

Nanostructured surfaces

Transmittance of the chemically nanostructured protective cover of photovoltaic cell study at STC

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The special solar glasses used as protective cover [1, 2] of photovoltaic cell are the matter of presented investigations. Thanks to the use of nanotechnology accomplishments and the introduction of morphological changes of the glass surface implemented in the manufacture of solar glasses, D.A. Glass Company [3], extremely high performance light transmittance of such samples were achieved.

We're able to design transmittance of these special solar glasses with use the solar cell simulator QuickSun130CA, Endeas Oy, during registration the I-V characteristics of c-Si cells covered or not the special chemically nanostructured glasses at Standard Test Conditions (STC).

Several selected samples of solar glasses, D.A. Glass Company has been tested. Antireflection properties and increase the transmittance coefficient at the visible range of electromagnetic irradiation spectrum [3] permit to use such type of solar glasses as a promising coat for solar cells and photovoltaic systems.

The study of the relative changes of the characteristic electrical parameters of photovoltaic cells [4] (short-circuit current I_{SC} , and the maximum power point P_{MP}), with and without special coats are presented in this paper.

1. Photon Management in Solar Cells *Ed. Ralf B. Wehrspohn, Uwe Rau, Andreas Gombert*, VILLEY VCH, Weinheim 2015
2. *Alan Everett Riba, C.M.H. Barritt*, Mitchel's Building Series, V ed. Routledge 2013
3. www.daglass.pl/produkty/szklo-dekoracyjne
4. *Malgorzata Pociask-Bialy, Kornelia Kalwas* Transmittance of selected nanostructurized solar glasses designated via relative change in electrical parameters of silicon solar cells, EPJ Web of Conferences 133, 02001 (2017)