

# The Study of Different Electron Transporting Materials on the Optical Performance of the Perovskite Solar Cells

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## Abstract

For investigation of the processes occurred in solar cells, lots of optical and electrical modes are used. In this study, optical simulation of perovskite solar cell based on transfer matrix formalism using complex refractive index (as a function of wavelength) of multilayer structure is presented. In other words, optical properties such as, optical absorption, energy dissipation and incident electrical field distribution of the perovskite solar cells with different electron transporting materials by matrix method are studied. Then, in order to obtain the optimum thickness of the active layer, the effect of it's thickness on the short-circuit current density are investigated and the optimum structure is selected.

**Keywords:** Current density, Transfer matrix, Perovskite solar cell

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