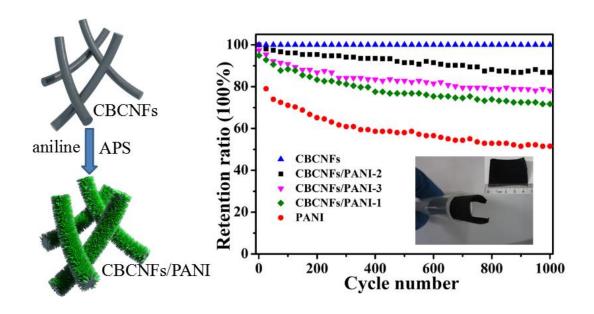
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Graphical Abstract

Freestanding needle-like polyaniline-coal based carbon nanofiber composite for flexible supercapacitor

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Freestanding, hybrid flexible supercapacitor electrodes were prepared by a simple rapid-mixture polymerization of aniline using coal based carbon nanofiber (CBCNFs) paper as substrate. Ordered needle-like polyaniline (PANI) nanowires were coated on the CBCNFs, which exhibited excellent performance for energy storage.

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