

Bandgap Tunable All-Inorganic Cesium Lead Halide Perovskites with High Temporal Stability

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Perovskite-sensitized solar cells intensively have been studied, due to perovskite materials exhibit remarkable properties such as high absorption, long charge carrier's diffusion length, small exciton binding energy, convenient bandgap tunability, and solution processability. Although organic cations, such as methyl ammonium (MA) and formamidinium (FA), are typically used for high efficiency solar cells, their thermal stabilities are still not sufficient to find commercial applications. Therefore, we tried to fabricate thermally stable all-inorganic cesium lead mixed-halide perovskites solar cells. We found that the cesium lead mixed halide is compositionally stable up to its decomposition temperature and the perovskite solar cells are stably operating at high temperature.