

Study the Impact of the Ideality Factor and the Dust on the Performance of Solar Panels

This paper proposes to evaluate the influence of dust on the realization of PV modules, representing the real amount of dust on the glass surface of the solar panel and its input as an influential factor using the mat lab simulation and studying its impact and expected losses on the output of solar panels. The Renewable Energy Research Center (RERC) at University of Anbar has put in place a research project in order to investigate the influence of dusty weather conditions on the PV module characteristics. Various rates of dust and clean panel were used as the accurate evaluation of output power. The results are extracted and simulated by the Matlab software. The information for dust tasters of different weights with conversion in power loss in a solar panel at four values of Ideality factor (A) of 0.8, 1, 1.2, and 1.4 has been applied. The outlet's expression as the performance of this solar panel is widely declined, by changing the quantity of dust accumulated homogeneously on the surface of the PV modules and the Ideality factor (A).