

Thin film patterning of hybrid perovskite by vapor phase deposition and conversion on polymer aligned substrate

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Methyl ammonium lead iodide perovskite (MAPbI₃) has been attracting researchers because of its high-performance in photo-voltaic (PV) application, such as Solar cell, Light Emitting Diode (LED) and photo detector.

Most applications are using organic solution based recrystallized MAPbI₃ thin film. But, during synthesis, it is hard to achieve patterning in general method.

Here, we first report patterning MAPbI₃ thin film on polymer aligned substrate by vapor phase deposition and conversion at a relatively low temperature which polymer can endure during process.

MAPbI₃ thin film patterning will solve the structural limitations of applications, but also enables the production of uniform, high-purity wafer-scale perovskite thin films through vapor phase synthesis.