

Perovskite Photodetector Fabricated by Pressure-induced Process

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Background

Halide perovskites are promising materials for various optoelectronic devices. Research efforts have been performed to fabricate a state-of-the-art perovskite-based device, however, the research society currently faces a technical limitation. Therefore, we investigate the novel methodology to further modify the optical properties by tailoring nanostructure of perovskite.

Results & Discussion

The target of this study is to increase the photo-detecting capacity by modifying a surface morphology of the perovskite film. Firstly, XRD analysis shows that imprinted perovskite film exhibits a change in structural properties, identified by an emergence of new crystallographic peak. Absorbance is also increased in the range of 300 to 800 nm, which can be a benefit for device's light-harvesting. Ultimately, on the basis of our findings, the fabricated photo-detecting device exhibits a significant increase in responsivity and detectivity.