

## jiang® produces more energy in real-world conditions

In the solar business today, system purchases are made on a dollar-per-watt or Euro-per-watt basis. But, the return on investment (ROI) or payback period is determined by the amount of electricity, in kWh, the system produces. Third party testing, in real world conditions, shows that *jiang*® produces more energy for your purchased watt, and, therefore, provides the best return on investment.

This third party testing, conducted over a number of years, shows the long-term reliability and performance of the *jiang*® product. This type of proof is something no other flexible photovoltaic manufacturer can provide.

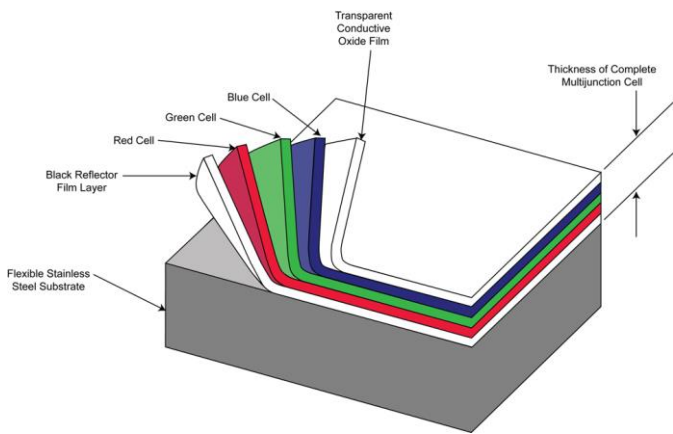
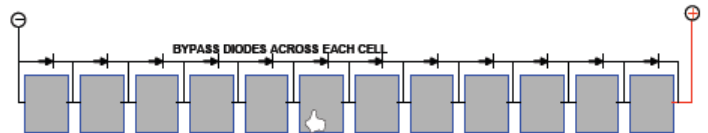


Figure 1. Triple-Junction Technology

Each *jiang*® laminate utilizes unique triple-junction amorphous silicon solar cells, where the blue, green and red light of the sun is absorbed in different layers of the cell. This technology results in better performance in low and diffuse light conditions.

By-pass diodes are connected across each cell, allowing the modules to produce power even when partially shaded or soiled.



*jiang*® PV MODULE CELL CONNECTIONS  
Shade/Soil any one cell = Output loss of <4.5% (22-cell Laminate)  
Area of shade/soiling required to cover one cell = 9" x 14" (126 sq in)

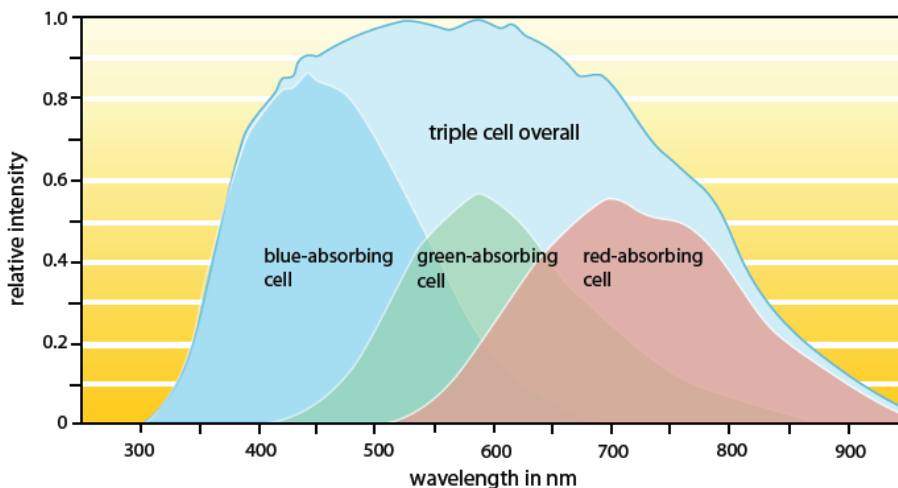
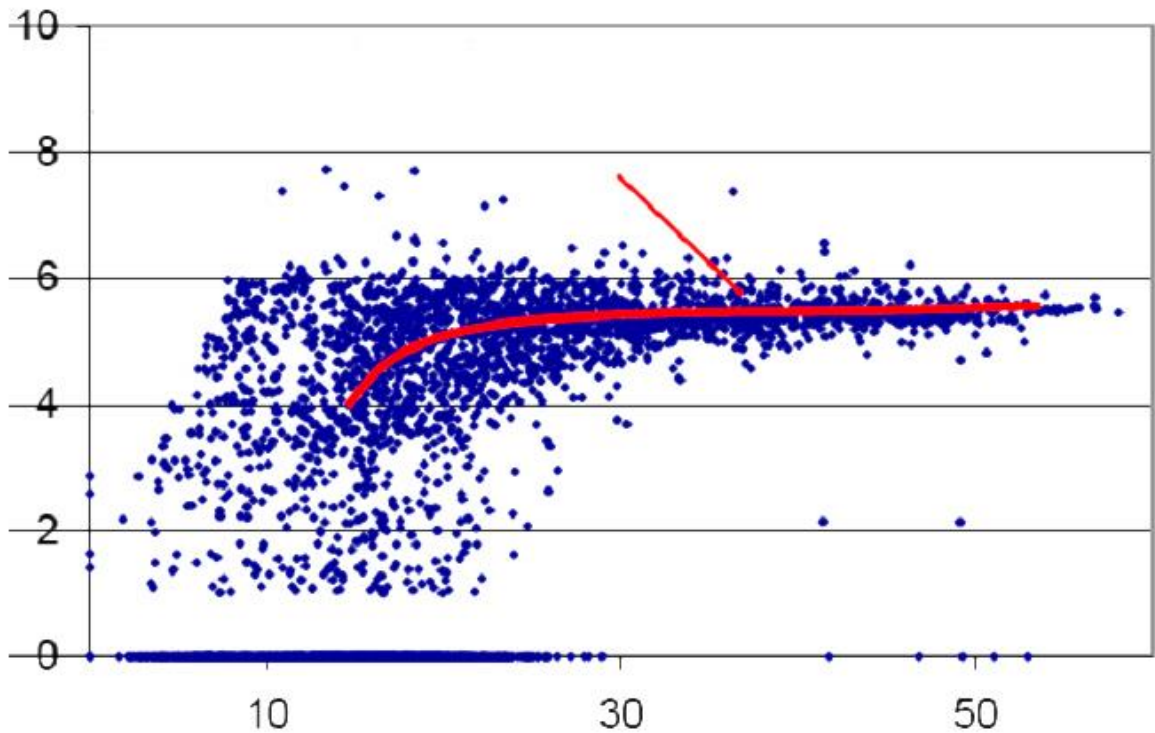


Figure 2. Light absorption effect of triple-junction technology

## Maintains energy production at high temperatures

jiang® laminates provide better energy yield at high temperatures. Today, all solar products are rated based on standard test conditions. In real outdoor conditions, cell temperatures increase with increased solar irradiation, reaching levels much higher than standard test conditions. Crystalline silicon modules experience a significant decline in kWh output at high temperature, while jiang® laminates do not. As a result, jiang® laminates produce more energy when you need it most.

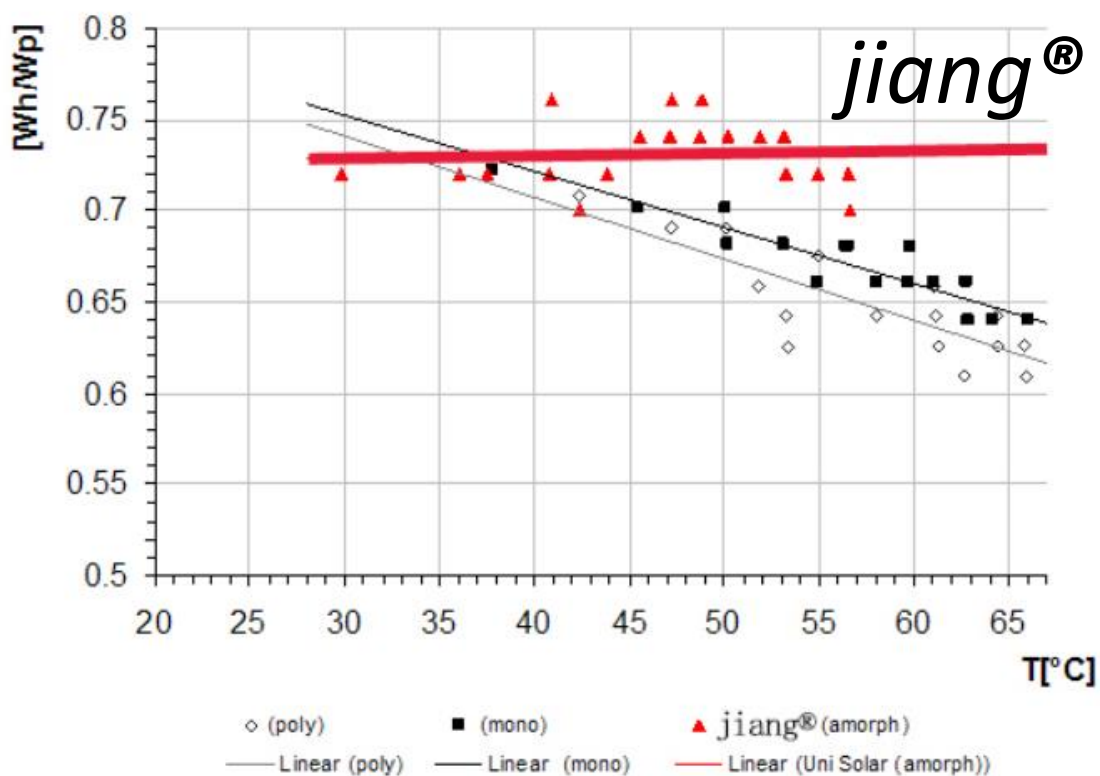
### Measured Temperature Influence - Germany



Source: ISE Freiburg, Germany

Maintains energy production at high temperatures

Yield in function of module temperature,  
Urbino, Central Italy (2003-2004)



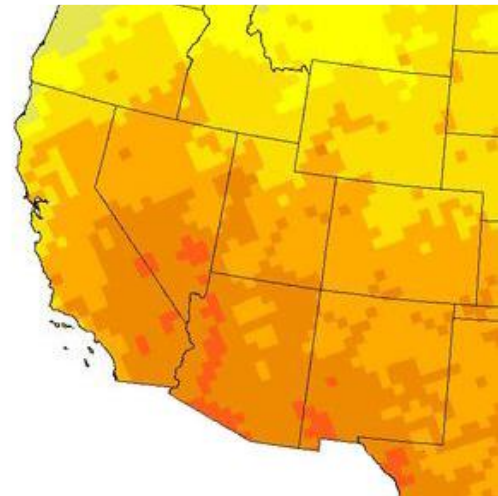
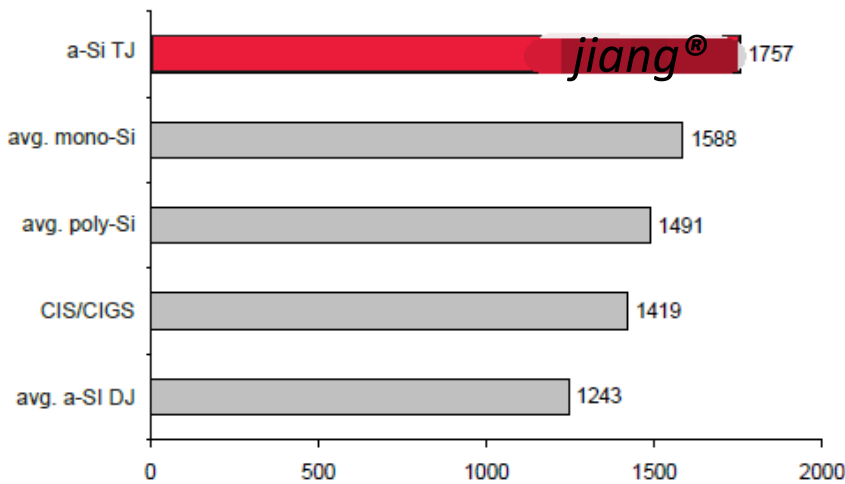
Source: University of Urbino, Urbino, Italy

## jiang<sup>®</sup> Performance Advantage (Third Party Testing)

In many locations worldwide, independent third party businesses and institutions collect data on several different photovoltaic systems. This real world data demonstrates the superior energy production of *jiang<sup>®</sup>* laminates in high temperatures, low light levels, and shading. Below are three examples of this data from locations in Tucson, Arizona, USA; Frankenberg, Bolzano, Northern Italy; and Santa Cruz, California, USA. In each location, *jiang<sup>®</sup>* outperforms competitive products by producing more kilowatt-hours of energy per kilowatt installed.

### Site: Tucson, Arizona, USA

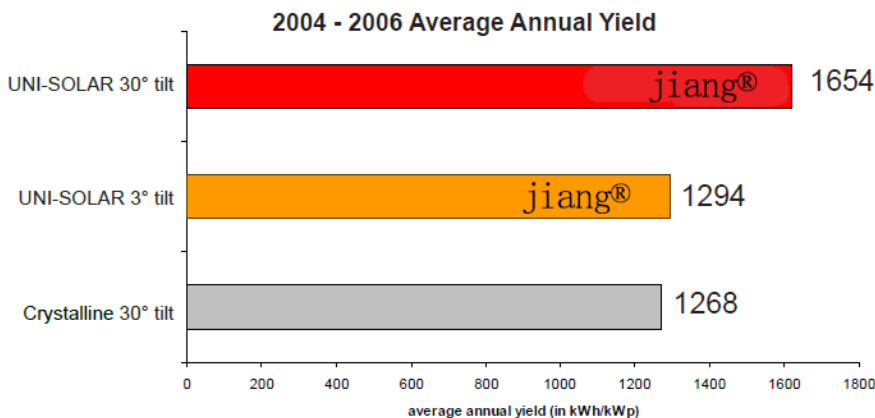
Source: Tucson Electric Power, Arizona, USA



Average yearly yield (in kWh/kWp) 2004-2007

### Site: Frankenberg, Bolzano, Northern Italy

Source: Office for Energy Saving, Province of Bolzano, Italy



USO Surplus versus:

Avg. mono-Si: +11%

Avg. poly-Si: +18%

CIS/CIGS: +24%

Avg. a-Si: +41%



USO Surplus versus:

Avg. poly-Si: +10%

mono-Si: +29%

**jiang<sup>®</sup>**

**Energy Production**

An Energy Conversion Devices Company

**Residential Product Roadmap**

**EnerGen**



**Tile**

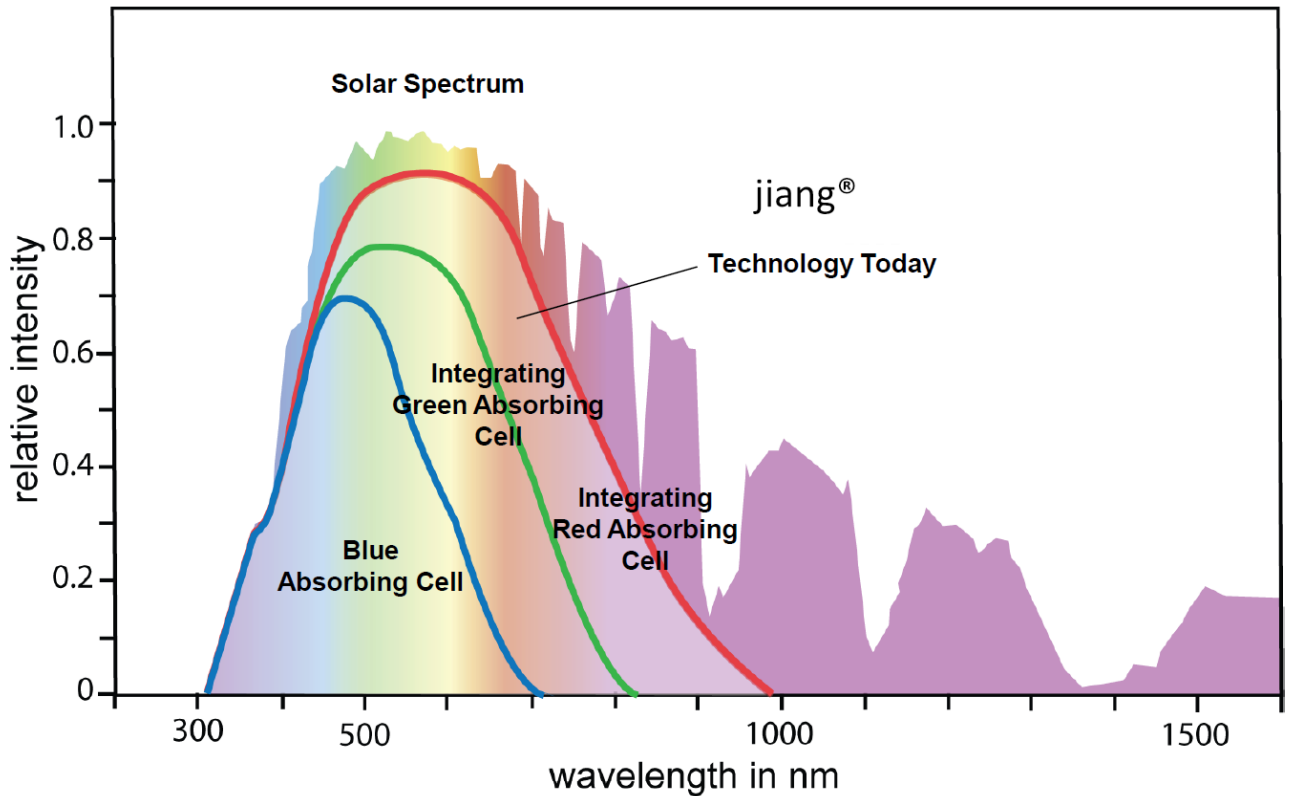
**Europe Future**



**Shingle**



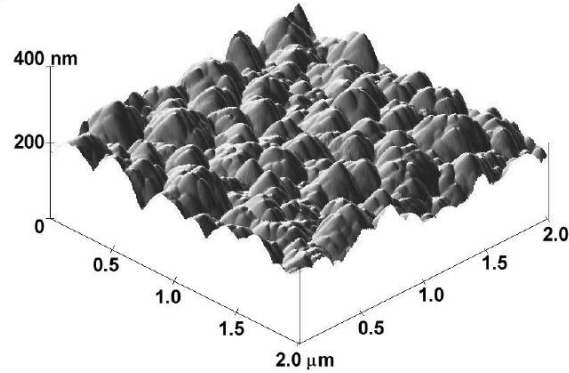
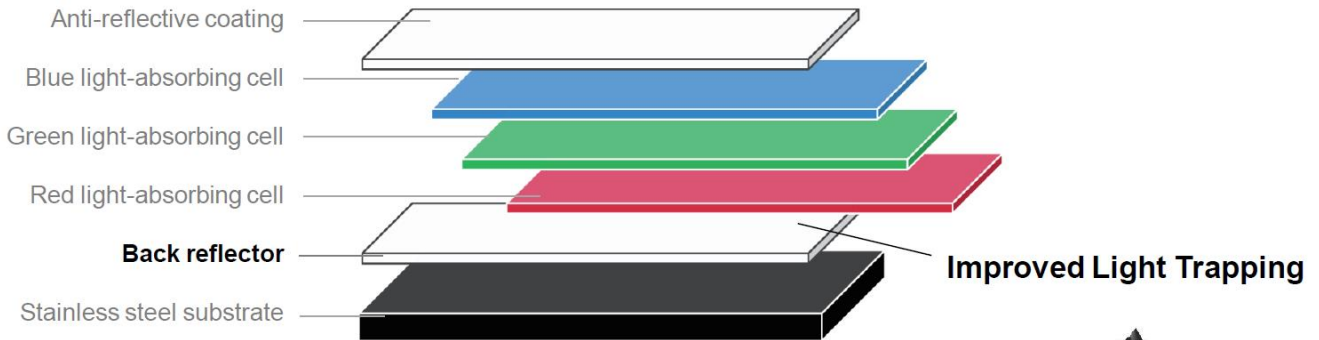
## Our Technology



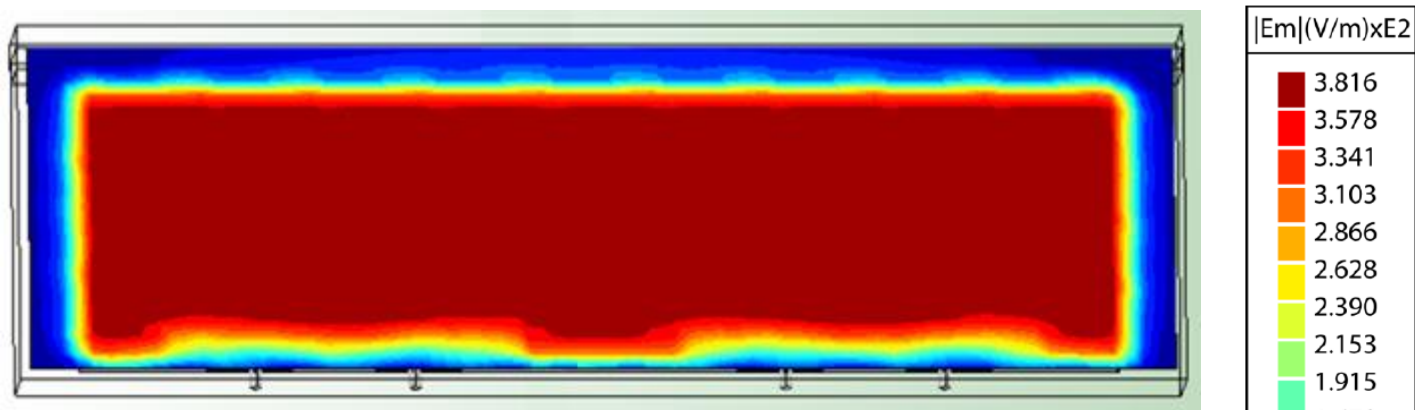
- Compatible with a-Si alloy deposition
- Ideal for middle and bottom cells of multi-junction structure
- Improved light absorption and no light-induced degradation of nano layers has resulted in conversion efficiency of 11%, target of ~12%

## Improved Light Trapping: Back Reflector

### Cross-section of a jiang solar cell



### Demonstrated Uniform Deposition Over Large Area



#### Current

- 8.2% efficiency in production


#### Demonstrated

- ~10% efficiency at 2x the deposition rate
- Reduced cost-per-watt and capex-per-watt

WE PROVIDE OEM SERVICE

***Have Questions?  
Contact us!***

 Lifetime technical support

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 Email:support@jiangsolar.com

Amazon: <https://www.amazon.com/jiang>