

Band Structure Determination for Perovskites (PV-3)



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Scientific Achievement:

We determined the electronic band structure for $\text{FA}_{0.85}\text{Cs}_{0.15}\text{PbI}_{3-x}\text{Br}_x$ compositions.

Significance and Impact:

The bandgap-tunable $\text{FA}_{0.85}\text{Cs}_{0.15}\text{PbI}_{3-x}\text{Br}_x$, where $x = 0.0$ to 2.5, is suitable for tandem configurations.

Research Details:

- Hybrid perovskite films of $\text{FA}_{0.85}\text{Cs}_{0.15}\text{PbI}_{3-x}\text{Br}_x$ are formed by the spin-coating method.
- The bandgap increases with an increase in Br content.
- Electronic band structure is determined for all $x = 0.0$ to 2.5.

Publication(s): Sateesh Prathapani, Parag Bhargava, Sudhanshu Mallick, Electronic Band Structure of Formamidinium–Cesium Mixed Cation Lead Mixed Halide Hybrid Perovskites, *Applied Physics Letters* **112**, 092104 (2018).

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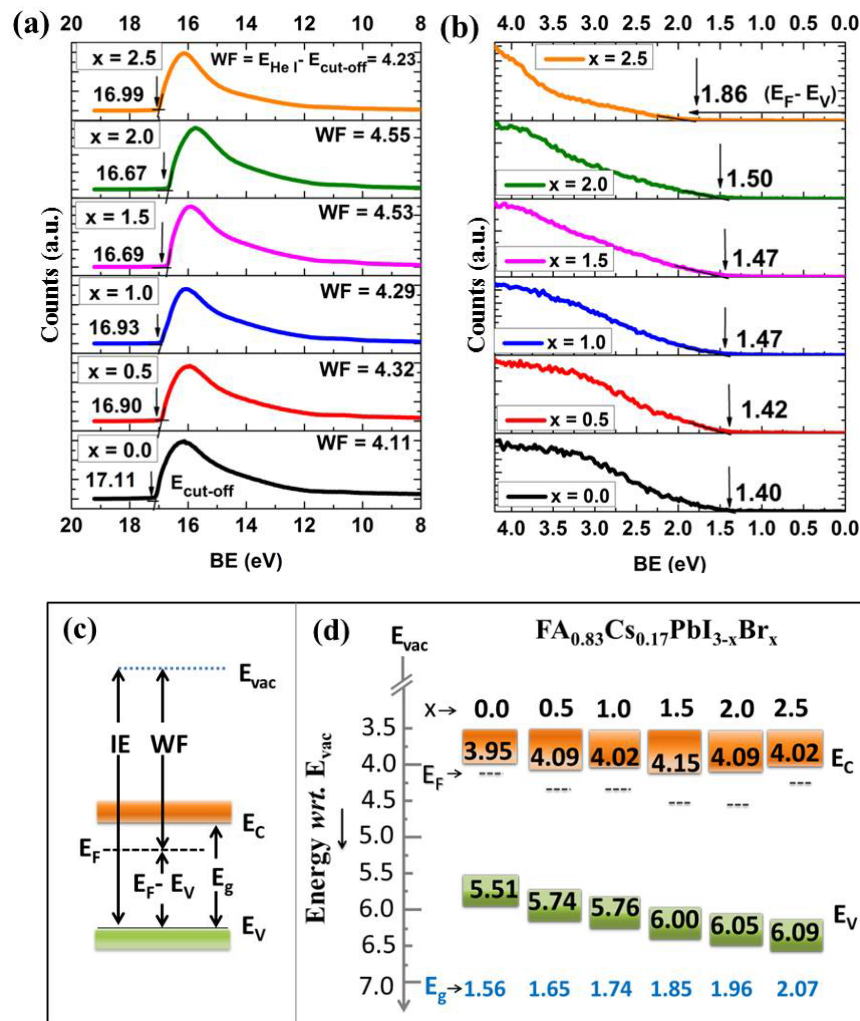


Figure 1. Electronic band structure of $\text{FA}_{0.85}\text{Cs}_{0.15}\text{PbI}_{3-x}\text{Br}_x$.