

High-Capacitive Supercapacitor based on Nickel Oxide/Graphene Nanocomposites

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Nowadays, environmental problems are standing in a big issue because consumption of fossil fuel caused many problems including global warming. Therefore, many researchers have an interesting for developing a new generation of energy storage system to keep the sustainable development. Among many types of energy storage devices, supercapacitors have played an important role in various fields due to the advantage of high power density, long life cycle and so on. Futhermore, the markets for supercapacitors are getting bigger at a high rate. By the way, conventional capacitors have a problem of low energy density. Here, to overcome this problem, Graphene/Nickel Oixde hybrid composite has been considered as a promising electrode material for energy storage devices. Also, since the carbon nanotube branches are growth directly on the surface of the carbon nanotube or graphene, excellent interface characteristics can be realized and 3D carbon structure can be obtained in a short time due to microwave synthesizing method. This project shows synthesis method, unique structure and physical properties of hybrid nanocomposite, as well as its electrochemical data, and outlook for future research.