Perovskite Tracking Solar Cell (PTSC)

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Energy is the force needed to do work or induce change. Without it, no work or change can be done. Since the late 1970s In Egypt, Energy's absence in a clean, renewable, sufficient form rendered the country's economy and society work less and changeless. And while Egypt lies on one of the world's solar hotbeds, Silicon solar cells, the current market solution, are extremely expensive, need huge thermal energy and emit tons of CO2 in their manufacturing process. Herein, we reported a new type of photovoltaic technology called Perovskite Solar Cells (PSCs). with Power Conversion Efficiency (PCE) exceeding 20% and cost reductions, the idea of the PTSC project is making an active layer of perovskite (CH3NH3PbI3) through reusing old car batteries by extracting lead element (Pb) anode and lead oxide PbO2 cathode and using them in the fabrication of this silicon-alternative in an eco-friendly process. to increase the virtual age of the cell, it was coated with a Polydimethylsiloxane PDMS layer that prevents the 50% degradation of perovskite performance resulting from its surface contamination. A Solar Tracking System was made to make the PSC follow the sun. consequently, solar radiation is always perpendicular on the PSC achieving maximum efficiency. Drawing on the collected operation data, the PTSC's projected output will help compensate for the energy gap in Egypt and many other third world countries if implemented nationwide. Further research on synthesizing elastic PSCs is being conducted so that a personalized form of the technology can be integrated into our daily lives. No questioning remains, however, about the success of the PTSC system as a whole.

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