Super Graphene Three-Dimensional Capacitor

Graphene aerogels (GAs) exhibit exceptional potential in energy storage, particularly for high-capacity supercapacitors (SCs), owing to their unique three-dimensional (3D) porous structure, ...

Graphene, a single layer of carbon atoms with a hexagonal arrangement in a two-dimensional lattice, has high thermal conductivity, high specific surface area, excellent electronic ...

Supercapacitors are among a few promising alternatives due to their easy preparation, environmentally friendly nature, and vast ...

We report a method that uses an inexpensive and abundant carbon feedstock, coal tar pitch (CTP), along with a potassium carbonate (K 2 CO 3) catalyst in a simple, tube ...

This study introduces three-dimensional porous graphene (NP-3DPG) doped with nitrogen and phosphorus, engineered with specific ...

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In recent years, 3D graphene has emerged as a valuable material for several applications. The successful utilization of 3D graphene in supercapacitors opened doors of exploration to...

In this work, three types of CVD-synthesized 3-dimensional graphene, differing in their sp 2 /sp 3 ratio, nitrogen doping content, and oxygen presence, are compared for their electrochemical ...

In this study, mesoporous graphene with three dimensional structure (3dGR) is prepared by a modified

Hummers method and a simple solvent treatment. The results of ...

This study introduces three-dimensional porous graphene (NP-3DPG) doped with nitrogen and phosphorus, engineered with specific structural and electrochemical properties to ...

Ultimately, this review offers researchers an understanding and outlook on the application of 3D network graphene materials in supercapacitor energy storage and capacitive ...

Under this topic, various types of synthesis methods of 3D-GN with examples, the fundamental characteristics of three different SCs and the energy storage mechanism of each ...

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