Polypyrrole-coated paper for flexible solid-state energy storage

As an important class of energy storage devices, flexible and stretchable supercapacitors have attracted intensive ... Polypyrrole-coated graphene foam was synthesized by a modified interfacial ... High-performance and breathable polypyrrole coated air-laid paper for flexible all-solid-state supercapacitors. Adv. Energy Mater., 7 (2017 ...

High-performance and breathable polypyrrole coated air-laid paper for flexible all-solid-state supercapacitors. Adv. Energy Mater., 7 (2017), p. 1701247. ... Polypyrrole-coated paper for flexible solid-state energy storage. Energy Environ. Sci., 6 (2013), pp. 470-476. Crossref View in Scopus Google Scholar [45]

Ultra-high performance and flexible polypyrrole coated CNT paper electrodes for all-solid-state supercapacitors. J. Mater. Chem. A, 7 (17) (2019), pp. 10751-10760. ... Polypyrrole-coated paper for flexible solid-state energy storage. Energy Environ. Sci., 6 (2013), pp. 470-476. Crossref View in Scopus Google Scholar

Polypyrrole-Coated Paper for Flexible Solid-State Energy Storage Longyan Yuan,? a bBin Yao,?a,b Bin Hu,a Kaifu Huo, Wen Chen and Jun Zhou*a a Wuhan National Laboratory for Optoelectronics (WNLO), and School of Physics, Huazhong University of Science and Technology (HUST), Wuhan, 430074, China; E-mail: jun.zhou@mail.hust .cn

Ultra-high performance, flexible, and good conductive polypyrrole (PPy) coated carbon nanotube paper (CNTP) electrodes are successfully prepared by a facile in-situ interfacial polymerization method.

In addition, a symmetrical solid-state supercapacitor based on MXene-PPy textiles was assembled, which achieved an energy density of 1.30 mW h g 1 (power density ¼ 41.1 mW g 1). This work introduces a new type of MXene-based textile SC, which provides a promising candidate for flexible and wearable energy storage devices. Introduction

Facile synthesis of graphene paper/polypyrrole nanocomposite as electrode for flexible solid-state supercapacitor. Author links open overlay panel Weizheng Wang a 1, Omer Sadak b c 1, ... Flexibility plays a crucial role in energy storage systems since it expands the application of those devices. We verified the flexibility via GCD measurements ...

A solid-state flexible supercapacitor (SC) based on organic-inorganic composite structure was fabricated through an "in situ growth for conductive wrapping" and an electrode material of ...

Highly conductive paper was fabricated through polypyrrole (PPy) coating on common printing paper by a

simple and low-cost "soak and polymerization " method. The as-fabricated porous, flexible and conductive paper shows a high electrical conductivity of 15 S cm -1 and a low sheet resistance of 4.5 O sq -1.Flexible solid-state supercapacitors assembled with PPy/paper ...

Particularly, its volumetric energy density outperforms many previously reported solid-state SCs, such as polypyrrole-coated paper symmetric SC 10, carbon/MnO 2 fiber symmetric SC 30, H-TiO 2 @MnO ...

High-performance, breathable, conductive, and flexible polypyrrole (PPy) coated paper electrodes are prepared by an interfacial polymerization method using air-laid paper as a substrate.

In addition, a symmetrical solid-state supercapacitor based on MXene-PPy textiles was assembled, which achieved an energy density of 1.30 mW h g -1 (power density = 41.1 mW g -1). This work introduces a new type of MXene-based textile SC, which provides a promising candidate for flexible and wearable energy storage devices.

areal specific capacitance of 566.5 mF cm-2 is achieved, corresponding to an areal energy density of 38.55 mWhcm-2 and power density of 0.17 mW cm-2. These results suggest that ...

A high-performance paper electrode is fabricated through coating polypyrrole (PPy) on ordinary laboratory filter paper via a traditional interfacial polymerization method with perchloric acid (HClO 4) as a dopant.Owing to the superior mechanical flexibility and environmental stability of the free standing PPy paper, the robust electrode displays an ultrahigh capacitance of 1650 mF cm -2 ...

A solid-state powerful supercapacitor (SC) is fabricated with a substrate of Xerox paper. Its current collector based on a foldable electronic circuit is developed by simply pencil drawing. Thin graphite sheets on paper provide effective channels for electron transmission with a low resistance of 95 O sq-1. The conductive organic material of polypyrrole coated on thin ...

These make the PPy-coated WTSS electrode an excellent alternative candidate for flexible energy storage. We utilized a simple dipping-and-polymerization method to prepare an interesting electrode material consisting of polypyrrole (PPy) polymerized on a wood transverse section slice (WTSS), and fabricated a wood-based supercapacitor.

Electrodes that combine energy storage with mechanical and photothermal performance are necessary for efficient development and use of flexible energy storage and conversion devices. In this study, the flexible, ultrathin, and multifunctional polypyrrole/cellulose nanofiber composite films were fabricated via a one-step "soak and polymerization" method. ...

A high-performance paper electrode is fabricated through coating polypyrrole (PPy) on ordinary laboratory filter paper via a traditional interfacial polymerization method with perchloric acid (HClO 4) as a

dopant.Owing to the superior mechanical flexibility and environmental stability of the free standing PPy paper, the robust electrode displays an ultrahigh capacitance of 1650 ...

Based on these superior features, an all-solid-state supercapacitor assembled with the PPy coated paper electrodes shows an outstanding energy density of 62.4 µW h cm -2, remarkable air permeability and excellent flexibility to sustain various deformations. Furthermore, large-scale fabrication of conductive flexible paper electrode can be ...

To evaluate the actual energy storage performance of the MPP-5 supercapacitor, a series connection of MPP-5 assembled supercapacitors is utilized to increase the operational voltage, enabling them to function as the power supply of LEDs. ... High-performance and breathable polypyrrole coated air-laid paper for flexible all-solid-state ...

Polypyrrole (PPy), as one of the conducting polymers, has emerged as a promising active material for high performance supercapacitor owing to its intrinsic characteristics (e.g. high electrical conductivity and interesting redox properties) "s attracting more and more attentions with the development of flexible/wearable devices thanks to the great flexibility and ductility of ...

High-Performance and Breathable Polypyrrole Coated Air-Laid Paper for Flexible All-Solid-State Supercapacitors Yuanxun Chen, Key Laboratory of Advanced Civil Engineering Materials (Tongji University), Ministry of Education, School of Materials Science and Engineering, Tongji University, 4800 Caoan Road, Shanghai, 201804 China

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Among various energy storage devices, ... such as polypyrrole 9, ... Yuan, L. et al. Polypyrrole-coated paper for flexible solid-state energy storage. Energy Environ.

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