

## عنوان مقاله:

Optimizing CZTS solar cell and investigating the effect of temperature on its efficiency using scaps-1d software

## محل انتشار:

سومین همایش بین المللی تحقیقات در علوم و فناوری نانو (سال: 1402)

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## خلاصه مقاله:

In this article, we investigate the performance of CZTS thin film solar cell with ZnO/Cds/CZTS structure. The cost of making solar cells in the laboratory and checking it requires a lot of money and time, that's why we used the scaps-1d software to conduct this review theoretically. At first, we simulated a prototype of the solar cell structure, and then by changing the thickness of the CZTS and Cds layer, we obtained the best thicknesses, and then we simulated our optimized solar cell by comparing the efficiency of two different modes for the desired structure. , we observed a nearly ۴% increase in efficiency, and then by changing the temperature parameter, we checked its effect on the efficiency and it was observed that the efficiency increases with the decrease in temperature and the efficiency decreases with the increase in temperature.

## کلمات کلیدی:

Thin film solar cell, CZTS, scaps-1d, solar cell simulation, efficiency increase, temperature effect

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1692720>

