

Lunar Exploration (3)
Lunar Technologies (2B)

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EFFECTS OF LUNAR DUST ON MAIN PARAMETERS OF SOLAR CELLS

Abstract

The lunar dust is one of the factors that would reduce the performance and the service life of solar cells of Lunar-based Solar Power. To predict the degree of its performance decay, a theory model was built to describe the main parameters (short-circuit current, open-circuit voltage, maximum output power) changes of solar cells based on the analysis of the occlusion of the covering lunar dust. An experiment has been carried out through cover the solar cell with CLRS-1 lunar dust simulant which was with different mass, and it shows a consistent relationship between theory and experimental result.