

# Self Cleaning Panels ZNSHINE Solar Australia

[au.znshinesolar.com](http://au.znshinesolar.com)



## Have you ever got your Solar Panels Cleaned, or even thought of?



-  **Soiling is a type of Shading**
-  **Grime and bird droppings doesn't need to cover an entire panel to have an effect**

# Ways and Means to Clean solar panels



- **DIY**
- **Professional Clean Services**
- **Machinery**



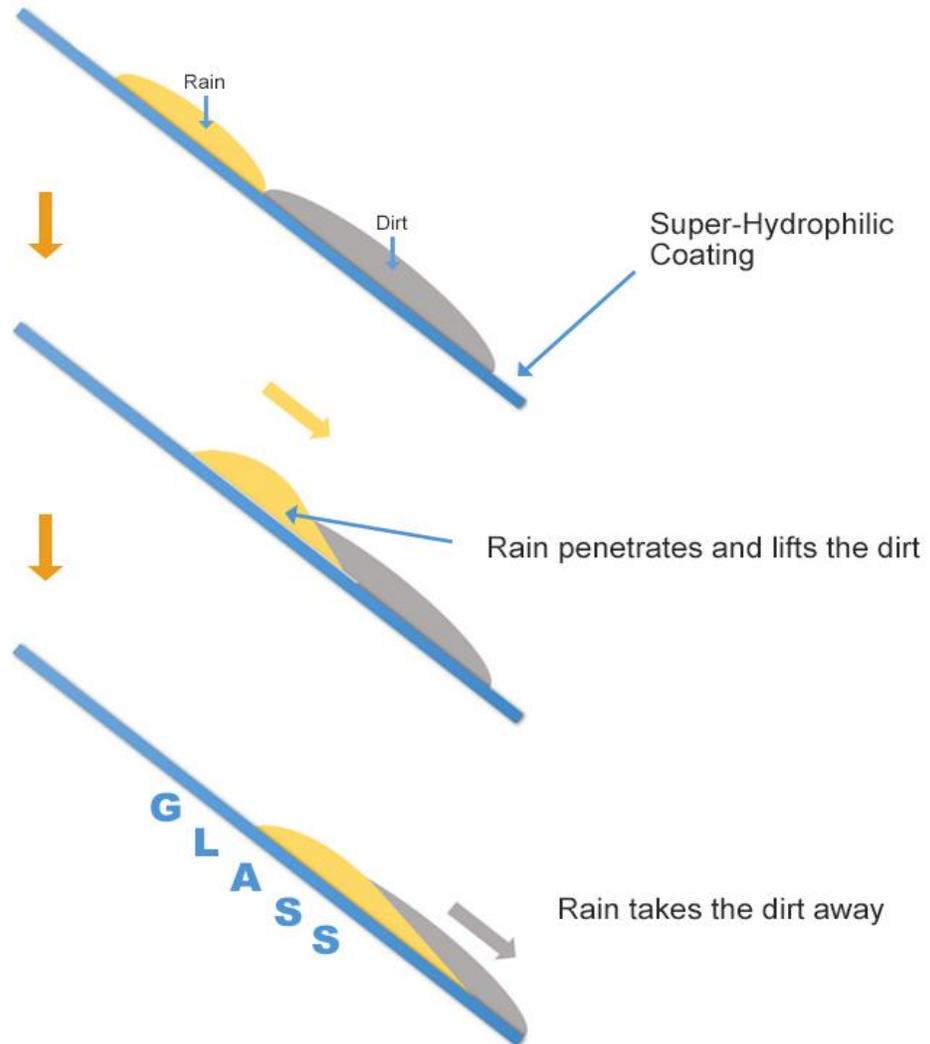
- **Safety First: hard hat and safety harness**

- **Task of solar panels cleaning is not worth your life!**



- **Robotic cleaners to remove dirt without water**

- **Consider Cost and Viability**

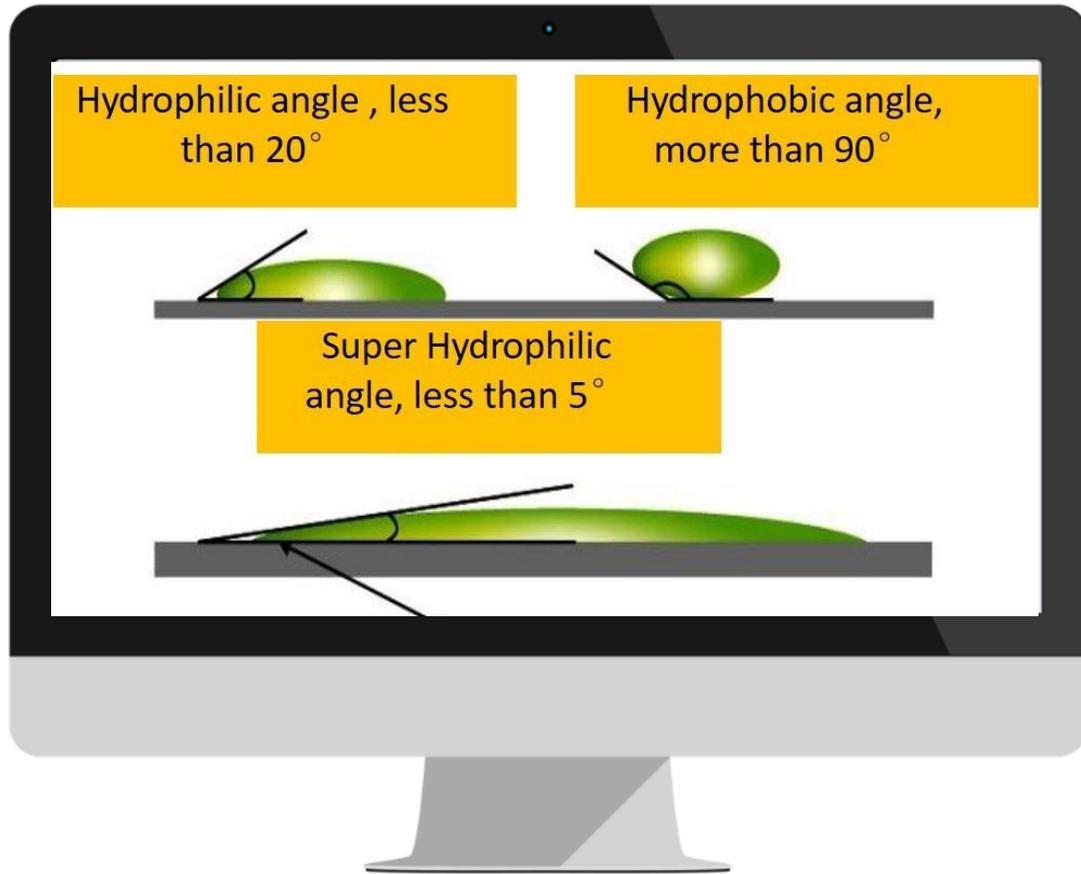


## ➤ Technical Innovation Graphene Coating on front glass

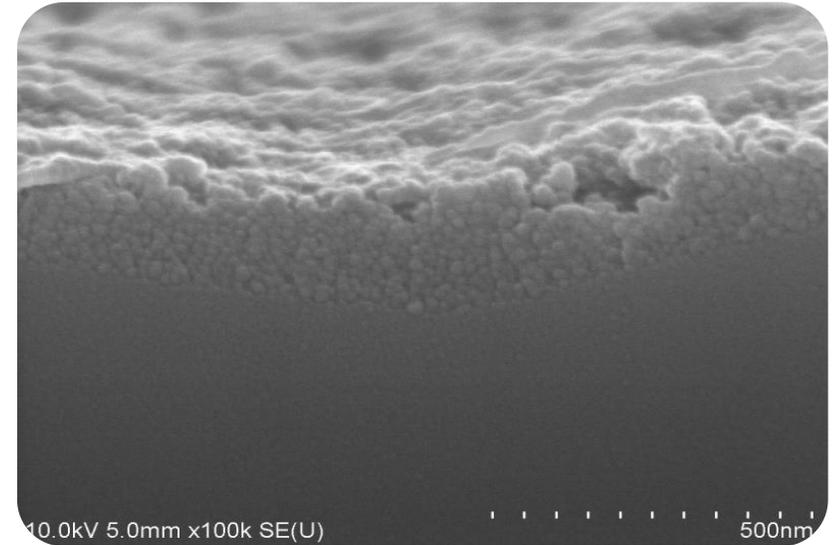


- **Super Hydrophilicity** –  
makes raindrops work harder  
cleaning solar panels

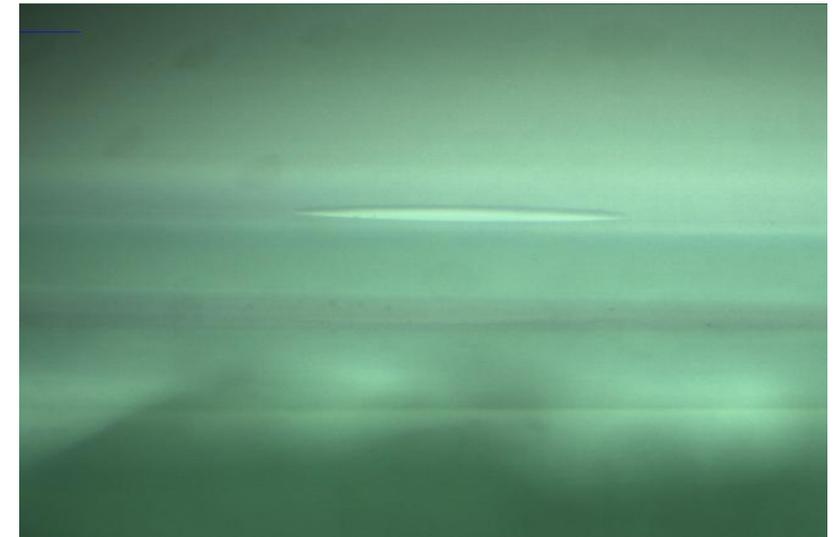
# What is Super Hydrophilicity?



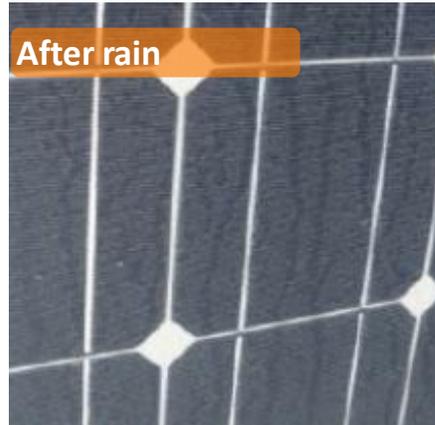
**Graphene coating under Microscope**



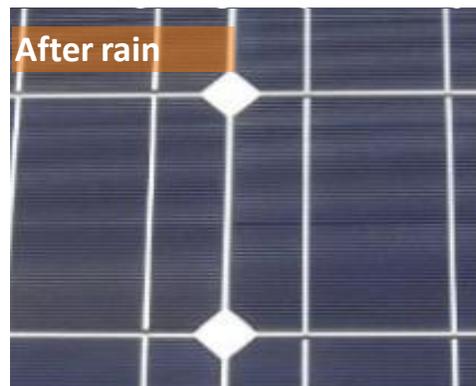
**Hydrophilic Angle 4.5°**



## Normal solar panel



## Graphene coating solar panel



## Compared



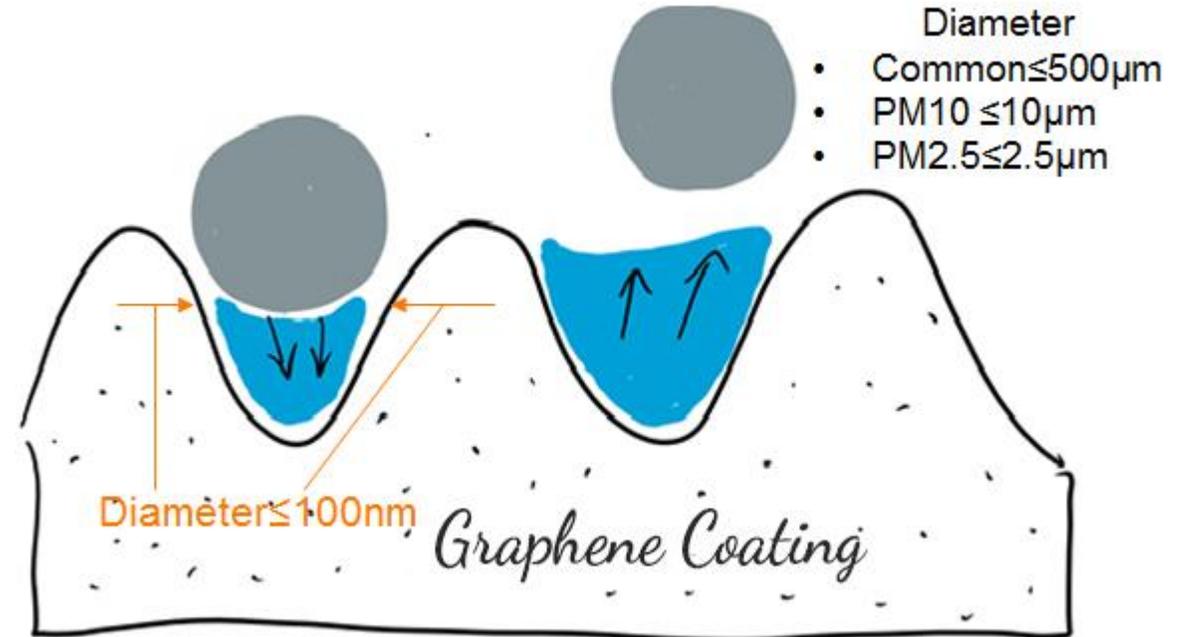
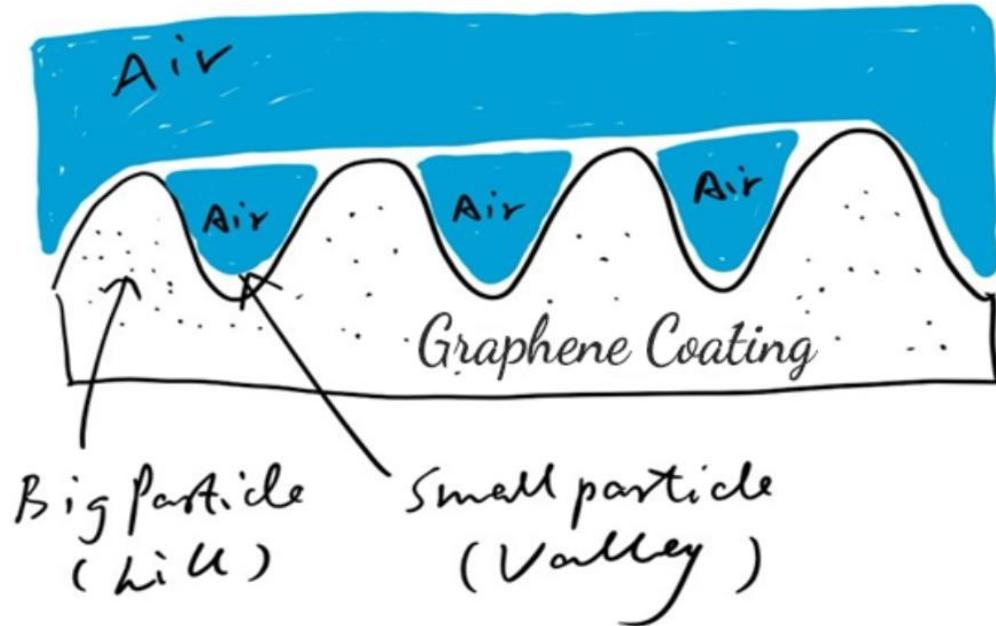


- **Technical Innovation**  
Graphene Coating on front glass



- **Dust Repelling feature** –  
make dust and sand Hard to Hold  
onto the surface;  
and if do, Easier to blow away

# Anti Dust - Amusing Principle

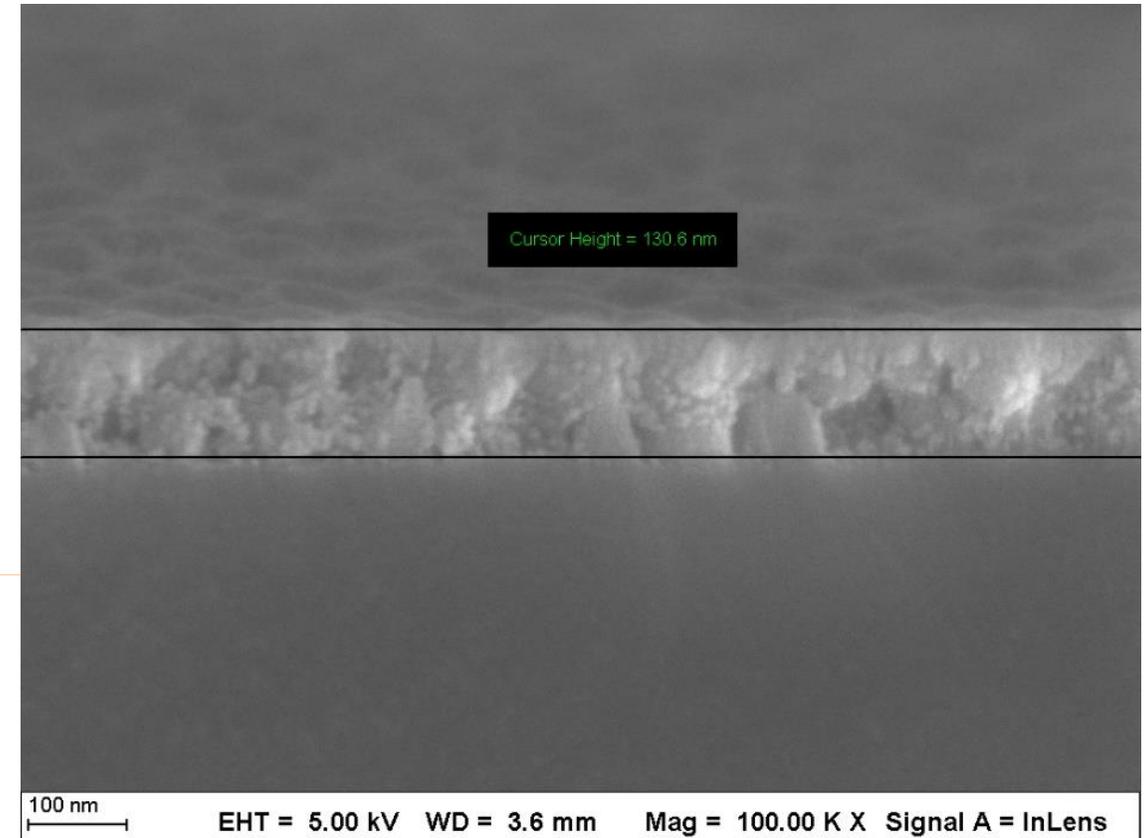
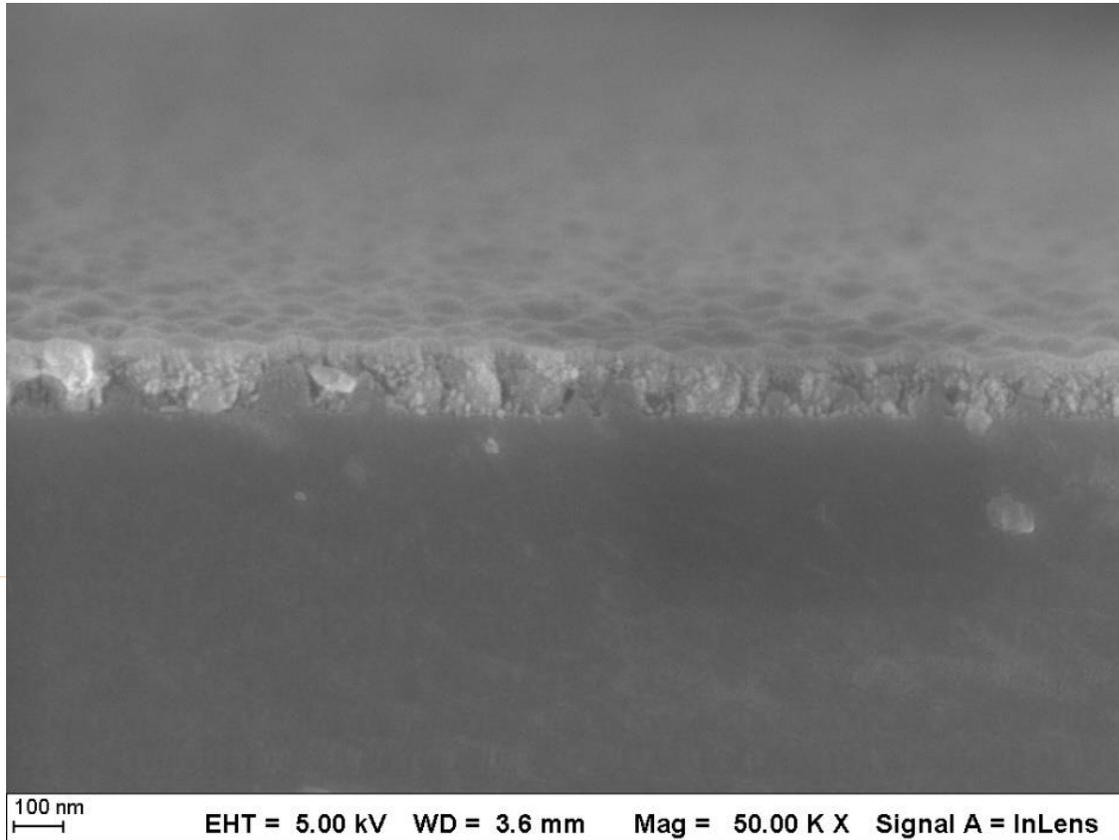


Surface of the coating is formed by "hills" and "valleys", creating an "Air Layer",

which functions just like the cushioning sole of AirMax sneakers

# Anti Dust - Unique Structure

**Under Microscope:** Unique texture with 'hills and valleys'



## Hydrophilic Angle, Light Transmittance, Pencil Hardness, Organic Decomposition

Temp: 85°C  
Humidity: 85%  
Duration: 1000 hours

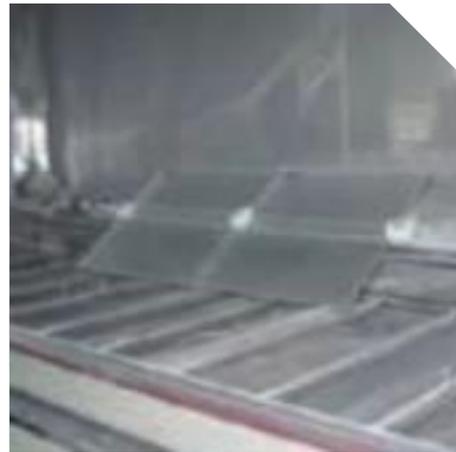
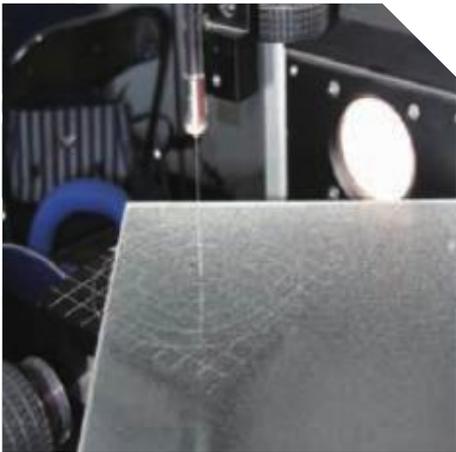
+85 To -40°C  
Temperature cycle  
Duration: 200 times

UV radiation  
60Kwh/m<sup>2</sup>

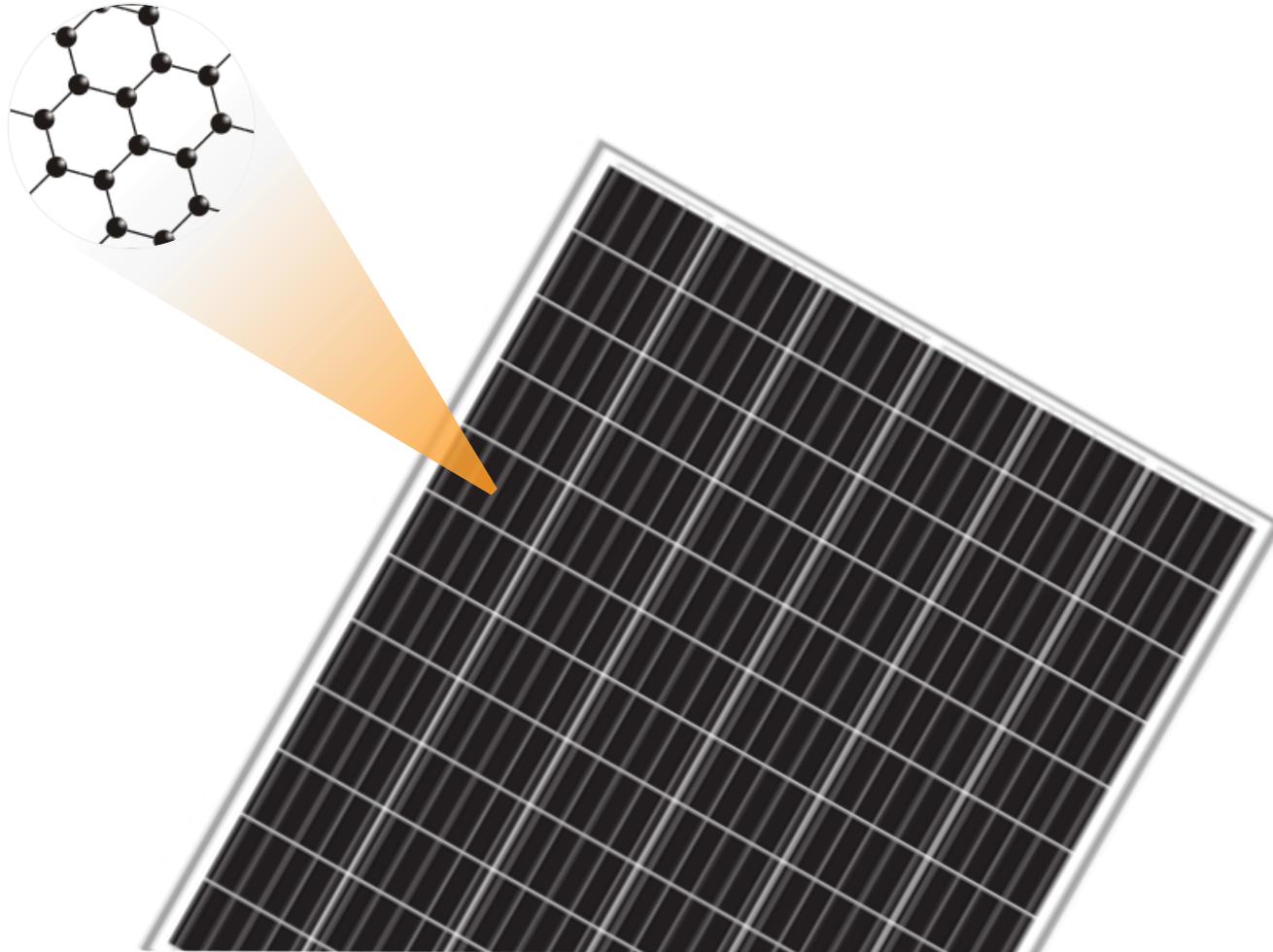
Sand resistance  
(200um quartz sand  
at 10m/s, for 24h)

Acid Resistance  
(1mol/l hydrochloric  
acid, soak for 24h)

Resistance to  
Neutral salt spray



# ZNSHINE Solar – Self Cleaning Panels



**Self Cleaning**



**Anti-Dust**



**High Reliability**



**More Power than Standard**

# THANKS

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