Short Communication

Electrodeposition of ZnO Nanorods as Electron Transport Layer in a Mixed Halide Perovskite Solar Cell

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ZnO nanorod arrays were prepared by electrodeposition from a zinc nitrate precursor on seed layers of the oxide fabricated by spin coating on fluor-tin-oxide (FTO) covered glass substrates. The morphological, structural, and optical properties of the arrays were analyzed by scanning electronic microscope, X-ray diffraction, and ultraviolet-visible spectroscopy. The nanorods were used as electron transport material in CH₃NH₃PbI_{3-x}Cl_x sensitized perovskite solar cells that were characterized by X-ray diffraction. The performance of the cells was investigated using current-voltage measurements. They showed an open circuit voltage of 0.85 V, a short-circuit current of 6.8 mA cm⁻², a fill factor of 0.46 and 2.4% power conversion efficiency under 1 sun of illumination.

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