

عنوان مقاله:

Comparing the performance of Organic-inorganic hybrid tandem multijunction solar cells of different organic bulk thicknesses

محل انتشار:

کنفرانس بین المللی یافته های نوین پژوهشی در شیمی و مهندسی شیمی (سال: 1394)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Abdolnabi Kosarian - *Shahid Chamran University of Ahvaz*

Mehrdad Kankanan - *Shahid Chamran University of Ahvaz, eng_kankanan@yahoo.com*

Mohamad Ali Khalafi - *Shahid Chamran University of Ahvaz*

خلاصه مقاله:

In this study, J-V curves of a-Si:H/PCPDTBT:PC70BM hybrid tandem solar cells were simulated using a modified drift-diffusion model, and the influence of the thickness of the organic blend layer was investigated. The results of the simulations were compared with experimental data from literature. It is shown that as the thickness of the blend layer increases, the fill factor and the voltage corresponding to maximum power point decrease whereas the maximum power point and the short circuit current density of solar cell increase up to thicknesses of 60 nm and 138 nm respectively. Finally, the modified organic solar cell was used as second sub-cell and the power conversion efficiency increased from 1.90% to 2.1% in simulation.

کلمات کلیدی:

hybrid tandem solar cell, Koster method, blend layer thickness, PCE

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/412608>

