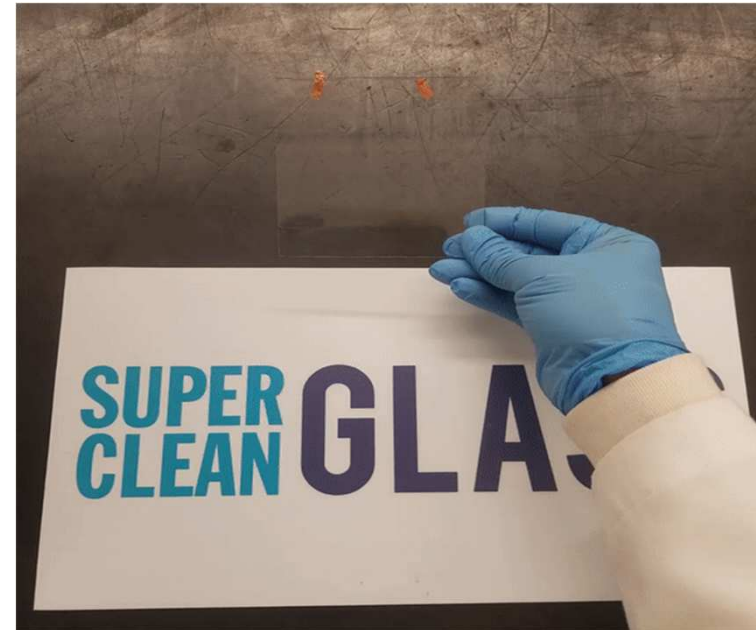


**Problem:** Energy loss due to dust can be up to 25% and can go up to 100% during the dust storms in the Middle East and North Africa region. The existing cleaning methods incur high costs, while often being time and labor intensive.



**Technology Demo**

**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 of 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) Set Demo Day - Overcoming challenges of scale-up manufacturing in partnership with Toledo Solar and achieving up to 90% dust removal efficiency for a commercially relevant prototype (6" x 6" sq inch)
- 2) Go Demo Day - Overcoming challenges of technology integration into the solar panel and demonstrating above 98% recovery of lost power due to dust deposition.
- 3) One-Year Goal - Demonstrating 98% recovery of lost power for a full size solar panel (39" x 77" sq inch) by conducting field experiments with BMR Energy and reliability testing with NREL.

### **Partners (letters of support attached):**

National Renewable Energy Laboratory (NREL)  
Toledo Solar  
BMR Energy