# There are debris on the solar module cells



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Are silicon-based solar cells prone to material degradation?
Annual power degradation ranges from 0.5%-3.3%,calling for better materials and mitigation strategies. This literature review systematically identifies the primary material degradation mechanisms impacting silicon-based solar cells,which constitute over 90% of the global photovoltaic (PV) market.

Do solar panel design factors reduce the impact of cracked cells?
BrightSpot Automation, L.L.C.; Westford, M.A. Solar panel design factors to reduce the impact of cracked cells and the tendency for crack propagation. In Proceedings of the NREL PV Module Reliability Workshop, Denver, CO, USA, 4 February 2015. [Google Scholar]

Why do solar cells fail?
Failure of the solar cell mainly occurs due to the very thin profile of the silicon wafer. These thin wafers are very brittle and are prone to cracking easily during manufacturing or transportation. Generally,microcracks of the cell cannot be detected by the naked eye. Consequently,they may spread and distribute to other cells in the module .

Why do PV modules deteriorate so much a year?
Nonetheless,all twenty PV modules experienced nearly the same degradation rate,at 1.04% per year. A reduction in light transmittanceis the primary failure that occurs in PV glass and is potentially caused by glass breaking or shattering or by harsh weather conditions like ultraviolet exposure and dust accumulation [56,57].

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