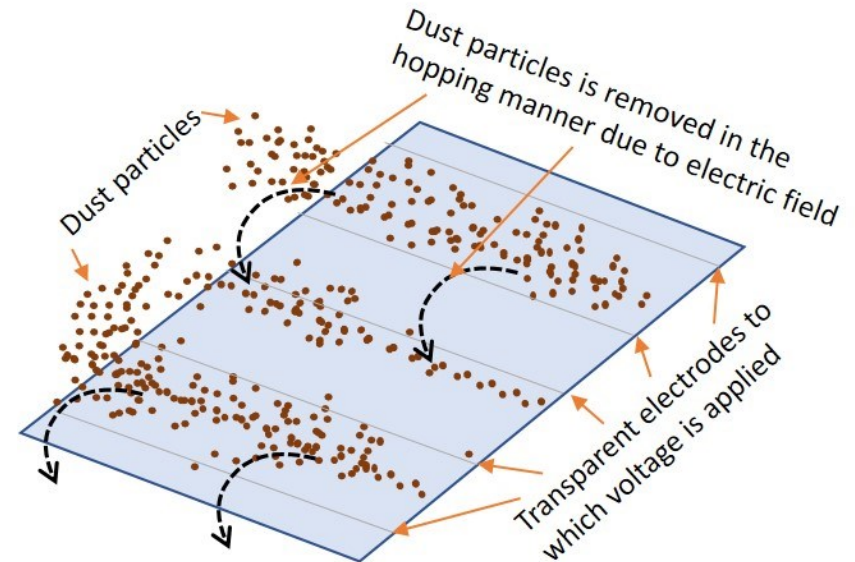


**Problem:** Energy loss due to dust is typically up to 25% in the US desert and up to 100% during the dust storms in the Middle East and North Africa region dust storms. Existing cleaning methods incur high costs in terms of water, labor and damage risk.



When a voltage is applied to the electrodes deposited on the solar panels, a strong electric field removes dust particles.

**Solution:** Our self-cleaning technology utilizes Electro-Dynamic Shield to remove dust particles from the solar panels. The panels are embedded with >99% transparent electrodes which after application of a voltage, creates a strong electric field that cleans the surface dust.

**Intellectual Property:** Patent-Pending App No. PCT/ US2018/ 50321 (Exclusive Licensee from SUNY RF). R&D 100 Award.

### Value Proposition:

- (1) Recover up to 98% of energy loss caused by dust
- (2) Prevent revenue loss of \$73M over 25 years for a typical 100 MW solar plant and saves 1M gallons of water per wash.
- (3) Lower the current Levelized cost of electricity (LCOE) by 5.3%
- (4) Power self-cleaning by consuming only <0.002% of solar panel output per day.

### Goals:

- 1) Go Demo Day - Perform functional improvement in the prototype to demonstrate above 98% recovery of lost power due to dust on the panels and conduct long-term durability testing of the prototype at NREL.
- 2) Half-Year Day - Overcoming challenges of technology integration into the solar panel and demonstrating above 98% recovery of lost power due to dust deposition on the panels
- 3) One-Year Goal - Demonstrate 98% recovery of lost power due to dust when testing an actual size panel (39" x 77" sq inch) integrated with our technology

### Partners (letters of support attached):

National Renewable Energy Laboratory (NREL)  
Toledo Solar  
BMR Energy