
Super transparent capacitor

What is a transparent supercapacitor?

The transparent supercapacitor has a specific capacitance of 7.3 F g^{-1} and can be biaxially stretched up to 30% strain without any obvious change in electrochemical performance even over hundreds stretching cycles.

Are CNC based supercapacitor devices optically transparent?

CNC films are transparent with transmittance of 71% at 550 nm wavelength (supplemental Fig. S1) and so the fabricated solid state thin film CNC supercapacitor devices are optically transparent(Fig. 2b) and mechanically flexible (Fig. 2c). Schematics of the fabrication process of a branched CNC based supercapacitor and its optical images.

Which supercapacitors have higher capacitance?

The supercapacitors using PEDOT:PSS nanofibers showed higher capacitance in comparison with supercapacitors using PEDOT:PSS thin films deposited by spin-coating and doped with EG or DMF, -the solvents used in the spinnable solution-.

How are flexible and transparent supercapacitors fabricated?

Flexible and transparent supercapacitors were fabricated using electrospun PEDOT:PSS electrodes. SCs using PEDOT:PSS nanofibers as electrodes showed higher capacitance in comparison with SCs using PEDOT:PSS films. The SCs showed good stability maintaining more than 90 % of the capacitance after 1000 charge-discharge cycles.

The progressive development of flexible transparent portable electronic devices is in urgent need of matching power sources. Flexible transparent supercapacitors (FTSCs) are ...

Transparent and stretchable energy storage devices, maintaining the capability of steady operations under harsh conditions, have gained more importance with the development ...

Researchers from Edinburgh Napier University, UK published in Applied Physics Letters its study of transparent ionotronic-based flexible electrochemical supercapacitors using ...

Due to the existing trade-off between transmittance and capacitance, novel approaches are being developed to achieve high transparency ($>90\%$) with high capacitance for modern transparent ...

Transparent conductive electrodes coated with pseudo-capacitive materials such as metal oxides and conductive polymers have been suggested to enhance the capacitance of transparent SCs.

ABSTRACT Two-dimensional molybdenum disulfide (MoS_2) nanosheets have emerged as a promising material for transparent, flexible micro-supercapacitors, but their use ...

In this work, we report on the fabrication of continuous transparent and flexible supercapacitors by depositing a CNT network onto a polymer electrolyte membrane directly ...

Electrospun poly(3,4-ethylene dioxythiophene) polystyrene sulfonate (PEDOT: PSS) nanofibers were deposited onto flexible polyethylene terephthalate (P...

The transparent supercapacitor has a specific capacitance of 7.3 F g^{-1} and can be biaxially stretched up to 30% strain without any obvious change in electrochemical ...

Here we construct mechanically flexible and optically transparent thin film solid state supercapacitors by assembling nano-engineered carbon electrodes, prepared in porous ...

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