Band Structure Determination for Perovskites (PV-3)

A joint India-U.S. research consortium funded under the *Joint Clean Energy Research & Development Center (JCERDC)*

Scientific Achievement:

We determined the electronic band structure for $FA_{0.85}Cs_{0.15}PbI_{3-x}Br_x$ compositions.

Significance and Impact:

The bandgap-tunable $FA_{0.85}Cs_{0.15}PbI_{3-x}Br_x$, where x = 0.0 to 2.5, is suitable for tandem configurations.

Research Details:

- Hybrid perovskite films of $FA_{0.85}Cs_{0.15}PbI_{3-x}Br_x$ 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.

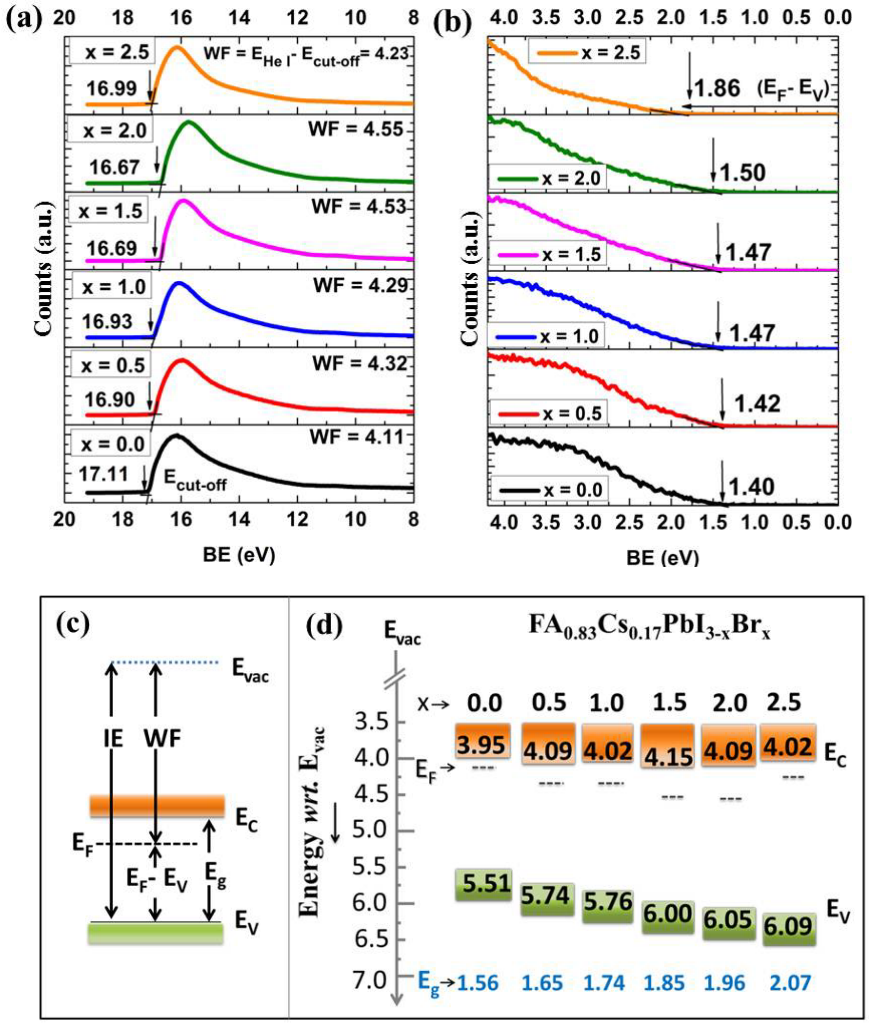

Figure 1. Electronic band structure of $FA_{0.85}Cs_{0.15}PbI_{3-x}Br_x$.

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). https://doi.org/10.1063/1.5016829

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