Organic solar container material benzene ring

Our investigation focused on explaining the interactions between CuO nanoparticles and these benzene-ring-containing organic compounds. The optical sensing capabilities were elucidated ...

Non-fullerene acceptor materials, as a key component of organic solar cells, have attracted widespread attention in recent years. At present, the power conversion efficiency of organic ...

This study systematically investigates non-fused acceptors (NFAs) based on a benzene donor core, focusing on how varying the electron-donating ability of the spacers affects the ...

This strategy offers a cost-effective approach for fabricating highly efficient and stable binary and ternary organic solar cells, opening new horizons for cost-effective and durable solar cell ...

Among many clean energy sources, solar energy has an inexhaustible advantage, which can be used rationally to effectively alleviate the adverse impact of fossil materials on the ...

A novel p-type organic semiconductor (p-OS), P2TBR, based on a non-fused ring structure of thiophene-benzene-thiophene (TBT) as the core and 2D-conjugated benzodithiophene ...

The development of nonfused ring electron acceptors (NFREAs) has attracted significant attention owing to their suitability for producing cost-effective and efficient organic solar ...

In this study, we investigated the impact of fluorine substitution positions on benzene rings within polythiophenes (PTs), leading to two polymers composed of non-fused rings of o...

The power conversion efficiencies of organic solar cells have now surpassed 20%, marking a considerable advance in performance. This progress raises an important question: which ...

Fullerenes and their derivatives are important types of electron acceptor materials and play a vital role in organic solar cell devices. However, the fullerene acceptor material has some ...

Organic solar cells (OSCs) a class of emerging photovoltaics for potentially disruptive technology have made progress significantly over the past two decades owing to their advantages of ...

Benzene is a genotoxic carcinogen with no safe level of exposure. Here, by creating and decorating a structural defect in a metal-organic framework to form MIL-125-Zn, a benzene ...

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In recent years, significant progress has been witnessed in organic solar cells (OSCs), which is mainly attributed to the new active layer materials design, especially fused ring acceptors. However, the ...

As promising clean and renewable energy harvesters, organic solar cells (OSCs) have attracted widespread attention and achieved rapid improvement in power conversion efficiency ...

He is mainly engaged in the design, synthesis, and functional application research of high-performance organic photovoltaic materials, as well as the design and application research of ...

In this work, three fully non-fused ring electron acceptors (NFREAs), DTB21, DTB22, and DTB23, are reported by utilizing a simplified 1,4-di (thiophen-2-yl)benzene (DTB) core with varied ...

Benefitting from low cost and simple synthesis, simple structured non-fused ring acceptors (NFRAs) and polymer donors are crucial for the application of organic solar cells (OSCs).

Three new donor-acceptor (D-A) copolymers based on benzodithiophene (BDT) with alkylthiolated aromatic rings furan, thiophene, and benzene and 5,6-difluoro-4,7-bis (4- (2 ...

Controlling nanoscale morphology is essential for boosting organic solar cells (OSCs) performance, especially as highly conjugated fused-ring small molecule acceptors tend to aggregate ...

Recently, great progress has been made in fully non-fused ring electron acceptors (NFREAs) with only single-aromatic ring in the electron-donating core, which might achieve a fine ...

ConspectusToward future commercial applications of organic solar cells (OSCs), organic photovoltaic materials that enable high efficiency, excellent stability, and low cost should be ...

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