

THERMAL STRESS ANALYSIS AT ENCAPSULATION AND BACKSHEET MATERIALS FOR PV-MODULES

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Abstract/Summary:

In the last years, because of the higher irradiation, an increase of installed PV systems situated close to the equator line could be observed. As these regions are often characterized by an arid climate, sand and dust deposition on the solar modules can reduce significantly the predicted energy yield. Closer to equator the soiling effect becomes also more incisive because of the lower tilt angle of the installed modules. Therefore, in desert regions, several cleaning procedures are implemented. The cleaning is generally performed by mechanical systems, which may affect the lifetime of the modules. For the investigation of the specific impact of different cleaning procedures on the module performance, in this work different accelerated cleaning tests are performed. The impact on the modules is then evaluated through performance and electroluminescence measurements. Moreover, reflectance measurements are performed in order to test the effect of the cleaning on the antireflection coatings and on the glass surface of the modules. Accordingly, the suitability of the investigated coatings for desert applications is also tested. The resistivity of different coatings on glass is then compared through an abrasion test.

For more information on the topic please contact the R&D Team of PI Berlin.

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