

Obtaining, properties and application of nanoscale films of anodic titanium dioxide on Ti-Al films for perovskite solar cells

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Abstract: The modes of synthesis of TiO₂ films with semiconducting
properties by the method of electrochemical oxidation of Ti are
proposed for use as an electronic transport layer of perovskite solar cells.
To anodize the titanium film, the electrolyte based on a mixture of a 2 %
aqueous solution of oxalic acid and a 1 % aqueous solution of sulfamic

acids was used. The results obtained showed that Al and Ni have injection contacts to the anodic TiO₂ films. Nanoscale titanium oxide films have low resistivity and rectilinear and symmetric I - V characteristic branches. Annealing of titanium oxide films leads to a significant decrease in the resistivity.

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