

These advances mark the beginning of a rising era of ultra-high-efficiency perovskite-based multi-junction PVs using three or even more junctions. The detailed balance limit in PCE of around ~45% for tandem solar cells increases to ~51% for triple-junction solar cells. Here, we focus on 3J PPS PVs.

Quite remarkably, perovskite solar cells currently outperform the efficiency of more established photovoltaic technologies such as cadmium telluride and copper indium gallium selenide, although...

We demonstrate four- and two-terminal perovskite-perovskite tandem solar cells with ideally matched band gaps. We develop an infrared-absorbing 1.2-electron volt band-gap perovskite,  $\text{FA}_{0.75}\text{Cs}_{0.25}\text{Sn}_{0.5}\text{Pb}_{0.5}\text{I}_3$ , that can deliver 14.8% efficiency.

Perovskite solar cells take a step forward. A new encapsulation technique helps move a photovoltaic toward commercialization. Emilio J. Juarez-Perez and Marta Haro Authors Info & Affiliations. Science. 19 Jun 2020. Vol 368, Issue 6497. p. 1309. DOI: 10.1126/science.abc5401.

Herein, advances that have been made in the application of perovskites to building-integrated photovoltaics (BIPVs) in four areas are highlighted: semitransparent windows, colorful wall facades, electrochromic windows, and thermochromic windows.

The broad bandgap tunability of perovskites makes them versatile candidates as the subcell in a tandem photovoltaics architecture. Stacking photovoltaic absorbers with cascaded bandgaps in a...

Perovskites are widely seen as the likely platform for next-generation solar cells, replacing silicon because of its easier manufacturing process, lower cost, and greater flexibility. Just what is this unusual, complex crystal and why does it have such great potential?

The next-generation applications of perovskite-based solar cells include tandem PV cells, space applications, PV-integrated energy storage systems, PV cell-driven catalysis and BIPVs.

A perovskite solar cell (PSC) is a type of solar cell that includes a perovskite-structured compound, most commonly a hybrid organic-inorganic lead or tin halide-based material as the light-harvesting active layer. [1][2] Perovskite materials, such as methylammonium lead halides and all-inorganic cesium lead halide, are cheap to produce and simp...

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