Pressure Induced Crystallization of Halide Perovskites for Efficient and Stable Devices

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As a strategy for enhancing moisture stability of organic-inorganic halide perovskite (OIHP)-based photovoltaics, pressure induced crystallization was utilized. With pressure-induced crystallization process, grain boundary (GB), focused as humidity penetration channel, was modified. In this study, we revealed the effect of mold geometries on OIHP humidity stability. The crystallographic analysis supported the GB healing effect and OIHP fabricated with pressure-induced crystallization method was applied into perovskite photovoltaic devices, which exhibited enhanced moisture stability.