

In perovskites, ion diffusion in the presence of defects plays a crucial role in ...

This study demonstrates the promising potential of perovskite materials for high-performance metal-iodine batteries. Their reactions based on the two-electron transfer mechanism shed light on similar battery systems aiming for decent ...

Amines are widely employed as additives for improving the performance of metal halide perovskite optoelectronic devices. However, amines are well-known for their high chemical reactivity, the impact of which has yet to receive enough ...

For example, thanks to the substitution of the sulfhydryl to the hydroxyl group, the 2D-layered perovskite $(\text{HS}(\text{CH}_2)_2\text{NH}_3)_2\text{PbI}_4$ shows a better water stability than $(\text{HO}(\text{CH}_2)_2\text{NH}_3)_2\text{PbI}_4$...

Although some 2D hybrid perovskites with sulfur-containing amines have been reported, the cation having the mercaptan group has not been well explored yet. In this work, cysteamine ...

Among them, constructing 2D/3D perovskite heterostructures using alkyl ammonium halide possesses many advantages: (1) The defective 3D perovskite surface can ...

SEM images of the Al foil anode for the LCA perovskite battery and 3D perovskite battery were also obtained after the cycling processes as shown in Figs. S19 and S20, ...

By regulating the secondary growth of lead iodide, a low-energy, high ...

Poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) (PEDOT:PSS) is the most successful conducting polymer in terms of practical application. It has good film forming ...

In this work, phenylethylammonium iodide (PEAI)-induced bilateral interface engineering was developed to improve the device efficiency and stability of methylammonium ...

Here, we present two key developments with a synergetic effect that boost the PCEs of our tandem devices with front-side flat Si wafers--the use of 2,3,4,5,6 ...

With the aim to go beyond simple energy storage, an organic-inorganic lead halide 2D perovskite, namely 2-(1-cyclohexenyl)ethyl ammonium lead iodide (in short CHPI), ...

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In perovskites, ion diffusion in the presence of defects plays a crucial role in energy devices. Reports have shown a large capacitance of 100 mF cm^{-2} in halide perovskite, ...

Here we develop lightweight, thin ($<2.5 \text{ mm}$), flexible and transparent-conductive-oxide-free quasi-two-dimensional perovskite solar cells by incorporating alpha ...

As summarized in Figure 4b, the perovskite-based battery promoted a reversible energy density of $441 \text{ mWh g}^{-1} \text{ I+Br}$ and capacity and $336 \text{ mAh g}^{-1} \text{ I+Br}$ (over 100 mAh g^{-1} ...

The crystal structure of CsPbI_3 perovskite is schematically illustrated in the inset of Fig. 1 is well-known that the structural stability of a halide perovskite material (chemical ...

In this work, we significantly improve the rate performance of the battery electrodes by asphalt-derived carbon coating, and strategically couple high-efficiency n-i-p ...

In this work, we significantly improve the rate performance of the battery ...

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