

How can biomass be used as a material?

Due to its high carbon content and diverse molecular structures, biomass can be made into carbon materials with different structures, allowing these materials to be applied in versatile applications. For instance, carbon aerogels can be used as microwave absorption materials, while carbon dots can be applied for bioimaging.

What are the benefits of using biomass as a carbon source?

In addition to protecting the environment and reducing costs, using biomass as a carbon source has many other advantages. Due to its high carbon content and diverse molecular structures, biomass can be made into carbon materials with different structures, allowing these materials to be applied in versatile applications.

What is a fully biomass-based multifunctional solar evaporator?

Herein, a fully biomass-based bilayer multifunctional solar evaporator consists of an upper lignin-derived porous carbon (LPC)-embedded chitosan/lignin (CSL) composite aerogel layer featuring vertically small channels and an underlying hydrophilic CS aerogel.

Do biomass carbon materials have layered structure?

Although some prepared biomass carbon materials may exhibit layered structure, they usually contain disordered carbon structure, defects (vacancies,  $sp^3$  hybridized carbon, oxygenated functions, etc.) and have low graphitization degree. These carbon materials are defined as graphene-like materials.

What is biomass derived-carbon materials (BCMS)?

His research focuses on carbon materials, clean combustion technologies and solid waste management. Abstract Biomass is considered as a promising source to fabricate functional carbon materials for its sustainability, low cost, and high carbon content. Biomass-derived-carbon materials (BCMs) have...

Is biomass a good source of functional carbon materials?

Biomass is considered as a promising source to fabricate functional carbon materials for its sustainability, low cost, and high carbon content. Biomass-derived-carbon materials (BCMs) have been a thriving research field. Novel structures, diverse synthesis methods, and versatile applications of BCMS have been reported.

The applications section explores the diverse applications of biomass-based nanomaterials, such as hydrogen production, carbon dioxide ...

Overall, this work highlights the influence of carbon materials on the electrochemical properties and hydrogen storage capacity of biomass-based carbon materials. This also underscores ...

This paper reviews the research progress of carbon-based photothermal conversion materials and the mechanism for solar-driven interfacial photothermal conversion ...

Biomass waste has known as a new precursor for the production of carbon-based materials due to its carbon richness, low cost, ease to access, ubiquito...

Biomass, which is derived from abundant renewable resources, is a promising alternative to fossil-fuel-based carbon materials for building a green and sustainable society. Biomass ...

In this study, Loofah sponge (LS) as a biomass waste was transformed into LHPCs with a micron-scale interpenetrating network via a destruction-reconstruction process using high ...

Graphical abstract This review comprehensively describes recent application of biomass-derived carbon in the field of supercapacitors. The effects of carbonization, activation and ...

Among them, biomass carbon materials have been widely studied because of their wide source, simple preparation and high photothermal conversion efficiency. This review introduces the ...

Based on in situ transient absorption, in situ EPR experiments, and computational studies, the detailed mechanism is unravelled for this photo-redox ...

Abstract Biomass is considered as a promising source to fabricate functional carbon materials for its sustainability, low cost, and high carbon ...

This review summarizes recently reported research in the areas of using biomass-based materials for CO<sub>2</sub> capture. The technologies of biomass conversion to carbon materials and ...

Polycrystalline silicon solar cells modified using biomass resources are promising candidates to accomplish the goal of carbon neutrality. Developing ...

The concept of solar-driven biomass hydrogenation proposed here provides an efficient and sustainable methodology for the sustainable production of renewable chemicals.

A biomass-based bilayer aerogel evaporator was designed for simultaneous solar-thermal desalination and electricity generation.

Abstract Biomass-derived carbon materials (BCMs) are encountering the most flourishing moment because of their versatile properties and wide potential ...

This article aims to review the sources, production, and applications of carbon materials derived from biomass-based polymers. We have deeply summarized the preparation and ...

The progress and breakthroughs in semiconductor-based photocatalysts for hydrogen generation from

solar-driven reforming of biomass and its derivatives are reviewed.

Abstract Biomass porous materials have special structural properties that serve as solar interfacial evaporators. However, the integrated flexible design of porous materials for vapor ...

Herein, we introduced an approach involving the development of a biomass-based hybrid engineering hydrogel evaporator, denoted as CLC ...

Research Article Multi-3D hierarchical biomass-based carbon particles absorber for solar desalination and thermoelectric power generator

In this study, an N, O co-doped biomass porous composite carbon electrode based on KOH-activated soybean dregs carbon, conductive carbon black and polymethylmethacrylate--N ...

Different highly efficient solar absorbers with broadband light absorption have been developed and reported, including carbon-based materials, conjugated polymers, and plasmonic ...

Synopsis This study developed a biomass-based hydrogel to achieve highly efficient adsorption-based atmospheric water harvesting technology, providing a sustainable solution to ...

A comprehensive review focusing on the advancements in biocarbon-based perovskite solar cells (PSCs) and the use of biomass-derived ...

We aim to emphasize the unique value of biomass-based materials in solar steam generation and inspire researchers looking for greener, lower cost approaches to synthesize efficient photothermal ...

Contact us for free full report

Web: <https://www.cuddably.co.za/contact-us/>

Email: [energystorage2000@gmail.com](mailto:energystorage2000@gmail.com)

WhatsApp: 8613816583346

