The study of the photovoltaic cells parameters in concentrated sunlight

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Abstract

The photovoltaic cell parameters are very important for researchers and manufacturers to improve the efficiency of these devices. There are many studies for these parameters in sunlight at one sun or at some suns, but few studies at hundreds or thousands suns [1,2]. In this paper is presented the study of all important parameters of three types of photovoltaic cells under concentrated sunlight.

The study of the photovoltaic parameters was done in concentrated sunlight at the Solar Research Facility Unit of the Weizmann Institute of Science, Rehovot, Israel. The experimental system has the following components: solar concentrator system, the robot system, the acquisition system and the I-V characteristic device, Fig. 1 [3,4].

All important parameters of the photovoltaic cells were determined and analyzed. In Fig. 2 is presented the behaviour of the series resistance, Rs, which decrease with the illumination.

Fig. 1 The experimental set-up

Fig. 2 The dependence of series resistance vs. irradiance

References


