

Environmental Science journals

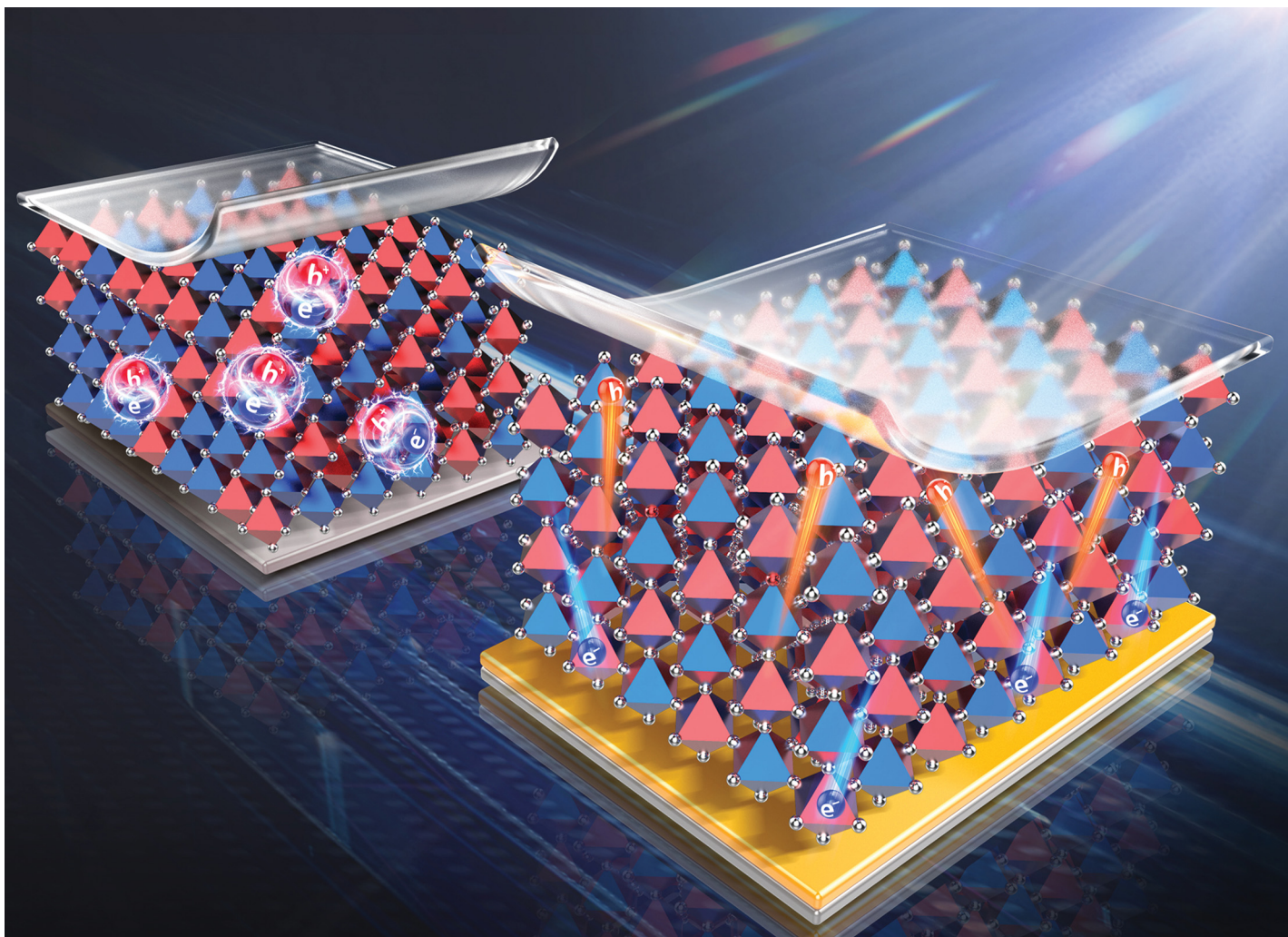
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Fundamental questions
Elemental answers



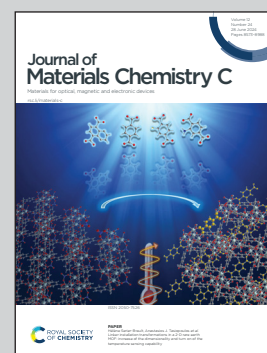


Showing research from Xu's group, Department of Physics,
School of Science, Zhejiang Sci-Tech University, China.

Ordered growth of $\text{Cs}_2\text{AgBiBr}_6$ double perovskites on
PEIE-decorated SnO_2 for efficient planar solar cells

$\text{Cs}_2\text{AgBiBr}_6$ double perovskite is an alternative to lead-based perovskites for photovoltaic applications due to stability and non-toxicity. However, the disordered arrangement of Ag/Bi octahedra contributes to the formation of self-trapped excitons (STEs) and hinders carrier transport. Here ethoxylated-polyethylenimine (PEIE) interlayer is utilized to regulate the growth of $\text{Cs}_2\text{AgBiBr}_6$ with ordered Ag/Bi octahedra arrangements. This approach inhibits the formation of STEs and facilitates carrier transport, with well-matched energy level alignments. Consequently, the power conversion efficiency of the planar solar cell increases by 250%.

As featured in:



See Lingbo Xu, Can Cui *et al.*,
J. Mater. Chem. C, 2024, **12**, 8697.