

## Efficient Green Emission From Ambient Processed All-Inorganic CsPbBr<sub>2</sub>I Perovskite Nanorods

**T. Paul<sup>1\*</sup>, B.K. Chatterjee<sup>1</sup>, N. Besra<sup>2</sup> and K.K. Chattopadhyay<sup>1, 2</sup>**

<sup>1</sup> School of Materials Science and Nanotechnology, Jadavpur University, Kolkata 700032, India.

<sup>2</sup> Departments of Physics, Jadavpur University, Kolkata 700032, India.

\*Email: [iamtufan@gmail.com](mailto:iamtufan@gmail.com) Mob. : (+91) 7872454720

### Abstract

The recent renaissance of photovoltaic research has empowered all inorganic perovskite materials to take the center stage thus leading to a plethora of interesting results. Here, a facile room-temperature high quality cesium lead halide perovskite (CsPbBr<sub>2</sub>I) nanorods has been synthesized. Surface morphology and crystallinity of the synthesized sample were examined by field emission scanning electron microscope (FESEM) and x-ray diffraction (XRD) respectively. For attain further confirmation on crystallinity high resolution transmission electron microscope (TEM) studied was carried out. Elemental composition of the sample was investigated via EDX analysis. These single crystalline nanorods crystallize in orthorhombic phase and exhibit strong photoluminescence emission at 551 nm with narrow FWHM value (~60 meV) and photoluminescence decay time of 22 ns. We believe, this facile synthesis protocol will pave the way for realization other perovskite nanorod and thereby their usage in several optoelectronic arena like as lasing, light emitting diode (1) and photo-detector (2).

**Keywords: Perovskites, cesium lead halides, nanorods, photoluminescence**

### References

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