Biomaterials for Solar Cells

In biobased solar cells, the ability of biomaterials used to absorb solar rays in red and near infrared spectral ranges and to generate photocurrents thanks to electron transfer. A ...

Semantic Scholar extracted view of "Sustainable biomaterials for solar energy technologies" by Y. Ulusu et al.

In the last few decades, organic solar cells (OSCs) have drawn broad interest owing to their advantages such as being low cost, flexible, semitransparent, non-toxic, and ...

This review addresses the broad field of solar cell science since plant-based components can be utilized in almost all solar technologies, and in certain photovoltaic ...

Defect passivation is one of the most important strategies to boost both the efficiency and stability of perovskite solar cells (PSCs). Here, nontoxic and sustainable forest ...

Amino acid biomaterials with carboxylic and amino functional groups have been used for interfacial or surface modification of the ZnO electron selective layer in organic solar ...

In this chapter, the processes of obtaining biomaterials and ways to improve productivity and stability to be used in photovoltaic technology by natural and/or synthetic ...

Solar Energy Materials & Solar Cells is intended as a vehicle for the dissemination of research results on materials science and technology related to photovoltaic, photothermal and ...

Biomaterials based solar cell is emerging due to their sustainable, scalable, abundant, renewable, and environmentally-friendly energy production. This review highlights ...

Use of biomaterials in perovskite solar cells (PSCs) is sustainable. Biomaterials in PSCs aid waste management, biodegradability and biocompatibility. Cellulose alters surface ...

Although the solar conversion efficiency of the PSI-LHCI/hematite DSSC is currently below a practical use, the system provides a blueprint for a genuinely green solar cell ...

There are several incentives for developing flexible solar cells, particularly from biomaterials. For example, commercial silicon-based solar cells are often difficult to transport ...

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modification of the ZnO ...

Bio-based materials can serve as both passive and active elements in solar cells. They can function as substrates, electrolyte scaffolds, and photo-electric converters. ...

Dye-sensitized solar cells (DSSCs) are emerging as one of the most promising ...

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However, these biomaterial-fabricated solar cells are found to be reasonably effective due to their fast rate of transportation of charge carriers, optimum bandgap, minor ...

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