Pyrene-type single-flow battery

Researchers developed a high-solubility pyrene tetraone derivative (PTO-PTS) that enhances AOFB energy density and stability. This monomer enables reversible four-electron ...

New Pyrene Derivative Boosts Flow Battery Energy Researchers designed an asymmetrical pyrene-4,5,9,10-tetraone-1-sulfonate (PTO-PTS) monomer via a coupling oxidation-sulfonation reaction.

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In a significant advancement, researchers at the Dalian Institute of Chemical Physics have engineered a novel pyrene tetraone derivative, which displays remarkable water solubility and boosts ...

In this review, the latest progress in enhancing the performance of PTO-based electrodes and their applications in various battery types is presented. First, a brief discussion is ...

A research team from the Dalian Institute of Chemical Physics (DICP) of the Chinese Academy of Sciences (CAS) has developed a pyrene tetraone derivative that improves the ...

Aqueous organic flow batteries (AOFBs) hold promise for renewable energy integration and electricity grid storage due to their inherent safety, as well as the availability of naturally ...

Herein, we presented an asymmetrical pyrene-4,5,9,10-tetraone-1-sulfonate (PTO-PTS) monomer which not only could reversibly store four electrons but also exhibited a high theoretical ...

AOFBs incorporating the pyrene tetraone derivative achieved an energy density of 60 Wh/L. Both symmetric and full cells exhibited no obvious capacity to decay after thousands of cycles ...

The insights into the in situ electrosynthesis of pyrene-based ORAMs provided in the work will provide

guidance for designing ultra-stable ORAMs for AOFB applications.

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