

عنوان مقاله:

Design and construction of single cation perovskite solar cell and its stability in a solar cell system and their efficiency

محل انتشار:

هفتمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1402)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Mehran Hosseinzadeh Dizaj - *Department of Electrical Engineering, Central Tehran Branch, Islamic Azad University*

Shahed Chehrdoust Shishvan - *Department of Electrical Engineering, Central Tehran Branch, Islamic Azad University*

Fatemeh Shahnavaaz. - *Department of chemistry Engineering, Central Tehran Branch, Islamic Azad University*

خلاصه مقاله:

During the last few years, the construction of new generation perovskite solar cells based on perovskite absorbent materials has grown greatly compared to other photovoltaic cells. The reason for this is the rapid growth of cell efficiency, easy manufacturing method and low cost. Of course, in addition to these advantages, there are limitations such as low stability and high sensitivity to humidity, as well as their productivity during the usable period, which has provided attractive fields for work. In this article, a $\text{CH}_3\text{NH}_3\text{PbI}_3$ single-cation perovskite solar cell with dimensions of $1.4\text{cm} \times 1.4\text{cm}$ and an active area of 9.9cm^2 has been made and its performance has been carefully analyzed in different time intervals. The results show that the maximum open circuit voltage obtained is about 0.9V , the maximum short circuit current density is 11.2mA/cm , the highest efficiency is 0.9% and the maximum filling factor is 9.11 . The voltage of these cells has been analyzed immediately after the gold electrode coating and also 44 and 44 hours after (that). (1,2)

کلمات کلیدی:

nanostructured solar cells, perovskite, stability, productivity

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1682013>

