

Graphene, with unique two-dimensional form and numerous appealing properties, promises to remarkably increase the energy density and power density of ...

In conclusion, the review underscores the potential of graphene-based metal oxide composites as promising materials for next-generation energy storage devices to meet ...

Review Laser-induced and catalyst-free formation of graphene materials for energy storage and sensing applications Rajesh Kumar a, Raghvendra Pandey b, Ednan ...

As a consequence, three-dimensional graphene materials have been extensively studied for various potential applications, including supercapacitors and batteries for energy ...

This review mainly addresses applications of polymer/graphene nanocomposites in certain significant energy storage and conversion devices such as supercapacitors, Li-ion batteries, ...

In this review, the recent advances of graphene-based materials for miniature energy harvesting and storage devices are summarized, including solar cells, ...

Efficient energy storage is one of the challenges of the near future. Graphene is a strong conductor of electricity and heat, an extremely strong, lightweight, ...

The graphene-based materials are promising for applications in supercapacitors and other energy storage devices due to the intriguing properties, i.e., highly tunable surface ...

As capacity requirements in energy storage applications increase, graphene composites such as the embedment/encapsulation of nanostructured materials in graphene ...

Energy storage and conservation are receiving increased attention due to rising global energy demands. Therefore, the development of energy storage materials is crucial. ...

The forceful synergistic effect between MoS<sub>2</sub> and graphene optimizes the defects of each material, improves the electrochemical performance, and affects the future of energy ...

The current worldwide situation demands the efficient supply of sustainable energy, storing renewable energy, and converting it to other forms of energy for various ...

This review summarizes the current uses of graphene-based materials in these devices and demonstrates their

advances. It also discusses the opportunities for graphene in ...

Graphene-based materials have been extensively investigated in the energy-related applications owing to their unique properties, such as high conductivity and mechanical ...

Nano-graphene and graphene coating provide feasibility for the miniaturization of energy storage equipment which inspired the possibility for portable and foldable devices. The ...

The demand for high performance electrochemical energy storage devices has significantly increased in recent years and many efforts have been made to develop advanced ...

Recently, graphene-based composites have attracted increasing attention for electrochemical energy storage by combining the merits of graphene and other electrochemical ...

Two-Dimensional Materials Have a Role to Play in Li-ion Batteries Too While the research we have covered here in graphene's use in energy storage has just been in supercapacitors, the ...

This review highlights flexible graphene-based two-dimensional film and one-dimensional fiber supercapacitors and various batteries including lithium-ion, lithium-sulfur and ...

Abstract Numerous studies have focused on the development of energy-storage devices, such as batteries and supercapacitors (SCs). As molybdenum disulfide (MoS<sub>2</sub>) and ...

Benefiting from those properties and the unique structure, three-dimensional graphene-based materials are attractive for a broad range of applications, especially in energy ...

Regarding the energy storage applications, graphene oxide (GO) inks have been extensively investigated to match the requirements for the DIW 3D printing technology, where ...

Here we present an efficient thermal management system with high power and energy density by hyperbolic graphene phase change material, preventing the rapid heat ...

Since the first exfoliation in 2004, graphene has been widely researched in many fields of materials engineering due to its highly appealing propertie...

Laser-based methodologies for synthesis, reduction, modification and assembly of graphene-based materials are highly demanded for energy-related electrodes and devices ...

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# Energy storage materials and graphene

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