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Solar Photovolatic Panel Cleaning System

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Abstract: *The technical seminar is about the design and development of a solar panel cleaning system. The main object of this design prototype is to clean the solar panel using an electrical mechanism, such that efficiency or quality of solar panel is not compromised. As a matter of fact, gulf region - especially Saudi Arabia- are facing a lot of dust storms and the solar panels need to be cleaned frequently. If task is performed manually, it will be very costly and time consuming. Water sprinklers and a special wiping material shall be used in the conceived mechanism design to insure quality of cleaning.*
Electrostatic cleaning equipment has been developed to remove dust from the surface of soiled solar panels. When a high AC voltage is applied to the parallel screen electrodes placed on a solar panel, the resultant electrostatic force acts on the particles near the electrodes. The reciprocatory motion of the particles between the electrodes arises due to the alternating electrostatic force, where some particles pass through the openings of the upper screen electrode and fall downward along the inclined panel owing to the gravitational force. We demonstrated how dust is removed efficiently from the panel surface.

Keywords: Electrode; solar panel; Electrostaticforce ; power.

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