



Marichin

Fuelling
Green
Technology



MARICHIN TECHNOLOGIES

NovusCoat

A NanoTech Hydrophobic Coating

ABOUT US

Marichin Technologies has been set up by a group of professionals with a vision to bring cutting-edge & State of the art technologies to the Renewable energy sector..

By introducing innovative & cutting edge technologies, we intend to deliver significant advantage & increase overall efficiency and hence Profitability of our customers.

Marichin brings **NovusCoat** ,a highly super hydrophobic nano coating for Solar Panels.

NovusCoat has been developed by a multi-disciplinary team of Scientists and application technologists at the International Advanced Research Centre for Powder Metallurgy and New Materials (**ARCI**), a premier Organisation for R&D.

CHALLENGES

Soiling of Panels or dust accumulation on Panels is a huge concern and issue with Solar Plant Owners. Most of the Plants being located in dry, arid areas are prone for high dust environment. Dust, pollen & other particles tend to accumulate over the Panels

Soiling increases cleaning & maintenance costs and reduces Power generation efficiency. It is estimated that the Power generation in Solar Panels drops by 30% to 40% in high dust environments, if not cleaned regularly.



- ☒ The dust laden Panels have to be cleaned frequently to maintain the efficiency. This cleaning requires a huge quantity of water and man-hours of Labour.
- ☒ Borewell water, normally used to wash Panels, has a high content of Calcium, Magnesium & other minerals. When the water evaporates from the surface of the Panels, these minerals get deposited. They are very hard to remove since they bond with the Panel and also adversely affect the performance efficiency of the Panel.
- ☒ At times in very dusty environments, intensive & frequent cleaning cycles are required with cleaning agents & other equipment, and this represents a huge cost to the Owners.

KEY FEATURES

Coating can be applied in normal ambient temperature

Highly transparent coating – no loss in Transmittance/ Power conversion efficiency after Coating

Super Hydrophobic property; > 110° water contact angle

High weather stability; can withstand long duration accelerated test – IEC 61646

High mechanical stability

No adverse effect on anti-reflective coating of Panels.

Very low dust deposition compared to bare Panels

Easy to coat; just spray & wipe

Increase in generation efficiency is estimated more than 2.0%

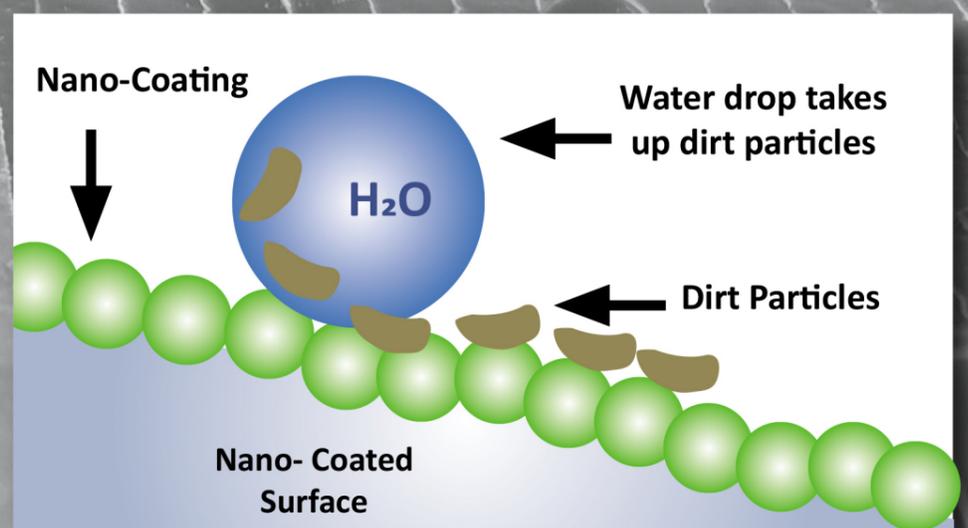
Product tested at C.P.R.I., for power conversion & transmittance.

TECHNOLOGY

Novus Coat, based on ARCI technology is a high performance Coating using nano-particles. It has a super hydrophobic property, with a water contact angle greater than 110°. The hydrophobic property makes water droplets run off the coating and not adhere to the Panel.

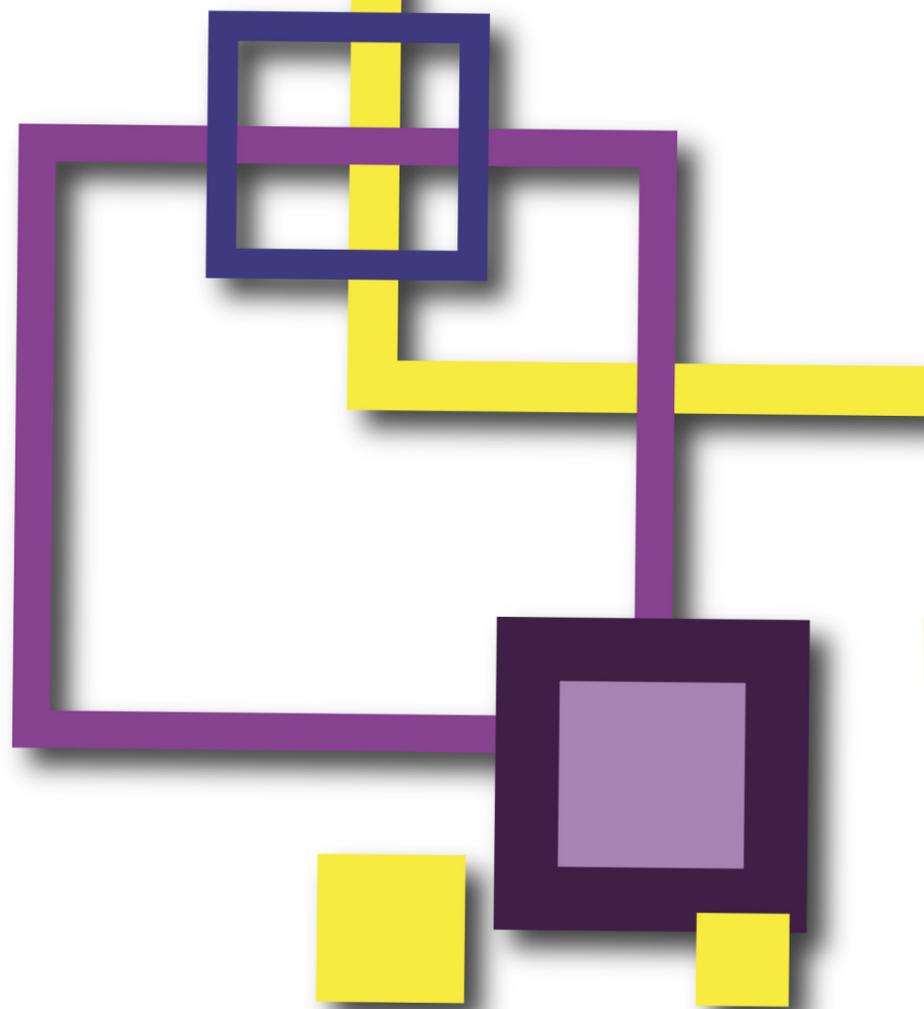


The surface of a solar panel having super-hydrophobic coating replicates lotus leaf features. The sprinkling of water effectively washes off the dust and other contaminants from the panel surface, similar to that of a lotus leaf.



BENEFITS

- 1) Less water required for a cleaning cycle and the cleaning frequency can be extended. Faster cleaning & less consumables required. Hence, lesser O&M costs.
- 2) Soiling rate on Panels can be significantly reduced.
- 3) No loss in transmittance; hence optimum power conversion efficiency
- 4) Highly durable & long lasting
- 5) It can prevent reduction in efficiency of Panels due to Soiling



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