

Characterization of dust materials on the surface of solar panel

ABSTRACT

Dust is particles that come from the environment such as soil and pollution. Dust has become one of the major issues with regards to the performance of a solar panel. One of the contributing factors on solar performance is accumulated dust on the surface of solar panel which comes from the pollution and industrial area. In this paper, we investigate the dust materials on the surface of a Fix Flat solar panel collected using chemical precipitation method. In order to identify the dust material, size, shape and weight, we used scan Electron Micron and Energy-Dispersive X-ray spectroscopy. The results from this research show that most of the dust, which was accumulated on the surface of the solar panel, are siliceous, alumina and cement which come from construction around the site of the solar panel. There is also an evident of soil that comes from the highway and a little bit of contaminants from bird droppings.

Keyword: Dust materials; Environmental losses; Fix flat photovoltaic