

(hydrothermal synthesis). The smaller value of J_{sc} is associated with a lower charge transfer rate in the MAPbI₃→ZnO film (electrochem. synthesis). A smaller value of V_{oc} for MAPbI₃-ZnO sample (hydrothermal synthesis) is associated with a high recombination rate at voltages $U > 0.4$ V compared to cells based on ZnO (electrochem. synthesis).

A smaller concentration of defects in the perovskite-ZnO film (hydrothermal synthesis) leads to lesser dark currents in the cell. High leakage currents at voltages exceeding 0.4 V indicate the occurrence of additional recombination processes at high voltages. In this case, no perovskite-ZnO (electrochem. synthesis) of these recombination processes is observed.

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