

# SunTalk

Dec. 2020



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twenty years  
in PV industry

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**SNEC 2020**  
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**LET YOUR DREAMS SAIL**  
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**EVERYTHING  
IS NEW**





# Suntech President Mr. Jun Tang: Striving to Develop “Recycling Economy” with High-quality and Excellent Products

August 7th, 2020, the 14th International Solar PV and Smart Energy (Shanghai) Forum was held in Shanghai. Mr. Jun Tang, president of Suntech was invited to attend the “Global Solar Leaders Dialogue” session and shared insights with the PV industry leaders from around the world.

As an important part of SNEC 2020, the dialogue served as a wide communicative platform for the industry well-known experts and relevant leaders from government departments to discuss about policy guidance and market trends, focusing on global market forecast during the 14th five year plan period, impact of COVID-19 and counter-measures to take as well as the development potentials of PV generation technology etc.

Mr. Tang pointed out that the crystalline silicon technology has fully developed, “For example, in 2014, we considered mono PERC technology as an alternative, but not an ultimate. However, it is this alternative technology has served as an alternative way for six years, still played a key role for the promotion of conversion efficiency. In the years ahead, the PV module conversion efficiency is expected to 25%. Meanwhile, Suntech has got involved in key technologies, such as HJT, which will set the trend in the future in R&D.”

Mr. Tang emphasized that the high quality products should be put at the most important place when seeking the application of high power, high efficiency and large scale. “We’re taking over the renewable energy industry, and we must take recycling economy into consideration. To develop high-quality products, it is to embrace circular economy concept and avoid subsequent waste to the maximum extent possible.”

As a global leading PV brand, Suntech has enjoyed stable growth in recent years based on pragmatic business operation and management. By the first quarter of 2020, Suntech had broken the cumulative shipment of 22GW to over 100 countries and regions. In the future, Suntech is striving to provide high-quality and reliable solar products based on excellent technology. We are working together with the peers to make contribution to the entire PV industry.

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COMMENTS  
MEDIA

PVTECH

Suntech 'restarts' after twenty years in PV industry

Despite having experienced numerous ups and downs over the years, Suntech has retained its status within China's PV industry as an internationally respected and richly experienced solar player.

An established leader in the PV industry, Suntech has been through difficult periods amid the waves of PV growth in China, to finally return to dedicated PV manufacturing via the removal of other redundant businesses.

Based on its mastery of core product technology and visibility overseas, Suntech has been making steady progress towards being listed once again in the 'first team' of industry players.

In the 2019 Solar Module & Inverter Bankability report released by BNEF, Suntech was once again amongst the "World's Most Bankable PV Module Brands", ranking seventh, up 11 from its previous spot.

By Carrie Xiao, PV Tech

Suntech, the leader in PV modules

A trendsetter since its foundation in 2001, Suntech effectively opened the door to the renewable world for everyone else, with its first module shipped overseas in 2002.

As the first major PV manufacturer in China, the company, by insisting on using reliable materials and mature manufacturing processes in its PV module production, set an example for the industry, underscored by rigorous inspection and third-party testing.

In the early days, PV players successively copied Suntech's practices in material procurement, production standards and quality control. The prevailing production culture within the industry set the stage for 'Made in China' to lead the global PV industry many years later.

Carefully crafted products in any industry will stand the test of time. According to a new report on module after-sales, from 2003 to Q1 2020, Suntech sold a total of 81.3 million modules, with a failure rate of only 0.0977%. Many of the company's first modules to be shipped provided excellent performance, especially in terms of stability and reliability.

Suntech shipped 40kW of poly modules in 2002 to a German plant belonging to the Czech company GBC. The project was completed and connected to the grid in October 2003. Over the past 17 years, the average annual generation efficiency of the plant has remained at around 1000kWh/kWp, much higher than originally expected.

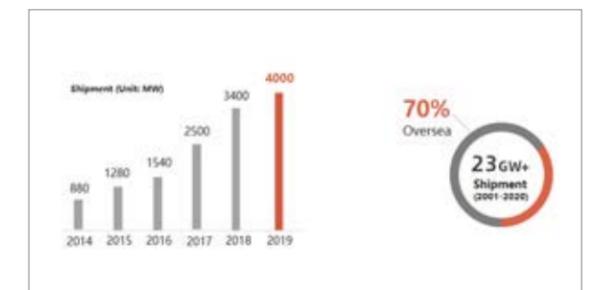
According to a 2019 performance monitoring report, Suntech's poly modules are able to heat up evenly with no hot-spot risks, and the highest temperature differential is maintained within ±10°C. Showing no signs of degradation, Suntech modules are still operating reliably after 17 years of exposure to the elements.

Module reliability is extremely important for investors and EPC companies. For investors, a reliable module means constant cash flow and, for EPC companies, reduced O&M costs. The excellent performance of Suntech modules has earned the company the loyalty of the market and many long-term customers. GBC, a company that has now worked with Suntech for more than ten years, is one of these. Purchasing their first module from Suntech, many organisations have effectively grown up with the company to become the top PV distributors across Europe.

Suntech's popularity and reputation around the world over the years has led to a steady growth in its module shipments. The company's products were shipped to over 100 countries and regions in early 2020, including to some of the world's most renowned power plants. The Indian PV plants invested in by Softbank, the mega group, have so far used 225MW of PV modules supplied by Suntech.

In August 2019, Suntech supplied 250MW of high-efficiency poly modules to the JUWI PV plant in Kimberley, South Africa, which is the first of a batch of large-scale power plants there. Later, in October, Suntech supplied 100MW of modules to Europe's largest 500MW PV plant.

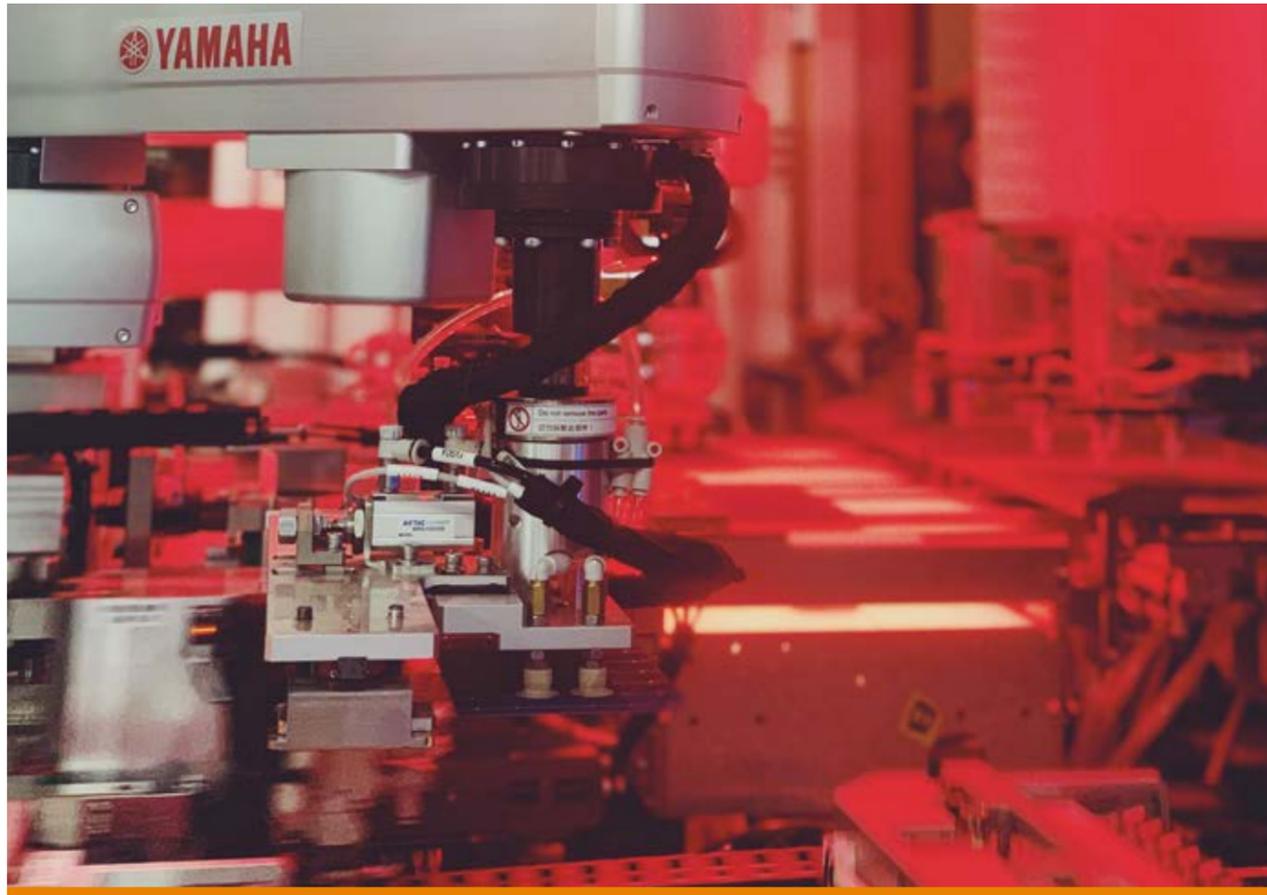
The figure below illustrates that, since 2014, the annual growth of Suntech's module shipments globally has averaged out at around a steady 30%. By the end of 2019, the company's cumulative shipments had exceeded 23GW, of which overseas shipments accounted for 70% (see Figure 1).



Suntech's commitment to quality also extends to its product innovation and R&D. The company's R&D team has consistently made every effort to always present to the market the best and most suitable products, manufactured with state-of-the-art technology and materials, as can be seen from two of its latest offerings, the super-thin, super-light HiPerma series UltraD multi-busbar bifacial PERC module released in 2018 and the 440W high-efficiency, half-cut HiPower mono module launched in 2019.

According to Suntech, time will tell that its modules will prove to be the right choice for its partners and clients. Having survived the twists and turns of the past nineteen years, Suntech is now actively embracing a new start in many markets around the world.

Customs data shows that Suntech module shipments in 2019 were ranked among the top 3 in India, Egypt and South Africa, and among the top 6 in Europe and Japan. The company also did very well in other markets.



## Sound financial performance and over 10GW of new capacity planning

As one of the "founding fathers" of the PV industry, Suntech has, based on its accumulated experience, established a sound network for global sales and after-sales service.

The company is known to have more than 1,500 premium customers and loyal distributors in all major markets around the world, many of whom have worked with Suntech from their earliest years and have grown up with it as a valued partner.

Reliable products, renowned brands and loyal customers have underpinned Suntech's success in international markets for many years. Equally, the company's solid financial performance and low debt ratio is another combination of factors behind its renaissance.

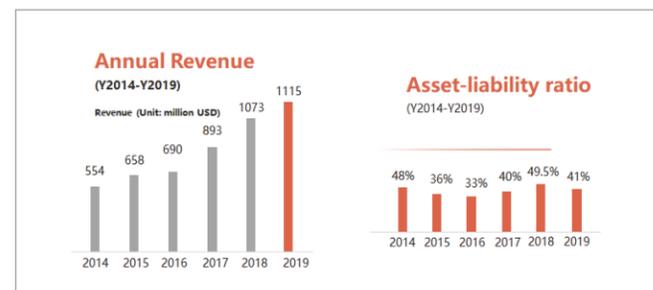
The company's recent outstanding performance has been recognized by international third-party organisations. The respected credit management company D&B Group rated Suntech as '5A' in financial strength, pointing to sound operation indicators, top business credit and strong financial performance.

Capacity expansion is imperative with the steady increase in shipments, Suntech's PV module capacity currently standing at 4.5GW.

The company's new 1.5GW high-efficiency module plant in Wuxi was commissioned on Aug 1st, to be followed by more production bases in Changzhou, Zhenjiang and Yangzhou. It is estimated that future total capacity will exceed 10GW.

After a number of challenging years, Suntech remains a top PV company, gaining fresh momentum by virtue of its rapid development in overseas markets, growing brand awareness, technology strength and local government support, all of which have combined to propel it back towards its historical leading position within the industry.

Suntech's steady growth over the past few years enabled its revenue to reach US\$1.115 billion in 2019, with debt ratio controlled effectively below the level of 50% (see Figure 2).



# SNEC2020 CEO Series : Suntech bounces back

## PV magazine

Once an industrial solar giant, Suntech has worked hard to rebuild its foundations and regain a solid footing in the global PV industry, following its financial crash in 2013. pv magazine caught up with CEO Tang Jun at this year's SNEC 2020, held in Shanghai, China, last month, to find out its plans for the future, and how the Covid-19 pandemic has affected operations. Strong global growth and continued multi-crystalline production are two cornerstones of the business.

### pv magazine: What new products and solutions did Suntech present at this year's SNEC?

**Tang Jun:** Suntech launched its new generation of ultra-high power PV modules, named "Ultra". This new series includes a variety of modules with large-size wafers, including 166, 182 and 210 mm, while the maximum power exceeds 600W, at 605W. We have also introduced casting mono and heterojunction (HJT) module products. The conversion rate of our HJT products can reach 21.5%, and the efficiency of our high-power modules can reach 21.3%.

### What's Suntech's geographical reach?

Suntech has always focused on overseas markets and we are currently selling modules in more than 100 countries worldwide. Our brand is well-known in our most significant markets, which include the European Union, Japan, India and Australia.

In terms of market share, 80% of our products were exported in 2019. However, we have now passed the watching period and entered the whitelist of mainstream investors, which has seen our domestic market share increase significantly. We have also begun to participate in bidding processes for large domestic projects.

### How important is the US market to Suntech?

The current U.S. policy has had a great impact on our business there, meaning we have had a hard time. Saying that, we are going to set up a new branch in the United States and try some new ideas to participate in this important PV market.

### Last year, Suntech entered the Kazakhstan solar market. What advice do you have for companies looking to enter such emerging markets?

When entering emerging markets, we have found that some companies are eager for quick success and easy money, thus focusing on immediate benefits. I want to call on industry participants to fully respect local market rules and characteristics when entering new markets, and to protect the healthy development of the market through cooperation and healthy competition.

# INTERVIEW

**What is the current situation for Suntech's multi-crystalline products?  
What do you think about the future PV markets for both mono and multi products?**

Suntech is still shipping multi-crystalline modules. Although the current proportion of mono is increasing, and multi-crystalline products may comprise less than 20% this year, we believe multi-crystalline products will not vanish. As a key member of renewable energies, one of the most important characteristics of solar PV power lies in its cost performance. And multi-crystalline modules still have cost advantages. Furthermore, in terms of energy consumption in module production, multi-crystalline still has a clear advantage.

Its overall market share has dropped in the past two years, as the popularity of mono products increases, mainly due to support in the industry chain and the Chinese state's guidance. Despite this, it is undeniable that the energy consumption advantage is conducive to environmental protection. As long as the R&D and support of multi-crystalline products can be increased on the cell level, the conversion difference between mono and multi will be reduced. In addition, multi-crystalline products will continue to have a market in some specific regions and environments. At Suntech, we still have multi-crystalline production capacity. While the proportion will be reduced in the future, it will not disappear completely.

**What is the current module capacity of Suntech? Do you have any expansion plans?**

Presently Suntech has a module production capacity of 6 GW, and we aim to reach another 3.5 GW of new capacity at Changzhou by the end of this month. We have new plans for next year, but they are still under wraps. These capacities are currently compatible with 180 mm+ size silicon wafers. In the future, short boards will be added in the stringing process to fully match 210 mm size silicon wafers. Regarding capacity, the nominal production capacity is actually the most conservative indicator. In actual production, it can be adjusted according to the order to achieve an actual production volume greater than the nominal production capacity. Suntech's philosophy is to develop its own production capacity step-by-step.

**How has the Covid-19 pandemic influenced Suntech's operations?**

In general, the pandemic has greatly impacted us. At the end of February, after the Spring Festival, Suntech had undertaken a series of recruitment and other tasks. They were all affected by the pandemic and postponed, just like the resumption of work. The other aspect was logistics, which were impacted on a far greater scale. After the domestic outbreak was brought under control, the overseas markets were affected. Especially in India and the EU, logistics have been greatly affected. Through the efforts of all our employees, we still achieved sales growth in the EU; however, in some overseas markets, issues still exist.

**What are you currently focusing R&D on?**

We have an R&D team working on new products, including design improvement for the current trend of high-power modules. We are also focusing on our N-type HJT modules, because of the differences in the packaging process, compared to traditional modules. In addition, we are doing a lot of work on cast-mono modules, and have studied some other front technologies, like overlapping. Saying that, Suntech has very high requirements for product quality, stability and reliability, so the company is conservative in its use of new technologies. We will not promote products on a large scale for immature technologies.





At the commissioning ceremony, Mr. Jun Tang, president of Suntech, said, "As a long-established PV company, it is time for Suntech to upgrade to advanced production capacity. The expansion of the Wuxi manufacturing facility is the first step in our steady growth strategy, which will be added 8.5GW of advanced capacity to our four factories this year. We are not just striving to be big, but to be strong. The 'strong' is reflected in how to provide customers with reliable products. We are expanding at a steady pace and following our goals for brand strategy."



Since its establishment in 2001, Suntech has experienced twenty years of development and achieved great success in the renewable energy industry. Suntech has been developing with good momentum these years. Supported by the excellent brand reputation globally, the export scale has increased year by year, and shipments have reached new highs. As of the first quarter of this year, Suntech has a cumulative shipment of more than 22GW of PV modules to 100 countries, the shipments ranked top 10 among all brands in the solar energy sector globally. In the second half of the year, Suntech will continue to integrate the resources of the group. Based on current production capacity, new manufacturing facilities will be set up in Changzhou, Zhenjiang, Yangzhou and others. The realization of higher target production capacity will further satisfy the global PV market's demand for high-quality, high-reliability PV modules, thus enhancing the competitiveness of Suntech's PV modules in global markets.

## Suntech Expands Its High-efficiency Module Production Capacity by 1.5GW in Wuxi

On August 1st, Suntech announced that the 1.5GW high-efficiency module expansion in the Wuxi module manufacturing facility was officially put into production.



With a total investment of 490 million RMB, the new 1.5GW high-standard smart module manufacturing facility which covers an area of 150,000 square meters has been set up. The newly installed equipment will improve the production efficiency for modules. At present, Suntech's new production line has covered all mainstream technologies for products in the market. It is compatible with multi-busbar cells of various formats from 166mm to 182mm, fitting 78-cell solar modules, as well as the upgrade space for 210mm large format cells. Suntech will keep upgrading the Wuxi manufacturing facility with intelligent technology later this year, and is committed to creating a national pilot demonstration project of intelligent manufacturing and a national project of intelligent manufacturing with comprehensive standardization and application of new modes, which will enable the Wuxi manufacturing facility to achieve AI intelligent inspection and IV automatic testing and other technological improvements.





Since 2001, Suntech has made fruitful achievements in the new energy field during its 20 years' growth. In recent years, Suntech has enjoyed prospective growth and seen increasing shipment successively. Based on its well-established brand influence abroad, the Suntech brand exhibits appealing bankability value. According to the Bankability 2020 report released by BNEF, Suntech is at the 7th place among the Top 15 PV module brands used in term-loan financed projects in the world, boasting of excellent shipment data, excellent financial standing and brand reputation.

Thanks to the local government's great support for Suntech, yet another big production and operation project got completed, Mr. Tang Jun, president of Suntech, said. We at Suntech always put brand management and product quality first. Over the course of stable production expansion, we have not only taken the cutting-edge of production equipment and product diversity into account, but also stick to quality control and implementation of standards in the entire production and management process. Just like this, the quality of every piece of Suntech module is guaranteed. Every production base initiated at Suntech group is built based on firm and solid decisions, Mr. Tang Jun added. The 3.5 GW module production base at Changzhou will provide more favorable support for Suntech's brand management in production capacity, and it will make a great contribution to Suntech's output value and brand position as a whole.

With a total investment of 700 million RMB, the new 3.5 GW high-standard smart module manufacturing facility features several high standard new type smart module production workshops. With brand-new automatic high efficiency module production equipment introduced, the module production efficiency was greatly increased. Just like the expansion in Wuxi, the production lines at Changzhou are compatible with multi-busbar cells of various formats from 166mm to 182mm, fitting 78-cell solar modules, as well as the upgrade space for 210mm large format cells. The new production lines cover all the mainstream product technology available on the current market and can produce over 450W high power and high performance modules in batches.

At Suntech (Changzhou) Module production factory, with a warehouse of up to 45300 m<sup>2</sup> built and inbound, storage and shipment integrated, it is equipped with well-established hardware facilities that enable containers and platform trailers to perform shipment in 24 hours successively. The production line will be upgraded with AI intelligent inspection and IV automatic testing in the years to come, and in this way, stringent quality control can be assured.

## Suntech Expands Its High-efficiency Module Production Capacity by 3.5GW in Changzhou

On Aug.18th, 2020, Suntech announced that the 3.5 GW high-efficiency module expansion project in the Changzhou module manufacturing facility was officially put into production.





Suntech Indonesian plant, located on Batam Island, is only 30 nautical miles away from Singapore. With geographical advantages, its logistics cost is equal to that in other Southeast countries. This plant also follows Suntech stringent QC system regulations. Despite the circumstances where the cost competition becomes increasingly severe, Suntech insists on using reliable materials and advanced manufacturing processes to build high quality solar power modules. The products will also be supplied to the American market, boosting Suntech continuous exploration of the American market.

“Suntech shipped 3GW modules to US market in the last 10 years. As manufacturing limitation in Southeast Asian countries, we didn't fulfill our US customers' strong demand.” Said Vincent Cao, vice president of Suntech, “With new capacity from Indonesian factory, we will continue support US market and boost our sales in US.”



In recent months, Suntech has achieved the total module capacity of 9.5GW with its expansion of Wuxi and Changzhou in China. The operation of the Indonesian plant has made the capacity a breakthrough of 10GW. In the future, Suntech will improve the industrial chain cooperation and integrate advantage in management, technology, capital, channels and brands.

## Suntech Announced 500 MW PV Cell and Module Capacity in Indonesia, to enhance US market coverage

Recently Suntech announced its operation of the 500MW high-efficiency integrated PV cell and module manufacturing project in Indonesia, meeting the requirements from American and Indonesian markets. The Solar Module from Indonesian Factory is Now Available for customers in US.

As the first foreign enterprise with local plant construction qualification in Indonesia, Suntech's local plant capacity is 500MW of cells and 500 MW of modules. The production lines are compatible with multi-busbar modules sized from 158mm to 166mm, and be available for 182mm. New production lines are supported with all mainstream product technologies such as mono PERC half-cell bifacial modules and 78 large-sized modules. High power and high performance module products over 450W are mass-produced. The production capacity for this plant will be expanded in steps, estimated up to 1 GW by the end of 2020.



20 YEARS

TOGETHER

The 14th International Photovoltaic Power Generation and Smart Energy Conference & Exhibition (SNEC) was opened in SHANGHAI New International Expo Centre.

# Suntech Group showed up with all members at SNEC 2020

On August 8th, 2020, the 14th International Photovoltaic Power Generation and Smart Energy Conference & Exhibition (SNEC) was opened in SHANGHAI New International Expo Centre. All companies from Suntech Group attended the exhibition together. Wuxi Suntech Power Co., Ltd., Jiangsu Shunfeng Photovoltaic Technology Co., Ltd., and Rietech New Energy Science & Technology Co., Ltd. exhibited a variety of new products, demonstrating the advantages of vertical integration in a group and introducing a new brand concept to connect the entire industry chain.

## Wuxi Suntech Power Co., Ltd.



Since its establishment in 2001, Suntech has experienced twenty years of development and achieved great success in the renewable energy industry. Suntech has been developing with good momentum these years. Supported by an excellent global brand reputation, overseas shipments have increased year by year and reached new records. As of 2020 Q1, Suntech has a cumulative shipment of more than 22GW of PV modules to 100 countries, ranked top 10 among all brands in the solar energy sector globally. On August 1st, Suntech announced that the 1.5GW high-efficiency module expansion in the Wuxi module manufacturing facility was officially put into production. With a total investment of 490 million RMB, the new 1.5GW high-standard smart module manufacturing facility which covers an area of 150,000 square meters has been set up. The newly installed equipment will improve the production efficiency for modules. At present, Suntech's new production line has covered all mainstream technologies for products in the market. It is compatible with multi-busbar cells of various formats from 166mm to 182mm, fitting 78-cell solar modules, as well as the upgrade space for 210mm large format cells. Suntech will keep upgrading the Wuxi manufacturing facility with intelligent technology later this year, and is committed to creating a national pilot demonstration project of intelligent manufacturing and a national project of intelligent manufacturing with comprehensive standardization and application of new modes, which will enable the Wuxi manufacturing facility to achieve AI intelligent inspection and IV automatic testing as well as other technological improvements.

Suntech is always devoted to promoting conversion efficiency of PV products. With the fierce competition in the industry, while continuously pursuing the reduction of module costs, it puts more and more effort in R&D of new technologies and the improvement of production processes. By virtue of the state-of-the-art technical advantages and the excellent manufacturing level, Suntech launched a new generation of modules of ultra-high power--- the "Ultra" series at this exhibition. Being namedas "Ultra", the new generation represents the "supreme", demonstrating Suntech's ultimate ingenuity in keeping up with the development of the times. The series includes module products of various formats silicon cells like 166/182/210mm, with the highest power exceeding 605W+. Equipped with mature technologies such as half-cut cell, multi-busbar, bifacial, high-density cell interconnect technology and high-efficiency welding strip technologies, Suntech has a particularly optimized structure design and owns the exclusive patent that while guaranteeing the super mechanical load capacity of products, the products can still be light, with the weight over 22.3% lower than that of mainstream products of the same specifications in the market. Suntech adheres to the idea of human-friendly design, and has optimized the module in size, weight and system compatibility to achieve higher matching performance for terminals, lower LCOE, and more benefits to customers.

## Wuxi Suntech Power Co., Ltd.

Founded in 2005, Shunfeng Photovoltaic is a high-tech enterprise focusing on R&D, production and sales of high-performance solar cells. In 2018, Shunfeng Photovoltaic invested in a capacity expansion for high-efficiency solar cells with a production capacity of 1.5GW. The annual production capacity reached 3GW, among which the production capacity of high-efficiency monocrystalline PERC, P-type bifacial PERC, and N-TOPCon have altogether reached 2GW. The production line is capable of producing cells of various sizes such as 156mm, 158mm, 166mm, 168mm, 18Xmm, etc. Shunfeng Photovoltaic has a good reputation in the industry in terms of high conversion efficiency and high reliability. Ahead of the whole industry, the company is the first to implement 100% visual inspection and EL testing, which can achieve zero micro crack loss in cells. In addition, its cell products have passed double PID (potential induced degradation) testing and reliability testing which guarantees 25 years' power output of modules. Shunfeng Photovoltaic's professional equipment can realize precise color separation and Shunfeng Photovoltaic itself is the preferred cell brand for black modules in the industry. For 15 years, Shunfeng Photovoltaic has promoted the application of high-efficiency cell technology in the global PV market by virtue of its high-efficiency products and high-quality services, creating more value for global customers.

In this exhibition, Shunfeng Photovoltaic presented four types of high-efficiency solar cell products, two of which are 158mm size monocrystalline PERC and 166mm size monocrystalline PERC bifacial cells developed on the base of a PERC technology platform. Shunfeng Photovoltaic's conventional monocrystalline PERC cells are optimized through diffusion, SE, and metallization processes. The current mainstream conversion efficiency for mass production can reach 22.8%. Combining the half-cell and MBB design, 166mm size cells can meet the needs of 460W high-power modules. As for bifacial PERC cells, through changing the cell structure, its front conversion efficiency reaches 22.8% and its bifacial ability exceeds 75%. With the help of double-glass modules, the generated power can increase by 5%-10%. The average conversion efficiency of polycrystalline solar cells can reach up to 19%, which can meet the requirements of packaging 280W modules. The new N-TOPCon cell currently has a front conversion efficiency of 24.1% and bifacial ability exceeds 90%, demonstrating outstanding advantages such as high cost performance and no LID (Light Induced Degradation).

## Rietech New Energy Science & Technology Co., Ltd.

Established in June 2007, Rietech New Energy is a national key high-tech enterprise focusing on the R&D and production of solar grade multi wafers. The company adheres to the business philosophy of "increasing value for customers in upstream and downstream supply chains", with a total investment of more than 5 billion yuan. The two R&D and production factories are located in Yangzhong Economic Development Zone in Zhenjiang City and Yangzhou Integrated Free Trade Zone. Rietech attaches great importance to the R&D of key technologies for silicon wafers for solar cells, and has made major breakthroughs in core equipment, advanced production technology, and frontier technologies. It is the first enterprise in the industry to conduct R&D of quasi-mono silicon wafer technology, introducing a diamond wire cutting machine, and having realized R&D and mass production of poly full-melt technology.

At this exhibition, Rietech exhibited a variety of silicon wafer products. As for Reitech R3 high-efficiency polysilicon wafers, Rietech R&D platform ensures the continuous improvement of wafer performance. Rietech has been focusing on a full-melt casting process which ensures low oxygen content in silicon wafers and avoids black edges. The mature co-doping technology ensures narrower resistivity distribution and more cell efficiency gain for PERC processes. As for the Rietech Medium Efficiency Multi Wafer, the efficiency is higher than 19% while LID is lower than 0.8%. In addition, Rietech launched its new generation of Cast Mono wafers in the exhibition, which has advantages of low dislocation density, low oxygen content, and all size (158.75/166/167.75/182/210mm) manufacture ability. N type Cast Mono wafers with 145µm thickness and customized resistivity range are also available.

In 2020, Suntech Group has started the projects of 5GW and 2GW module production in Yangzhou and Zhenjiang respectively. The projects improved the cooperation between all members and highlighted the advantages of the group's vertical integration through the collaboration of each company's management, technology, capital, channel, and brand. This lead to a higher quality of group development. The realization of the target production capacity at the end of 2020 will further satisfy the global photovoltaic (PV) market's demand for high-quality, high-reliability PV modules, thus enhancing the competitiveness of Suntech modules in domestic and foreign markets.

# Suntech Releases a New Generation of High-Power Modules

On August 8th, 2020, a new generation of high-power modules developed by Suntech was officially launched. This is the masterpiece of Suntech to meet the competition of high energy density in modules, marks a new era of ultra-high-performance PV products.



Suntech's new high-power modules equipped with advanced technologies include heterojunction (HJT) modules and Ultra S/V/X series, covering large format silicon wafers of all sizes (166, 182, and 210mm). This series is equipped with mainstream technologies such as half-cut cells, multi-busbar, and bifacial technologies. The output power can reach up to 605W+ and module efficiency can be up to 21.3%. Suntech's new product development team had the needs of customers in mind: while ensuring maximized reliability of modules, the design of the module structure is user-friendly. Compared with mainstream products of the same specifications in the market, the weight of new products is reduced by more than 1/5, which breaks the technical barriers of ultra-high power and weight reduction, reducing more electricity costs even more (LCOE).

## Suntech's heterojunction module:

**Innovation of new HJT technology, ultra-performance and higher efficiency**

Suntech's heterojunction PV module is based on an N-type heterojunction cell design, with a cell conversion efficiency of 24%, 1% more efficient compared with the PERC cell, resulting in a high module conversion efficiency of 21.4% and higher power of 435w. It is estimated that 158.75mm heterojunction PV modules can be mass-produced in 2020 Q4, and the cell size can be upgraded synchronously later.

The Pmax temperature coefficient of Suntech's heterojunction module is only - 0.268% / °C, about 40% lower than that of conventional silicon modules. In high temperature conditions, it can increase power generation by 10-15%, compared with conventional PERC modules. In addition, Suntech's heterojunction PV module adopts a bifacial design, with the bifacial ratio up to 90%. The backside increases the maximum power generation capacity by 30%, which brings with it a higher rate of return on power generation for customers.



# Ultra V

## Create the milestone of V, upgrade to high energy density

Based on large format 182mm silicon wafers, Suntech's Ultra V modules optimize the layout profoundly and adopt high-density cell interconnect technology which shorten the distance between the cells, decrease the invalid power generation area greatly, and improve the energy density of the modules when module efficiency reaches to 21.3%. The combination of mature half-cut cell, multi-busbar technologies, auxiliary materials such as a flexible special ribbon and a highly reflective backsheets can improve the utilization rate of the sunlight, the module power can also be improved significantly, with the highest being 590W.

Suntech has a particularly optimized module structure design and owns the exclusive patent. The module weighs 24.4KG, 15% lower than the products of the same specification in the market but with greatly improved mechanical load capacity. When the load reaches +5400 / -2400Pa, the maximum stress of module structure is reduced by 23% compared with conventional structure design, the maximum deformation is reduced by 37%, thus avoiding the risk of micro crack loss and improving the reliability of modules.

Suntech Ultra V Series also released a bifacial layout, reducing the weight of the module while ensuring the load capacity. Besides double-glass packaging, it is also compatible with transparent backsheets when needed in project locations, which not only has the features of ultra-high light transmittance and excellent anti-PID performance, but can also effectively reduce the weight by more than 30% compared with the double-glass module. It can also work with the tracing bracket and decrease LCOE effectively.

The layout of the Ultra V module can better match the size of the container, so the utilization rate of the container reaches 83.2%. Compared with conventional products with the same power, the Ultra V module reduces transportation cost by 5%, land cost by 5.4%, effectively controls BOS cost, and reduces LCOE by 2.6-2.8%, which can provide customers with higher ROI.

# Ultra X

## Unlimited imagination of X, discover new possibilities for high-power modules

Suntech Ultra X products adopt large format 210mm silicon wafers and PERC mono cells which increases the light receiving area by 80.5% compared with products of conventional formats. At the same time, Suntech adopts high-density cell interconnect technology which shortens distance between the cells, decreases the invalid power generation area, and improves the energy density of the module, leading to a module efficiency of up to 21.3%.

Suntech's non-destructive cutting technology made it possible for effectively avoiding the damage of cutting surfaces, realizing the optimal 1/3-cut design, effectively reducing the current loss and the risk of hot spots. By virtue of the multi-busbar technology, the transverse propagation path of the current can be decreased by 50%, resistance loss can be reduced effectively, while realizing the maximum power output and the reliability of the module. While ensuring the reliability of the welding process between cells, Suntech's upgraded high efficiency ribbon brings more second-time reflection of oblique light, which increases the power generation by 1.57% when the highest power exceeds 600W+.

Suntech has a particularly optimized structure design and owns this exclusive patent. Compared to mainstream products of the same specification, the weight of the module is 26.9KG, reduced by more than 1/5 suiting the transportation standard and reducing the labor cost of installation by 15%. It also has super mechanical load capacity. When the load reaches +5400 / -2400Pa, the maximum stress of the module structure is reduced by 23% compared with conventional structure designs. The maximum deformation is reduced by 37%, thus avoiding the risk of micro crack loss and improving the reliability of modules.

Suntech's innovative user-friendly design ensures that the module size is fully optimized which fully matches the container size while the transportation cost is reduced by 5% compared with the traditional module. Fully compatible with mainstream system designs, Suntech's Ultra X products match the terminals better and can save the EPC cost by more than 1.2%, save the cost of land by 4% and BOS by 2.7%, ultimately realizing lower LCOE and higher return on investment of customers.

# Ultra S

## Break unknown S, Refresh the experience of high efficiency

Suntech Ultra S modules apply large format 166mm silicon wafers, integrated with mature half-cell, multi-busbar technology, whose mass production power can be up to 450W when conversion efficiency can be up to 20.6%. Suntech launched large format modules of 78 cells, whose highest power exceeds 490W. Higher module power can effectively reduce the installation area of the system, which can save the labor cost of installing PV systems and the cost of brackets, maximizing the economic advantage and output power of the PV system. Taking the 120MW project in southern Australia for example, the use of Ultra S 450W modules can decrease LCOE by more than 6% compared with conventional mono PERC half-cell 375W modules.

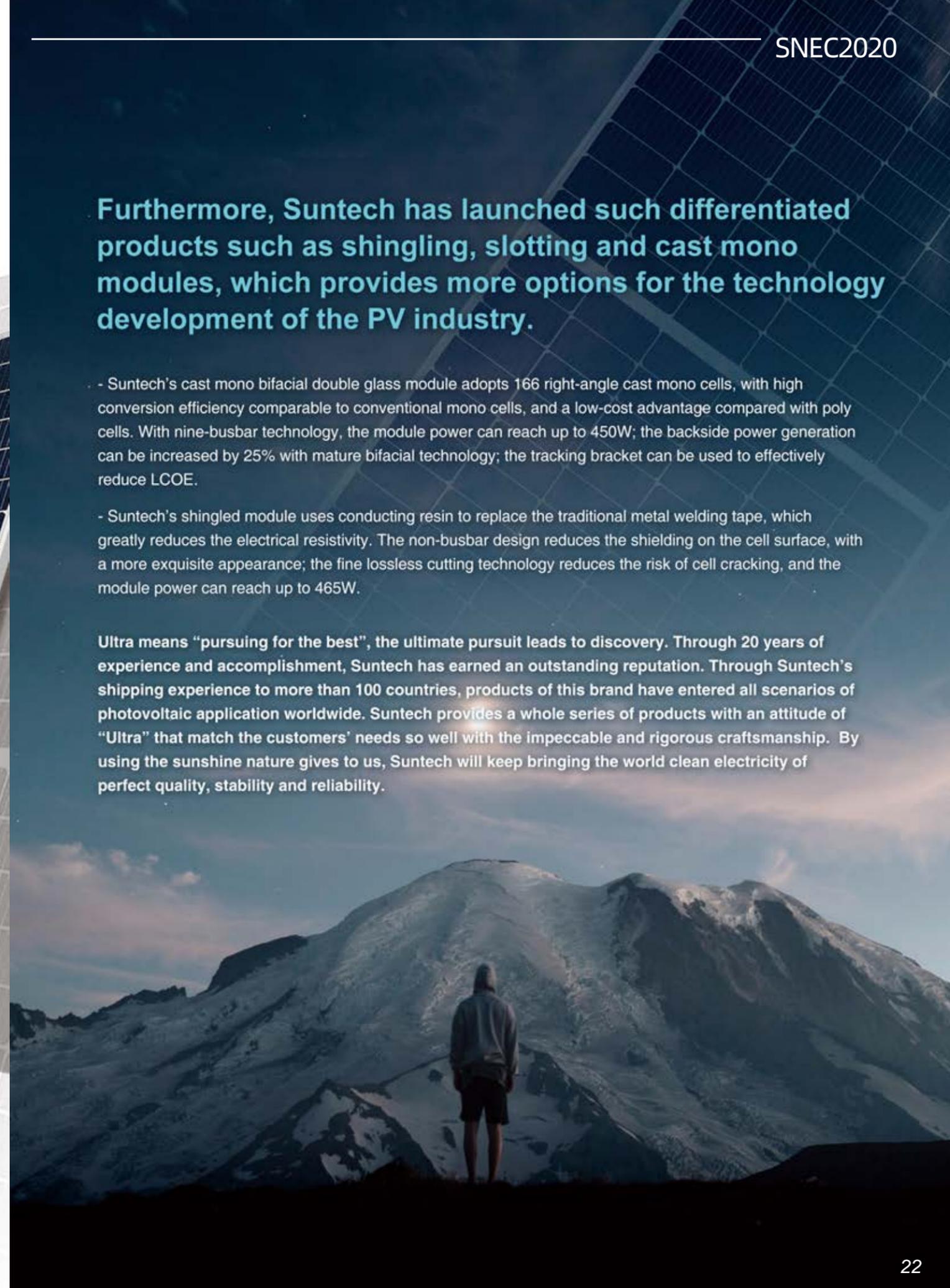
Suntech Ultra S module products have passed IEC certification, and the simultaneous released products of monofacial and bifacial layout have achieved high-performance mass production. Based on different project types and locations, the products of bifacial layout can be equipped with glass or transparent backsheets. By using direct light on the positive side of the module and reflected and scattered light on the back side, the power generation of the module can be greatly increased. According to different ground conditions, the backside generates electricity up to 25%. The 30-year warranty of power of Suntech double-glass modules can fully guarantee the project profits.



Furthermore, Suntech has launched such differentiated products such as shingling, slotting and cast mono modules, which provides more options for the technology development of the PV industry.

- Suntech's cast mono bifacial double glass module adopts 166 right-angle cast mono cells, with high conversion efficiency comparable to conventional mono cells, and a low-cost advantage compared with poly cells. With nine-busbar technology, the module power can reach up to 450W; the backside power generation can be increased by 25% with mature bifacial technology; the tracking bracket can be used to effectively reduce LCOE.
- Suntech's shingled module uses conducting resin to replace the traditional metal welding tape, which greatly reduces the electrical resistivity. The non-busbar design reduces the shielding on the cell surface, with a more exquisite appearance; the fine lossless cutting technology reduces the risk of cell cracking, and the module power can reach up to 465W.

Ultra means "pursuing for the best", the ultimate pursuit leads to discovery. Through 20 years of experience and accomplishment, Suntech has earned an outstanding reputation. Through Suntech's shipping experience to more than 100 countries, products of this brand have entered all scenarios of photovoltaic application worldwide. Suntech provides a whole series of products with an attitude of "Ultra" that match the customers' needs so well with the impeccable and rigorous craftsmanship. By using the sunshine nature gives to us, Suntech will keep bringing the world clean electricity of perfect quality, stability and reliability.



The story of Suntech's newest generation:

# THE ULTRA SERIES DISCOVERY, THE ULTIMATE PURSUIT



On February 14th, 1990  
At 6 billion kilometers away from Earth, NASA's Voyager 1  
Shot a picture  
Called "Pale Blue Dot"

In the complete darkness of our solar system  
If you watch carefully  
You will find a pale blue dot  
Yes, here, this pale blue dot  
That's home

On this blue dot  
Everyone you love  
Everyone you know  
And everyone you have ever come across  
lived out their whole lives

All the joy and suffering gathered here  
Billions of souls gathered here  
Creating unimaginable civilizations  
Every story happened here, happened on this pale  
blue dot floating in boundless space  
no matter if it was remembered or forgotten in history

From discovery  
We go on to explore and pursue  
Even after countless years  
Our urge to discover never stopped  
Because we know  
This pale blue dot is the only planet with life that we know  
of At least, this will stay true for the near future

On this pale blue dot suspended in sunlight  
We feel all the gifts from the unknown universe  
Every second  
the energy the earth receives from the sun  
is the equivalent of burning 5 million tons of coal  
Every ray of sunlight  
Is the cleanest energy of all  
It fuels the energy storage of wind, water, ocean thermal,  
wave, and biomass  
And brings the rawest power to this pale blue dot.

In 1839, at the age of 19, Frenchman Becquerel  
discovered the "photovoltaic effect"  
In 1930. German engineer Bruno Lange first proposed  
the use of this "photovoltaic effect" to produce solar cells,  
a process which converts solar energy into electricity  
In 1954, Charbin, Fuller, and Pierson of American Bell  
Labs developed the first monocrystalline silicon solar cell  
with 6% efficiency, the world's first solar cell with practical  
value

In 2001, Suntech kicked off the development of China's  
photovoltaic industry  
In 2020, Suntech, having focused on research,  
development and manufacturing of solar products for 20  
years, through its constant search for high energy density  
and high power modules, has discovered new  
possibilities for the pursuit of excellence.



This new generation module is called "Ultra"  
For "ultimate"  
It is the ultimate design in keeping with the times  
Precise non-destructive cutting technology combined with  
mature high-density packaging technology  
The maximum power exceeds 600W+  
More power generation, yet lighter in weight  
More than 1/5 weight reduction compared to mainstream  
products of the same specification  
Pursuit of superior mechanical load capacity  
37% reduction in maximum deformation compared to  
conventional specifications  
Upgraded and optimized product design  
More than 1.28% reduction of LCOE

Discovery is the ultimate pursuit  
The discovery of new possibilities for high-power modules is  
due to Suntech's 20 years of experience that have earned it the  
ultimate reputation and is due to the rich experience Suntech  
has gained from shipping to over 100 countries  
From past to present  
From present to the future  
Suntech has always had the ultimate mindset  
To be the clean energy brand most focused on customer needs  
To value and protect this pale blue dot on which we all live  
To bring both clean and reliable energy to humanity



## Suntech signed strategic cooperation agreements with China Development Bank Energy and Runergy

On Aug 9th 2020, Suntech announced to consolidate close cooperation in PV industry chains. Suntech signed strategic cooperation agreements with China Development Bank Energy and Runergy successively at SNEC 2020.



### China Development Bank Energy

aim to build a leading global clean energy industry investment company with main business scope focusing on the investment in the construction and operation in solar and wind power stations. It is also striving to tap the extended services including stored energy, hydrogen energy, energy internet and distribution of electricity. With the strategic cooperation, it is expected to achieve complementary advantages based on brands, capital, designs, services and channels and develop the markets. Both sides agreed to promote "affordable internet access" for PV generation at a fast step, to lower carbon emissions greatly and improve ecological environment quality.

### Runergy

Runergy was established in May, 2013, devoted to the development and technology of solar energy applications. With the cooperation agreement on 4GW high efficiency battery supply during 2020-2021 years between Suntech and Runergy, it is expected to take advantages to broaden brand influence for win-win development in the years to come.



## Suntech Ultra Series Wins Gigawatt Diamond Award of SNEC 2020 "Top 10 Highlights"

In order to make the latest and cutting-edge technologies and products, the experts from the organizing committee will comprehensively consider the four major factors of "advanced", "innovative", "social" and "professional" to select SNEC "Top 10 Highlights" among the exhibitors, which has become an important part of high-profile SNEC PV exhibition.

On August 10th, Suntech stood out from 2,000 exhibiting companies for its new-generation products "Ultra V 590W high-efficiency mono PERC multi-busbar PV modules" and won the Gigawatt Diamond Award in SNEC 2020 "Top 10 Highlights" event.



Suntech Ultra V modules have been tested, compared and researched repeatedly by Suntech's technical team. Based on large format 182mm silicon wafers, Suntech Ultra V modules optimize the layout profoundly and adopt high-density cell interconnect technology which shorten distance between the cells, decrease the invalid power generation area greatly, and improve the energy density of the modules when module efficiency can reach up to 21.3%. The combination of half-cut cells, multi-busbar technologies, and the auxiliary materials such as high-efficiency welding strips and high reflective backsheets can improve the utilization rate of the sunlight, with the highest module power of 590W.

Suntech has a particularly optimized module structure design and owns the exclusive patent. The module weighs 24.4KG, 15% lower than the products of the same specification in the market but with greatly improved mechanical load capacity. When the load reaches +5400 / -2400pa, the maximum stress of the module structure is reduced by 23% compared with conventional structure designs, the maximum deformation is reduced by 37%, thus avoiding the risk of micro crack loss and improving the reliability of modules.

Suntech Ultra V Series also released a bifacial layout, compatible with transparent backsheets when needed in project locations, and not only has the features of ultra-high light transmittance and excellent anti-PID performance, but can also effectively reduce the weight by more than 30% compared with the double-glass module. It can also work with the tracing bracket and decrease LCOE effectively. It is applicable to scenarios such as agriculture-fishery-solar hybrid projects (systems), largescale power plant, and power plant in deserts, tidal flats and coastal areas. We are confident that the lower LCOE brought by the high-power generation of Suntech Ultra Series products will set a new trend and development direction for the photovoltaic market in 2020!

# DATA STORY

**| NEW PRODUCTS**

**9**

Suntech's new high-power modules equipped with advanced technologies include heterojunction (HJT) modules and Ultra S/V/X series, covering large format silicon wafers of all sizes (166, 182, and 210mm).

**| MAX POWER**

**605W**

**| MAX EFFICIRNCY**

**21.3%**

**| DECREASE LCOE**

**6%+**

**| NUMBER OF CLIENTS**

**900+**

**| NUMBER OF VISITORS**

**8000+**

## POST-EXHIBITION ANALYSIS

**| Precise knowledge of both self and the threat leads to victory.**

Through post-exhibition analysis, Suntech's Marketing team and Technology R&D team had an in-depth discussion. Experience gained from this exhibition will provide a constant driving force for future sustainable development.





Let your dreams sail.  
Brave the winds and waves.  
Welcome trainees of the Suntech 2020  
New Sight Program!

Veterans are the wealth of a company, and new staff are the fresh blood. Every summer, a new group of lovely young people join Suntech with expectations. Starting their career here, these graduates will set sail in a whole new field, and will brave winds and waves to live their dreams.

Suntech always focuses on talent training. Fresh graduates joining Suntech will get systematic trainings and eventually grow into independent capable veterans. On July 21st, 26 fresh graduates joined Suntech for their first job in life. Though these young people do not have much relevant experience, expectations and dreams for their further career make each of them energetic.



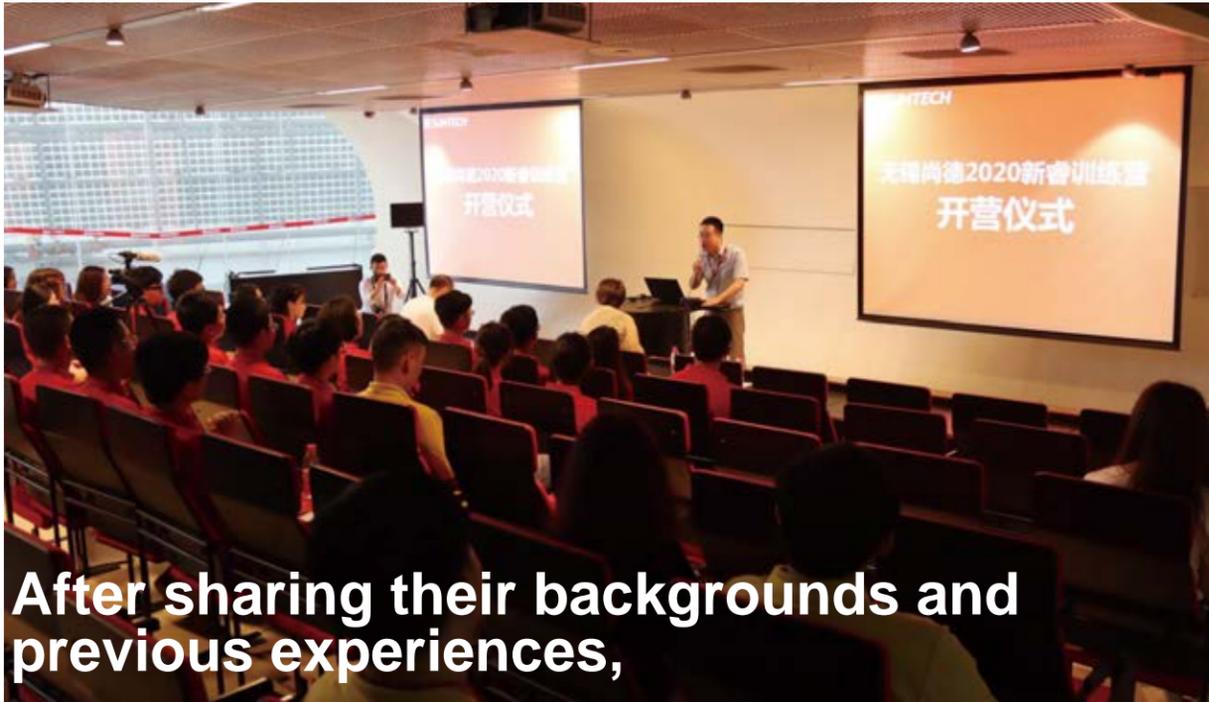
In order to help new graduates this year grow quickly and complete the transition from campus to the workplace, Suntech opened the 2020 New Sight Program training camp. This camp adopts the "1366" training model, i.e., a 1-year training cycle, 3-stage systematic training, 6 months of job training, and rapid development of 6 core qualities.



The New Sight Program training camp started with the "face-to-face talk with seniors". Trainees got their first impressions of Suntech through face-to-face communication with the employees who graduated last year and joined Suntech. They think Suntech is "a company that cares about the future of mankind", "a very promising company", "Suntech employees are very kind", and "a very reliable company".



In the self-introduction session, trainees also performed quite well. Everyone expressed their great honor to join the Suntech family and promised to work hard in the future to live up to leaders' expectations. These young people majored in different fields, including logistics engineering, international economics and trade, new energy science and engineering, etc. And they come from all over the country. Duan Weijia from Yichang, Hubei, said, "I appreciate the assistance and support for my hometown from all parts during the Covid-19 outbreak"; Qin Yuchang from Liuzhou said, "I'll treat you to the authentic Liuzhou river snails rice noodle if you come to my hometown"; Yang Qiuyu from Xinjiang joked, "Believe me, we don't ride horses". Though with different backgrounds, trainees all share the same belief that their first job will be a life-long career worth fighting for!



After sharing their backgrounds and previous experiences,

Trainees will look ahead into the future. Say goodbye to the past.

From now on we are all members of the Suntech family.

The New Sight Program training camp made a comprehensive training plan for trainees, including workplace knowledge sharing and basic skills trainings. Trainees learned the production process of photovoltaic modules at the workshop, through which they felt the unique charm of the industry. Field study helped them gain a general understanding of Suntech's module manufacturing. Their remarks were, "Basically Suntech factories are automatically operated. I thought there would be many operators. In fact, much less than I thought, thanks to the automation", and "I noticed the responsible attitude of the workshop operators".

The training camp brought trainees initial experience. They have joined their respective departments for further trainings on professional skills. The company leaders encourage everyone to find the right direction, hold a firm belief in the photovoltaic industry, always ready to further sharpen personal skills, and make progress in personal and company's development on such a platform like Suntech.

# THE ART OF PHOTOGRAPHY SHOW

Beautiful things are fleeting. Only the camera can make them last forever.

Sunset, sunrise, seasons come and go. Mountains, lakes, stars change day and night. I hope these moments can stay forever, not just in my memories. I want to record these scenes like what I see through my eyes.

My childhood was in the age of photographic film. With a Fuji point-and-shoot camera and many rolls of Kodak films, my parents recorded my childhood with those shutter sounds. I think film photography is like a one-shot deal, for each piece of film is a one-off thing. Pressing the shutter can not be reversed. After the photo is taken, you have to take the films to the darkroom and have them developed. It takes 3 to 5 days to get the final photo, not to mention the money it costs.

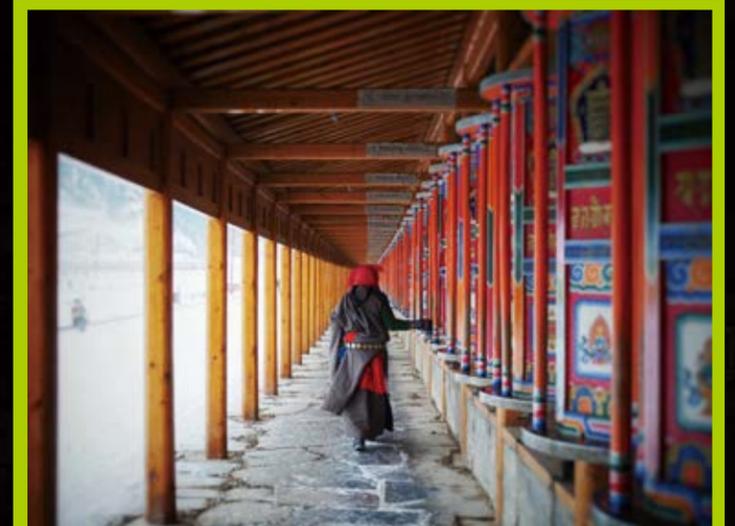
Later the era of digital cameras came. No need to worry about the cost of film and time spent in taking photos. You could take and view photos whenever you like. In a very long period of time, at least within the Nokia Era, digital cameras had been the prime tool to take photos during travel. Then we have smart phones with high-resolution cameras and larger and clearer screens. These features make smart phones excel the previous digital ones. More and more people start to take photos with mobile phones which is more convenient and efficient.

Today, taking photos is becoming cheaper and easier. In this process, some people develop photography as their hobbies and are eager to sharpen their skills. Thus, the professional camera wins a seat.

I brought my first SLR camera after entering the university, and officially started my journey of photography. I started exploring composition, focus, aperture and shutter settings. Mobile phone photography is easier and more direct, while professional one is indeed a pure pursuit of "what you see is what you get (WYSIWYG)". Digital cameras and smart phones are convenient, but their pictures are based on binary calculations. Rather, SLR cameras deliver pictures through lens reflex on the viewfinder. When the shutter is pressed, the reflector is lifted, and the image is imprinted on a photosensitive element, corresponding to what is seen in the viewfinder. This WYSIWYG accompanies the mechanical sound of the shutter, making each shot more ritualistic.

Photography is the art of light and shadow. When light is cast on the subject, different shadows are made. Sharp can become round, while round can become square. Through imagination and creativity and a change of the lens, anything can be itself, or no longer just itself.

PM Department Ge Jiaming



# SLOWLY BUT STEADILY



## Walking

At the beginning of September, the mornings and evenings start to get cooler. A new season quite different from a few days ago, suddenly it is autumn. The change of seasons is like a revolving door, the speed of which depends on how fast we live. People in a rush will likely not sense this process of change. They are only aware of the current season once they feel cold. People who live slowly can always sense the change from the falling leaves nearby the bus station, fruit stand on the street and changes of the length of day and night.

Today's society is measured by digits and speed. The pace of life is so fast that people don't even want to walk as they prefer to go faster. We are all chasing efficiency. What I want to express here is that the fastest way is often to "slow down". And I do not mean slowness in the way that Flash Slothmore moves and talks in the movie Zootopia, nor do I support laziness or procrastination. What I mean is, we need to find the balance in our busy lives and relax our mind and mood.

Slowness is a kind of ease. Two months ago, me and other colleagues who just joined the company may still have been busy with graduation or job seeking. If there is one word to describe that time, I think "overwhelming" would be the right one. Why? Because we were in a rush. Only by slowing down can we see clearly the way forward and our own positioning. For new beginners like us, we shall guard against arrogance and impetuosity and move forward with ease and unhurried speed.

Slowness is a way of accumulation. From the perspective of an employee, slowness is not to lay down our work. Rather, we shall find a more mature way to accomplish tasks. Maturity might be reflected through professional proficiency or personal charm. From the perspective of Suntech, while pursuing high-power, high-efficiency modules, it shall slow down to highlight the high-quality product and company development. Circular economy is not achieved through quick success and instant benefits.

Before I joined the company, I went trekking in the fields with friends several times. I usually do not talk much during trekking. Rather, I watch the road, listening to the wind whistle and smelling the natural odor from sheep and cows. When I later arranged the pictures, I found I took lots of pictures of people's backs. It's not because I like walking at the end. I just enjoy walking slowly.

PM Department  
Li Feiyang



# INDULGENCE IN THE SMALL WORLD OF MOVIES



**I do not remember when I started to enjoy watching movies more and more.**

At first, I watched a movie once in a while just to pass the time, or just for entertainment and relaxation. It's not that I like a certain genre or movie in particular, it's just that I somehow fall in love with the current environment and the mood I'm in when watching a movie, making me feel comfortable and relaxed.

I always watch movies to relax myself after a whole day's work at Suntech. For some people, sitting in a closed space for two hours or longer might be torture. However, to me it feels almost ceremonial. I like to turn on the projector in my small room and select some highly rated movie the Douban list and spend two hours in tranquility and wonder. Whereas books are like spiritual worlds in a thousand different forms, needing my full imagination, movies are direct and vivid, bringing you right into that situation at any moment and making you feel it instantly.

In that short period, I can have a dialogue with myself. This 120 minutes is a window for me to see into other people's lives and connect with them through a cathartic experience. It's been said that the invention of cinema has extended our lives three times, because in movies, we get at least twice as much life experience from it.



The world of movies is so colorful. There is peaceful love, kindness of ordinary people, wrongdoings, the love of a lifetime. There is also heroic behavior and the inability to change an undesirable situation. You never know which scene, clip, or dialogue from a movie will bring back memories.

Apart from movie experience, I think this is also the maturity of my own mind. At the age of 16 or 17, the more flaunting or unreasonable things are, the more I liked them. As I grew up, my views and values changed a lot. With the ups and downs of life, with reunions and departures, we become more realistic, grateful, and down-to-earth.

Movies bring me information, enhance my sensibility, develop my taste and broaden my horizon. Life, if it's too orderly or too mediocre, makes people, at least me, uneasy.

This is why I save some time to relax and entertain myself through watching movies.

Logistics Department  
Lang Yuanyuan



# A NEWBIE'S THOUGHTS AT THE WORKPLACE

Fabricate

Time flies. It has been one and half months since I entered Suntech. During this period of time, I have experienced a lot: joining the training camp, department introduction and allocation, equipment and maintenance learning, etc.

As soon as I joined the company, I took two-week induction training. From the entry ceremony to the introduction of departmental functions, and then on to the P2 and P3 factory to learn new things. In these two weeks, I have learned about the company's business philosophy, the functions of various departments, the operation mode of the production line, and more.

To be honest, this is very different from what I thought at first. I thought we would go directly into the according department as soon as we entered the company, working and learning. However, the company did not arrange it this way. This has several advantages: It gives us enough time to get used to the company's pace and rhythm. Secondly, it deepens our understanding of the company. And last but not least, getting to know colleagues from different departments will be of great help in the future.

The production line is another place different from what I expected. I thought that there would be a lot of employees with relatively few machines along the production line. However, in fact, equipment accounts for the majority, while the number of employees is quite small. There are only about 40 employees in the front and back of a production line; excluding the assembly line, there are about 35 sets of equipment, basically one person in charge of one set. It shows that the company has a very high degree of automation.

As a newcomer in the department, I was quite nervous and felt that I knew little about the company's equipment. However, after some time I started to clearly see the harmony between colleagues and leaders: we sit together bragging and chatting, repair equipment together and solve problems together. All this makes me fit into my department, and I am determined to learn equipment maintenance as soon as possible, and hope one day I can help my colleagues.

Finally, I am honored to join the Suntech family; I am glad to work with my colleagues for the future of Suntech!



Manufacture Department  
Wu Zhaolei



# Management



# A NEWBIE'S JOURNEY TO SUNTECH



Project Management Department  
Lin Yanzhi

Going from confusion to a peace of mind, from a small team to a large group: the opening ceremony with the song Suntech Welcomes You and two weeks of orientation with 26 buddies in the training camp have helped me integrate myself into the company and enable me to transit from school to company life. Gathered, we are like a fire burning; scattered, we are like stars twinkling. We, the newcomers are now placed in different departments to offer our contributions.

In the first meeting of my new department, my colleagues reported on the project progress, cost analysis and risk analysis, which made me understand the functions of my department. At the same time, I felt like there was a long way to go. At the end of the first week, I attended the Shanghai SNEC Photovoltaic Exhibition, where I saw not only the vigorous development of the photovoltaic industry but also the fierce competition between various companies.

Only through continuous learning and growth can we stand strong. In the department, the boss and my mentor worked out a thorough training plan for me. For the production line, I learned the production line process and each standard operation procedure (SOP): from how a cell turns into a module to daily production line, this helped me learn and observe new details. I learned what the supervisor did, and worked with my mentor to check the manufacturers and specifications of the materials used in the project with the project list and BOM list. At IQC, I also spent one week studying and conducted examinations of incoming materials. I mastered the inspection standards for all module related materials such as cells, EVA, backsheets: appearance, size, and performance.

Apply what you have learned into practice, and practice in return promotes learning, thus, learning and practice enhance each other. After I mastered the IQC standard, my mentor took me to a project review meeting. Departments of sales, technology, PM, project and quality all gathered together to review the standards and requirements set by the customer in the contract. When the customer's standards were not in line with our expected ones, we needed to list the deviation, negotiate with the customer and revise the contract. When I found I could understand the standards during the project review, the unease about the future work dissipated a little. The knowledge I have learned now will lay the solid foundation for my future work. I will apply what I have learned in my work and keep learning. I believe I will become more independent and capable in the future.



# GLOBAL SUNTECH

## Combining sewage treatment with photovoltaic power generation

Suntech advances the single largest "water affairs + photovoltaic" green energy in-depth development

When a constant stream of clean energy from the photovoltaic power station reaches every corner of sewage treatment plant, it marks the change of the power consumption mode from traditional thermal power generation to green and clean energy.

Recently, the photovoltaic project of Matougang Sewage Treatment Plant in Zhengzhou City, Henan Province, supplied by Suntech, has been successfully connected to the grid. With a total supply of 27MW, the project is running steadily. The green power generated by the project can meet the needs of the sewage treatment plant and won the title of China's largest single unit "water + photovoltaic" power station.

### Products with high reliability guarantee continuous power generation

The sewage treatment plant has the characteristics of high environmental humidity and highly corrosive gases, which puts forward high requirements for the quality of modules. After multi-party investigation and technical demonstration, Suntech's high-efficiency polycrystalline double-glass products were finally adopted. These products have excellent corrosion resistance and a strong ability to prevent water vapor penetration. In addition, the IP68 level of waterproof and dustproof ability can effectively guarantee stable power generation in the 30-year operating cycle. Furthermore, the application effect of Suntech products in various special environments has been verified, all with good performance, and there has been no aging, rust and corrosion or other adverse phenomena.



### New breakthrough in environmental protection

A total of 101,234 Suntech high-efficiency polycrystalline double-glass modules have been installed in a project in Huiji District, Zhengzhou, Henan Province. The project can generate about 36.74 million kWh of clean electricity every year, which is equivalent to saving about 13,200 tons of coal, reducing about 32,900 tons of CO2 emissions and 8,976 tons of dust emissions per year. Introducing clean power to the treatment of pollutants in the water supply and drainage fields creates a win-win situation for both the air and water environments, while at the same time promoting local energy conservation, emission reduction and energy structure optimization.

### New Win-Win model for "photovoltaic + water affairs"

"For a long time, sewage treatment plants have been large consumers of electricity. By implementing photovoltaics, these plants are contributing to the transition to a conservation-oriented society, with obvious ecological and environmental benefits." Zhongyuan environmental protection Matougang Sewage Treatment Plant Director Zhou Peng said. Sewage treatment is a high-energy-consumption industry, the goal of sewage treatment is to speed up the process of sustainable social development, and the traditional thermal power generation mode runs counter to the goal of green development. Therefore, the combination of photovoltaic power generation and sewage treatment will become an important model for the future development of the sewage treatment industry.



"For a long time, sewage treatment plants have been large consumers of electricity. By implementing photovoltaics, these plants are contributing to the transition to a conservation-oriented society, with obvious ecological and environmental benefits." Zhongyuan environmental protection Matougang Sewage Treatment Plant Director Zhou Peng said. Sewage treatment is a high-energy-consumption industry, the goal of sewage treatment is to speed up the process of sustainable social development, and the traditional thermal power generation mode runs counter to the goal of green development. Therefore, the combination of photovoltaic power generation and sewage treatment will become an important model for the future development of the sewage treatment industry.

# German floating PV plant supplied by Suntech works better than expected

Recently, Germany's largest floating PV power plant supplied by Suntech generated far more solar power than expected. After one year's stable operation, the power plant has been able to reduce its electricity bill 10% for Gravel Company Ossola.



Back in July 2019, the high-efficiency PV modules of 750 kW supplied by Suntech were installed on the surface of lake Baggersee Maiwald in Renchen in southern Germany. Until now, the power plant is still the largest floating PV power plant in Germany. According to the project developer Erdgas Südwest, 2300 pieces of modules on the lake generated a total of 860 MWh of solar energy in the first year, exceeding the expected 800 MWh. Ossola, a 100-year-old gravel plant operator, uses around 75% of the electricity and reduces the electricity cost by 10%. Another third of the remaining power is fed into the public electrical grid and distributed directly by project partner Erdgas Südwest.

The floating power plant experienced extreme weather in February this year, with all Suntech modules remaining intact through the storm. Suntech modules of IP68 waterproof ratings are also fully qualified for the requirements of continuous power generation while floating, and the stable, reliable and efficient performance of power generation has been highly praised by the customers.

"It was the right decision to invest in the project. By using the green electricity produced by the floating power plant, we have reduced our electricity cost. Meanwhile, using existing quarry ponds for floating power plants is protecting our environment through a different approach", said gravel plant operator Armin Ossola, who spent about 1 million euros on the project. "We found Suntech through Erdgas Südwest. As a trusted PV brand, Suntech has a good reputation in the German market, producing PV modules not only with better conversion efficiency but also reliable quality."



Compared with traditional PV power plants, floating power plants not only save land resources but also reduce water evaporation. The cooling effect of water bodies on PV modules and cables can also significantly enhance the efficiency of power generation. Boris Heller, the director for project development of the German gas company Erdgas Südwest, said: "After this successful attempt, we continued our investigation on floating power plant projects in recent months, and developed more areas suitable for building floating power stations. In the future, we hope to strengthen cooperation in this respect and further promote the adjustment of industry structure in traditional German industrial cities."

# POPULAR SCIENCE CLASSROOM

## Patent Tips

### What is a patent?

A patent is the granting of an intellectual property right by a sovereign authority to an inventor. It refers to the inventor or assignee's right of possession, use, disposal and profit according to the patent law.

### What are the characteristics of a patent?

Patents are characterized by exclusivity, publicity, territoriality, and temporality. A patent needs to fully disclose its technical features or design in order to clearly define the scope of protection, i.e. to exchange disclosure for protection at a specific time and in a specific area. Therefore, a patent is a powerful weapon to dominate the existing market and seize a potential one.

### What types of patents does China have?

Different countries have different types of patents. In China, the patent law defines 3 types of patents, namely the invention patent, utility patent and design patent.

Research Center  
Yan Tingting



### What is the difference between the three types of patents?

1) Different protected objects  
In patent law, there are the following definitions:  
An "invention" is defined as a new technical solution for a product, a method or an improvement thereof. A "utility" model is a new technical solution for the shape, structure or combination of a product that is suitable for practical use. And "design" is defined as a new design for a product that is aesthetically pleasing and suitable for industrial application.

2) Different Examination and Approval of Patent Applications  
For the invention patent application, there are two steps: the preliminary examination and substantive examination. In the substantive examination, the patent examiner will check the existing technical literature and patent technology in the world, and examine whether the patent application has novelty and creativity. The property rights of an invention that has passed the substantive examination are relatively stable, which is the reason why invention patents are more valuable.

Utility model and design patents do not have a substantive examination process. If no reason for rejection is found during the preliminary examination, then the patent right will be granted. Therefore, these two types of patents are more easily authorized, but the patent rights are unstable and often invalidated.

3) Different protection terms  
The term of protection for invention patents is 20 years, and that for utility model and design patents is 10 years, which shall be calculated from the date of patent application.

	Protected object	Examination rules	Patent right term
Invention patent	Product , process	substantive examination	20 years
utility patent	Products with certain shape and structure	preliminary examination	10 years
design patent	Decorative products suitable for industrial application	preliminary examination	10 years

### Is there a fast way to distinguish different types of patents?

We often see the patent number (also known as patent application number) in commercial advertisements. How can we get a general idea of a patent by looking at the patent number? The patent number is composed of "application year number + classification number + serial number + spacer (.) + check code". Classification number 1 stands for invention, 2 for utility model, and 3 for design.

<b>2018</b> 2018年申请	<b>1</b> 发明	<b>0166588 . 6</b>
<b>2019</b> 2019年申请	<b>2</b> 实用新型	<b>1231932 . 9</b>
<b>2019</b> 2019年申请	<b>3</b> 外观设计	<b>0529886 . 2</b>

### Some interesting questions

- 1) Are patents granted and protected all over the world?  
A: No. The patent right has national boundaries. Only patents filed in a designated country enjoy the legal protection of that country.
- 2) Who is the most famous patent examiner of the 20th century?  
A: Albert Einstein. Einstein worked as a patent examiner in Switzerland for seven years.

### Wuxi Suntech takes scientific research seriously and strengthens patent protection

Suntech attaches importance to the role of patents in enterprise management. It has an intellectual property management department and full-time management personnel. Suntech patents cover photovoltaic cells, photovoltaic modules, photovoltaic application systems, photovoltaic production equipment, and other fields. As of September 2020, Suntech has applied for a total of 887 patents and got 548 authorized patents. The number of patents applied and authorized is at the leading level in the domestic photovoltaic industry, and a number of patents have won the honorary titles of China Patent Excellence Award, Jiangsu Patent Gold Award, and Wuxi Patent Gold Award.



# LOW CARBON GUARDS

Suntech Party committee carries out "walking classroom" and solar energy environmental protection science popularization activities for primary and middle school students in Xinwu District

In order to promote green and low-carbon concepts and popularize scientific knowledge about solar energy, Suntech's Party committee, together with the Xinwu District Education Bureau, carried out a "walking classroom" and solar energy environmental protection science activity for primary and secondary school students from August 22 to 23. More than 200 students and their parents took part in the activity.



The activities were divided into 6 batches. The party members' representatives and receptionists gave a vivid solar science popularization course to primary and secondary school students in terms of basic knowledge of solar energy, power generation principles and application in life in simple language. The teachers explained it carefully, and the students studied with an open mind. There was also a lively Q&A session. Through this activity, the students went out of the classroom and learned about the application of a series of solar power products and other low-carbon energy-saving products in life and completed the science popularization learning from theory to practice.

The leaders of the Party committee of the company said that it is their social responsibility to publicize the concept of green and low-carbon concepts, actively spreading awareness of energy conservation and environmental protection by "inviting in" and "going out". Solar science education should start with children, and we should build up their awareness of energy saving and environmental protection when they are young, so that when they grow up, they can contribute to the green and low-carbon industry.





12 YEARS OF SPRING AND AUTUMN, A CYCLE OF 12 YEARS, THE LONG-LASTING ENDURANCE OF "CELL PEOPLE"

P2 Manufacture Department  
Xu Mingjing

Whenever I see rows and rows of neatly arranged modules, I can't help but notice the colors of those solar cells, colors representing both struggle and future.

When talking about Suntech's cell manufacturing process, his shy face immediately exudes a bright look. He is Xu Mingjing, the process control officer of the battery factory.

Rigorous and meticulous thinking are the pillars of his work attitude; his love of laughter, humor and optimism are his character tags; and his dream of long-lasting endurance is the Suntech dream that he has always held on to.

### Rigorous and meticulous thinking are the pillars of his work attitude

Driven by the current market situation, the control of manufacturing cost has entered the point of white heat, and the fierce collision has evolved into vital importance. "After the new graphics of the night shift were put on line yesterday, the control of wet weight was not stable, and the range was more than 3mg. Today, the day shift adjusted the proportion and continues to verify; the fluctuation value of chemicals should be paid attention to, and the manual addition amount and control accuracy should be uploaded to see the overall fluctuation value every day." The internal morning meeting was held in a tense atmosphere, listening to the problem of each module, giving suggestions for improvement, and putting forward the next step in the planning. Then hurry to the production line, and start the work for the day. "To save costs in the process, to verify the quantity, and to improve the quality and the quality of the technology" is his long-term direction of cost reduction. He said, "I have been telling my team that we must be like generals with weapons drawn. To improve the existing technology is to reduce the cost. If we want to have both, the cost reduction and the quality and efficiency improvement are not in conflict. As long as we beat this this bone, we can certainly find a balance."

### Smiling, humorous, optimistic are his character tags

He gets along well with his colleagues; everyone likes to call him "Fat brother". He himself also likes this name. When the people around him are not happy, he often jumps out to do the work of the neighborhood committee and brighten their mood. His optimistic personality is also purposeful: the pressure to reduce the cost is high, the bottleneck period and communication also need improvement. He can always observe carefully the changes of his colleagues or subordinates and care for their mood.

When talking about the two lovely kids in the family, he said that he was only a father / husband / son with a score of 50 at home. Because he was busy with work, sometimes he arrived home after work and had to rush back to the company immediately. For some time, the two kids felt that their father's favorite thing was the mobile phone. He felt guilty. From then on, he would allocate the time at home every day to be able to watch them grow: "Playing games with my son and braiding the doll's hair with my girl; I want to work hard and juggle my role in the family as well, so I need to keep figuring things out and try to get a good score at the end of the year!"

"Since I joined Suntech after graduation from University, I have gradually grown up from a front-line engineer to a technical manager. My most sunny days are here. Suntech has witnessed every role change in the first half of my life. This is where my dream begins! I also firmly believe that it will become more and more bright and vital. At 20 years, Suntech is still a teenager, and also the place where my dream began! "

# PRODUCT LINE IN PROGRESS

Manufacture Department  
NO.3 & NO.4 Teams

In a rapidly changing social environment, an efficient team is an indispensable factor for success. The mutual help, cooperation and learning from each other among team members will lay a good foundation for their own and collective development. In this big family, team building can not only improve the professional quality of personnel, but also play an important role in improving the image of the factory.

There are such active engineering teams in the production department No. 3 and No. 4. In the past half year, these departments switched the product line many times, trying to meet the demand for shipment of orders. Switching and maintenance often require personnel to enter into the machine for operation, replace laminated leather and vacuum pumps, and the worker's clothes are often wet with sweat. Frequent switching is time-consuming and labor-intensive. There are also disputes during the switching, such as how to shorten the switching time, how to optimize the switching process, and through these discussions continuous progress will be made. Each time they will summarize the process after the switch, and though they are tired they are all happy and satisfied and enjoy the team success together.

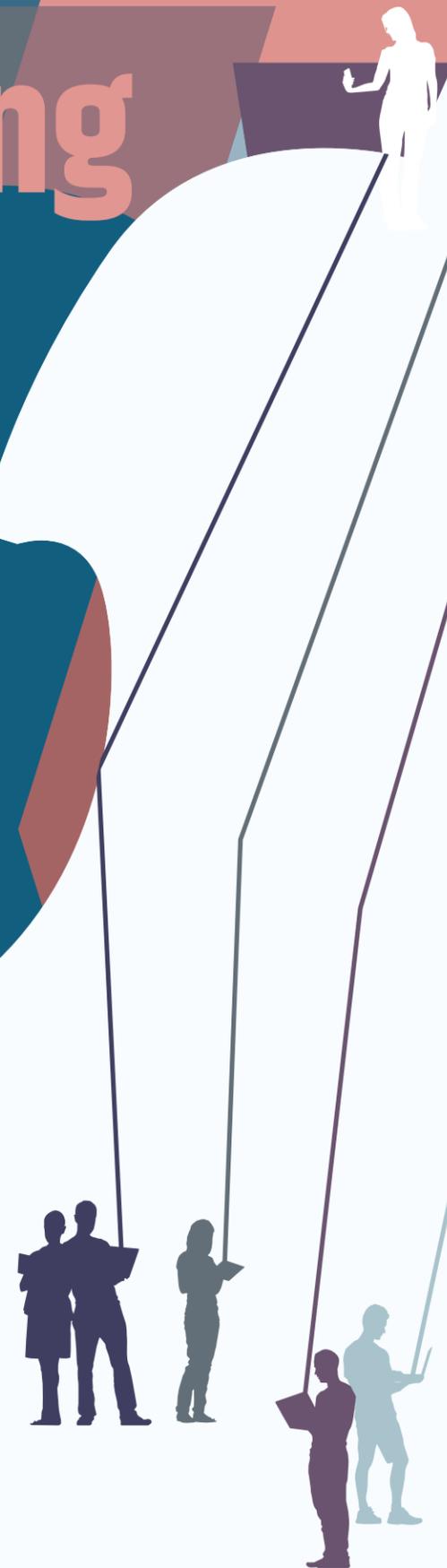
Due to some uncontrollable factors of the production materials, like a change from monocrystalline to polycrystalline, from double auxiliary to single auxiliary, the material switched almost every other shift. The color of the cell has to be switched back and forth many times every day, sometimes a shift changes colors 24 times, sometimes a shift switches 42 small orders. Frequent switching is common for cell manufacturers, and the consumption of welding tape is 117 rolls a day. Facing a series of tedious actions, such as dismantling, unloading, loading, welding, throwing, and point-to-point, the team members never complained, but made their best efforts to reduce productivity losses, and the tenacity affected everyone in the team. They just joked around with each other and said they lost weight again today.

Because they switched the product line so many times, the daily greeting became: Have you switched today? Hearing this, they felt happy but also had no other choice. What they can do is put all their effort to work again with tired smiles on their faces.

We believe that under the guidance of all our leaders, the tangent speed will be more and more optimized, and the equipment anomalies caused by tangent will be less and less, in order to improve the data to achieve the goal. Let's do our best!



# Marketing Story



# Spirited Away - Trip to the Animated MiaoVillage, Guizhou Province



In the humid summer, I hid myself in the grand mountains in southeast of Guizhou.  
I sat on the observation platform to see the sunrise of a newborn day.  
I sat in the sunlight at dusk to watch the city decline.

This is a special trip. All classmates of our major set out for Miao Village in the deepest mountains in Guizhou.  
This trip is very relaxing and enjoyable, probably because I traveled with my classmates who have been with me for years.

We rested in a small inn under the observation platform.  
Going several more steps, you could see stairs leading to the foot of the hill.

Sour soup on the long table feast,  
Folk melody by an inn lounge singer.  
These are the authentic customs in Miao Village.

The roof of the inn is the best sightseeing location.  
Sitting on the bench,  
I enjoyed watching the sky, terrace fields and Miao Village.

The sun went down over the mountains,  
and could not be seen anymore. But the changes in the clouds were still visible.  
Night falls, lights go off,  
Life goes on.

Global Marketing Department  
Chen Ying

## Tips:

Unique long table feast goes with singing and high-water toasts. Very atmospheric.  
If you like photography, take drones with you. Seeing from the God's perspective never goes wrong.  
Go hiking, go into the terrace fields, listen to the sound of crickets, chat with the locals, and you will learn the history of the terrace fields and which field belongs to who. It might be unexpected and surprising for you!  
Climbing the mountains is a must, do not miss the scenery of winding alleys in mountains.

# Light and Shadow for Me



With the original intention of recording my life, photography has been my hobby for a full decade now.

I am a self-proclaimed maniac for camera equipment. I changed my camera from Canon to Sony, to Pentax, to Leica, all while reexamining the "head" – myself – behind the lens. Maybe this is how everyone grows up. After experiencing the flashy, glamorous side, we start to turn our focus inwards, reflecting our concerns and perceptions.

Compared to business profile photography, I am more enchanted with those photos of momentary humanity or historic and quiet mountains and rivers. The dynamic former one and quiet latter one highlights a harmonious coexistence of human beings and nature. Stumbling footsteps on the street, steam from a breakfast shop, historical relics under the shade, these describe the energy of basic life. Intermittent showers in mountains, paddles on both sides of boats, and the flapping birds on the other hand are a beautiful paradise. People say you will not find beautiful scenery in familiar places, and this might be true. In a metropolis made of iron and cement, many are not content with their present lives yet fail to get out of their comfort zone. But leaving your comfort zone might be the only way to have faith, to have the soul experience the simple essence of life, to worship the magnificent nature of this planet.

I take photography as an approach towards both ways of life. In places I am familiar with, I keep my enthusiasm. I refuse to get numb when life gets repetitive. I make an effort by looking at a scenery through a fresh pair of eyes. The sound of the shutter can capture fleeting joy or anger, looking up or looking down, all providing a new glimpse at life. Just like photographs can have cold or warm color temperatures, so does life have its "cold" and "warm" moments as well. Through the slightly modified "unrealness" of photographs, we can reexamine ordinary moments and give them new colors.

Light and shadow, for me, are no longer about equipment, composition, and retouching only. In my mind, instead, they are rather about subjective thoughts, the attention and perception of small things in limited scenes. This hobby forces me to have more passion towards life and be more sensitive to beautiful moments. Though time flies, the beauty and ugliness, good and evil remain unchanged; though memories will not come back, and what you see is better than what you get in the lens, I still stay true to photography. I still perceive another world through my lens.



**May that beauty  
stay with you and me  
through lights and  
shadows.**

Global Marketing Department  
Jiao Huihui

# It's a beautiful day, so let's go! A Less Known Place for Autumn in Wuxi

Global Marketing Department  
Sue Wang

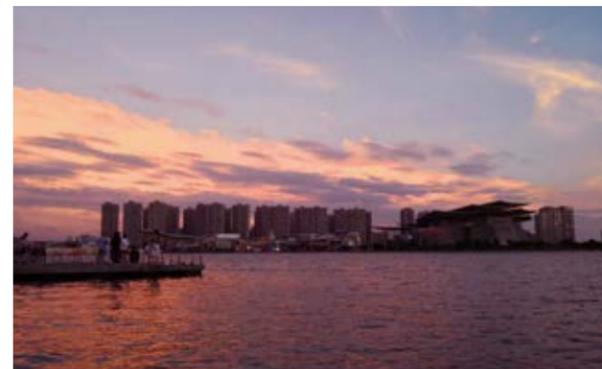
The time for annual autumn outing is approaching. Have you already started making plans? Turtle Head Isle (Yuantouzhu) and Xihui Scenery Area certainly are the most famous places for an autumn outing in Wuxi, but just the thought of the crowds during holidays would already kill the joy. In fact, it is not hard to find a place where you can enjoy the beautiful scenery in autumn here. As a local who rarely follows the crowds, I would like to take you to explore these two less known scenic spots, avoid the flood of crowds and enjoy the beauty of this city during the precious holiday time. Let's go!



## Want to climb the mountain together? Next to the Huazang Temple is a fabulous scenery.

Huazang Temple is known as one of the top 10 famous temples in the region south of the Yangtze River (Jiangnan). Yet Huazang Mountain behind it is not well known to the public. This mountain, located in the Eighteen Lakes of Hubin Scenery Area, is to the south of the Nine Dragon Lake and surrounded by Huazang Temple. It is a recreation place for hikers in Wuxi. Huazang Mountain is 150 meters high and has many trails alongside which there are luxuriant plants. It is like a natural oxygen bar. On the top of the mountain, there is wide viewing platform, different from what you see along the trail, providing a panoramic view of the city, the mountains, and the lake. After enjoying the sightseeing on the top, you can return from where you came or come down from the northern slope and go to the Nine Dragon Lake Holiday Resort.

**Route:** from Taihu Ring Road enter Huazang Temple auxiliary road and the entrance for the trail is 50 meters ahead



## The combination of the ancient and the present: Master Gao's Waterside Residence

**Route:**  
Jincheng Xilu- entrance of Waterside Residence

Master Gao's Waterside Residence is a monumental garden, where cultural and natural landscape is integrated into one. Located in the north bank of East Li Lake, to the east of the Li Lake Bridge, it is a seclusion place for reading next to Wuli Lake that Master Gao Panlong built. Gao himself was a famous local thinker, politician and literary scholar during the Ming Dynasty. Here you are able to "get the view of mountain and water". The superior geographical location of Master Gao's Waterside Residence endows it a unique tranquility in busy life. On the other side of the garden, the most bustling place in Binhu District is right across, with the water in between. Over there, the theaters stand and the grand bridges span over with reflections on the water. In daytime or at night, in Master Gao's Waterside Residence, you can enjoy the vast and misty water of Li Lake, ponder the histories of the Ming Dynasty and appreciate the cultural heritage.

# Skincare Diary During Pregnancy

Global Marketing  
Department  
Anne Wu

This is the experience of a girl in the 35th week of pregnancy. I have the combination skin type. After 8 months' test, my skin now is in good condition, with no spots. Acne is reduced dramatically, with one or two left, because I cannot quit eating spicy food, which irritates the skin. In summer I did not become that tanned either. Apart from the app Beauty Training I recommend you check if the products are pregnancy-friendly. In this article, I will share my experience of skin care during pregnancy. Say goodbye to the weary and old face. You can still have young and tender skin. But everyone has different skin types, and the reaction during pregnancy varies from person to person. My sharing is based on my own experience and only provides a reference.

## The Skincare product:

Skincare products are a necessity for daily skincare and a must during pregnancy. Since the skin during this special time is more sensitive, you need to pay attention to moisturize your skin to keep a balance between the water and oil in your skin. If it is too dry, the spots will come; if it is too oily, the acne will come. What a dilemma.

### 1)Basic skincare:

**Channel mousse comfort cream cleanser + Shiseido Ultimate power infusing concentrate + Clarins Multi-active treatment essence (first) /La mer treatment lotion (second) + Sisley biological compound + facial cream (if your pregnancy is during summer, facial cream can be avoided)**

Experience: no matter what the skincare product is, the first thing to do is to check if there are unsuitable ingredients for pregnant women. Choose the one suitable for yourself but do not use whitening products during pregnancy.

### 2)Deep skincare:

**Fresh sugar face polish + rose deep hydration mask (daubing, once a week) Dr. Jart + Vital hydra solution + AHC hyaluronic acid mask + Centella asiatica soothing mask + snake venom eye mask (paper, three times a week)**

Experience: do not use beauty instruments during pregnancy and the first 4 months of lactation period. You can use hands to massage your face when you use the skincare products to help with metabolism.

### 3)Sun block: Clarins sun cream (facial) + Tzz sun cream (body)

Experience: because of the COVID-19 pandemic, we need to wear masks, so I didn't use the sun cream the whole summer. But the mask and too much skin oil make the skin liable to have acne.

### 4)Body care: Aroma senses skincare shower + Mamakids body lotion + Bio stretch mark oil

Experience: apart from the face, our body is also aging. Especially during pregnancy, your body will swell and you get edema. Skincare shower can filter the chlorine in the water. With its filter elements filled with various vitamins, showering makes you smell fragrant and good. No need to mention how important the body lotion is. For me I used two products at the same time. To prevent stretch marks, you have to use as much as possible – do not be lazy.

## Drinks that are good for your skin:

Health care means you care for your skin too. Women are made of water, as we say. Compared to my pre-pregnancy time, I drank a lot more water and had less junk drinks. I also reduced intake of sugar greatly. The following are my recommendations for pregnant women to drink:

### 1)Lemon water:

girls who don't like to drink boiled water can put one piece of lemon in it, so the water has some taste, and you can intake Vitamin C. It also helps with skin whitening.

### 2)Meiji low fat milk (for summer) /A2 milk powder for pregnant women (for autumn and winter) + Five grains mill (little pregnancy's luck):

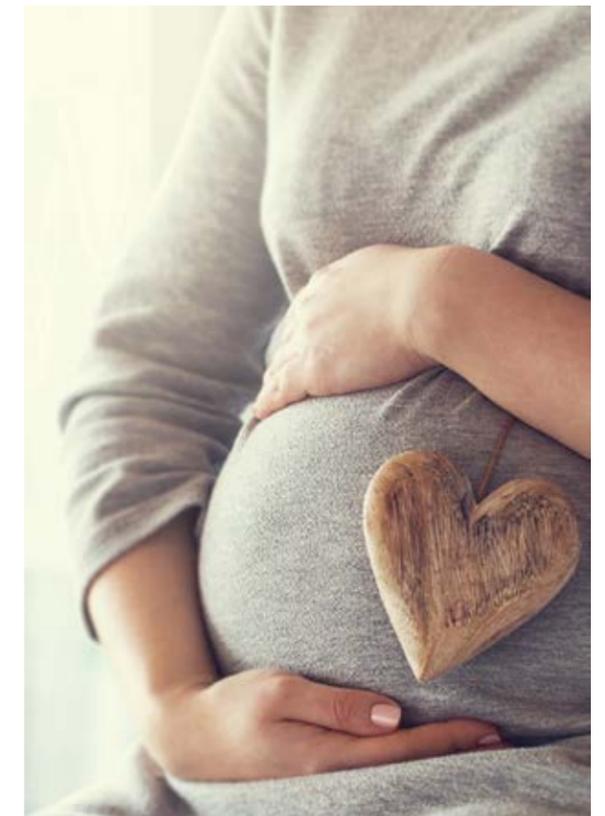
every day one glass of milk added with 2 spoons of the grains is a must for my breakfast. I suggest choosing low fat milk because the fat content of milk is relatively high. Also, fresh milk is preferred due to its shorter shelf life. In autumn and winter, the milk for pregnant women can replace fresh milk. It can save you some time and the milk powder actually has enough nutrition for you. It is also suggested during lactation period to increase breast milk.

### 3)Bird's nest:

bird's nest with milk or yogurt as night meal before sleep. The advantages are obvious. It is rich in sialic acid, beneficial to the skin's elasticity and the growth of your baby.

### 4)Tender coconut:

low sugar and calorie. Basically 3 coconuts every week. It can ease your thirst in summer and purify your amniotic fluid. One stone two birds. Just one more month and I will meet my baby. I will share my labor and after-labor experience with you. See you then.



# Luna's Bakery Class

Global Marketing Department  
Luna Luo

Are you still ordering taro sweets from Meet Fresh? Come on, here is the recipe to some homemade coconut milk taro dessert!

A saying from the Legends of Monkey King goes: "Don't you think the sunset is beautiful? I only have to look at this to keep going west every day."

To girls, this dessert is just as beautiful as that sunset from the legend. This dessert will take away all the sadness from you!

In this session of Luna's bakery class, we bring you a type of dessert specially for hot summers: the glutinous and soft coconut milk taro dessert. It tastes cool and delicious!

There are thousands of taro recipes already. But if you want to make it glutinous and soft but not sticky, you need to find good ingredients. A saying from the Legends of Monkey King goes:

"Don't you think the sunset is beautiful? I only have to look at this to keep going west every day."

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## INGREDIENTS:

### Taro (360g readymade)

Peeled Puli taro	200g
Tapioca starch A	110g
Boiling water A	70g

### Red sweet potato starch ball

Peeled red potato	200g
Tapioca starch B	110g
Boiling water B	45g

### Purple sweet potato starch ball

Peeled purple potato	200g
Tapioca starch C	110g
Boiling water C	70g

### Herb jelly

Herb jelly powder	25g
Boiled water D	125g
Boiling water D	450g

### Mixture (for 2 persons)

Coconut milk	100g
Milk	150g
Condensed milk	15g
Three-colored starch balls	40
Honey red beans	2 tablespoons
Some amount of drinkable icy water (for cooling down the starch balls)	
Castor sugar (for mixing the starch balls)	15g



**Step 1:**  
Prepare all the ingredients and make taro balls: chop the purple and red sweet potato and peeled Lipu taro into big chunks.

**Step 2:**  
Put them in the utensil respectively and steam them over high heat for 30 mins.



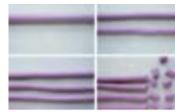
**Step 3:**  
Smash them into paste with rolling pin when they are hot. Repeat this for all the chunks and cover the paste with plastic wrap and put them back to the steam pot to keep warm.



**Step 4:**  
Mix taro paste with tapioca starch evenly, put boiling water A in, and stir them evenly. In the end, there should be a little starch left. Do the same to the purple and red sweet potato paste.



**Step 5:**  
Put them on the flour covered mat and rub them into smooth and non-sticky taro doughs. Cover them with plastic wrap for later. These three doughs should be dry and non-sticky.



**Step 6:**  
Cut the taro doughs from the middle and rub them into strips. Cut the strips into halves and rub each half into smaller strips of 1cm diameter. Cut them into small taro column of 1.5cm x 1cm (taro balls) with the cutting tool.



**Step 7:**  
Put the ready taro balls into the tapioca starch (extra) to prevent it being sticky, and shake off the excessive starch. The ready taro balls should be dry and non-sticky. For non-immediate use, they need to be put into the freezer.

**Step 8:**  
Boil the taros: prepare a pot of freezing boiled water (extra) in advance, or some amount of ice cubes, put the taros of three colors into a big pot of boiling water (extra). Boil one more minute after the taros float on the water. Pick them out, drain the water and put icy water in. This step can make the taro glutinous and soft. The color of the purple ones will fade, so they can be cooked later.



**Step 9:**  
Keep them in the icy water for 3-5 minutes and pick them out. Drain the water and mix the castor sugar in to prevent taros being sticky to each other.



**Step 10:**  
Make herb jelly: pour boiled water into the herb jelly powder. Pour boiling water D while stirring. Put all the liquid into the pot after stirring evenly and boil it over moderate heat. Keep stirring during heating until the liquid becomes thick and boiling. Pour it out into the bowl, cool it down and put it in the fridge. Cut the ready jelly into small chunks.



**Step 11:**  
Do red bean paste by yourself. There are a lot of recipes online. My secret is that do not cook until it's too dry. Get it out of the pot while it is moist. It tastes smooth and watery. A little water can be added to keep it moist.

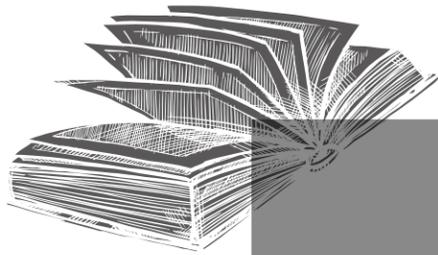
**Step 12:**  
Put the following stuff in the bowls in order: herb jelly, coconut milk, taro balls of three colors, honey red bean.

**Step 13:**  
Pour the condensed milk on top and dig in!



Suntech  
Video  
Show





# SOLICIT CONTRIBUTIONS

## I'M HERE

To enjoy the gorgeous  
four seasons with you

- Calligraphy
- Painting
- Photography
- Literature



### Requirements

1. Style is not limited. Write at least 200 words (except for poetry) with positive contents.
2. The article shall be original and will be rewarded according to content and word count, once adopted.
3. The article shall be submitted in a digital format with department and name indicated.

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