CFD Simulation of transparent conductive films with high conductivity for use in photovoltaic cells

محل انتشار:
konferans bin mellii b-zohesh dar mendingi, علوم و تکنولوژی (سال:1394)

تعداد صفحات اصل مقاله: ۶ صفحه

نویسندگان:
Foad Farivar - MSc of Chemical Engineering, Chemical Engineering Department, Amirkabir University of Technology, Tehran 51851-1154, Iran
Hossein Amani daz - MSc of Applied Chemistry, Department of Chemistry, Amirkabir University of Technology, Tehran 51851-1154, Iran

خلاصه مقاله:
The potential drop due to sheet resistance of transparent conductive Films (TCFs) in photoelectrods is one of the major problems in construction of a larger photoelectrods. The potential drop across the photoanode (even on a small area) is found to be sufficient to drop the potential of a large part of the photoanode below the minimum potential required for photoelectrochemical oxygen evolution. This problem causes a significant decrease in the photocells efficiency. In this paper, the use of thin golden grids on the TCFs is proposed to address this problem. COMSOL Multiphysics (1.4b) software is used to simulate the potential and current profiles.
The simulation results show that the potential drop will decrease significantly by applying the golden grids on the F-TO and I-TO, TCFs

کلمات کلیدی:
CFD Simulation, Photovoltaic cells, Transparent Conductive Films

لینک ثابت نت مقاله در بایگان سیویلیکا:
https://www.civilica.com/Paper-RSTCONF01-RSTCONF01_036.html