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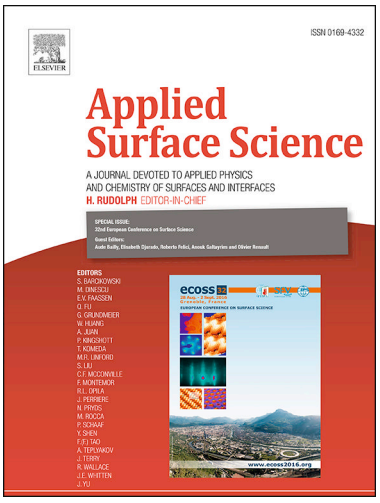

Full Length Article

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Enhanced photovoltaic performance of Sb_2S_3-sensitized solar cells through surface treatments

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Abstract

Efficient antimony sulfide (Sb_2S_3)-sensitized solar cells were obtained by a sequential treatment with thioacetamide (TA) and 1-decylphosphonic acid (DPA). Compared with the untreated Sb_2S_3-sensitized solar cells, the power conversion efficiency of the treated Sb_2S_3 solar cells was improved by 1.80% to 3.23%. The TA treatment improved the Sb_2S_3 films by reducing impurities and decreasing the film's surface defects, which inhibited the emergence of recombination centers. The DPA treatment reduced the recombination between hole transport materials (HTMs) and the Sb_2S_3.