Current status of research on cleaning dust from photovoltaic panels

---

This review consolidates four decades of research (1983-2024) on dust mitigation for photovoltaic systems, categorizing strategies into four key areas: preventive measures, dust ...

The major challenges, limitations and strengths of each PV cleaning approaches are discussed, with the review establishing that dust accumulation significantly influences the PV power ...

The authors review the current research on the subject, discussing the deposition of dust on PV modules, the impact of dust on efficiency, methods of dust removal, and ways of mitigating the ...

Overall, the research results of this work are important for the further development of electrostatic dust elimination technologies used in solar panels.

This study presents a comprehensive review and analysis of the influence of dust deposition on PV performance, covering its optical, thermal, and electrical impacts.

Dust accumulation on solar photovoltaic (PV) panels significantly impairs their performance by blocking sunlight, leading to a reduction in energy output.

The data for dust samples at different weights with changes in maximum power point (MPP) of PV panel has been collected using the artificial solar irradiation source system.

Dust accumulation significantly affects photovoltaic (PV) power generation efficiency and has become a critical issue in PV power plant operation and maintenance. This study conducted a 1 ...

Dust repulsion via charge induction is an efficient way to clean solar panels and recover power output without consuming any water. However, it is still challenging to remove particles of ?30 µm and ...

Specifically, the accumulation of dust and the rise in internal temperature lead to a drop in energy production efficiency. The primary issue addressed in this paper is using mathematical modeling to ...

Web: https://moritz-kenk.eu