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Recent Progress in Printed Electrode for Energy Storage Applications

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Abstract

There is an increasing interest in the development of miniaturized and flexible devices for applications in wearable and portable electronics today. However, one obstacle that hindered was the relatively large size and weight of energy storage. Therefore, the development of thin energy storage supply is an important solution for making lightweight wearable devices. Printed electronics refer to a process in which printing technology is that can be used to prepare thinner electronic devices and leads to a lightweight design. In addition, printing process is very simple and inexpensive, with the use of traditional printing techniques that are highly accurate, such as inkjet printing, screen printing, roll-to-roll printing. For this reason, printed electronics technology is suitable solution to prepare thinner energy storage devices. In this section, we are going to present the advancement of research on printed energy storage namely supercapacitor and batteries in terms of the printing method being applied and development of electrode materials and electrolyte that is suitable for printing process. In the last part, additionally, the recent progress of our researching in printed graphene-based electrode for supercapacitor and battery is presented.

Keywords: Printed energy storage devices; Battery; Supercapacitor