



Degradations of silicon photovoltaic modules: A literature review

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Résumé en anglais	<p>PV modules are often considered to be the most reliable component of a photovoltaic system. The alleged reliability has led to the long warranty period for modules up to 25 years. Currently, failures resulting in module degradation are generally not considered because of the difficulty of measuring the power of a single module in a PV system and the lack of feedback on the various degradation modes of PV modules. It should be noted that consumers are becoming more and more interested in the reliability and lifetime of their PV system considering economic issues. Reliability and lifetime of a PV system depend mainly on the energy performance of modules and their different degradation modes. Accordingly, research must more and more focus on photovoltaic modules degradation. This paper presents a review of different types of degradation found in literature in recent years. Thus, according to literature, corrosion and discoloration of PV modules encapsulant are predominant degradation modes. Temperature and humidity are factors of PV modules degradation in almost all identified degradation modes. However, despite the identification of PV modules degradation modes, it is still difficult to study them in real conditions. Indeed, there must be long periods feedback experiences to study the frequency, speed of evolution and impacts of various PV modules degradation modes on energy output. In this paper, models associated with the PV modules degradation are presented. These models can help to overcome the long-term experiments obstacle in order to study PV modules degradation under real conditions.</p>
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- [1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=9217>
- [2] <http://okina.univ-angers.fr/abderafi.charki/publications>
- [3] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=15239>
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- [7] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=10702>
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- [10] <http://okina.univ-angers.fr/publications/ua6524>
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