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Title: Advantages of organic flow batteries

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What are the advantages of aqueous organic flow batteries?

Compared with non-aqueous organic flow batteries, the aqueous organic flow battery systems possess several advantages. Firstly, the capital cost is reduced since the electrolyte compositions include only water and inexpensive NaCl or KOH as supporting materials.

What is organic flow battery?

Among its various types, organic flow battery, which employs naturally abundant organic molecules as its redox-active species, is considered as the suitable option toward achieving high performance, enhanced energy density, and reduced costs. In recent years, diverse organic materials and solvents have been employed in flow battery technology.

What is aqueous organic flow battery system?

As the most popular type of the organic flow batteries, the aqueous systems using water as the solvent for the electrolytes have received ever-increasing investigations [41,42,43]. Compared with non-aqueous organic flow batteries, the aqueous organic flow battery systems possess several advantages.

What are the physicochemical properties of organic flow batteries?

The physicochemical properties as well as various performance metrics of organic flow batteries are significantly dependent on their major materials and design components, which include electrodes, membrane, and redox-active species/electrolyte.

Aqueous organic redox flow batteries are promising for grid-scale energy storage, although their practical application is still limited. Here, the authors report highly ion-conductive ...

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