

Ningbo Companies on the Global Stage

# Inverters Made in Ningbo: Solar Power's Global "Heartbeat"

By Jin Lu

In the Tengger Desert in April, millions of solar panels create a vast blue expanse. Underneath the panels are white rectangular boxes—a device known as inverters.

"These inverters act as the 'heart' of solar power systems, transforming the direct current produced by solar panels into stable alternating current that feeds into the power grid," explains Wang Yiming, Chairman of Ginlong (Solis) Technologies Co., Ltd.

Ginlong's inverters are installed in the power systems of landmark infrastructure projects worldwide, from the Eiffel Tower, a sorting center of USPS in Los Angeles, to the pavilions of the Shanghai World Expo. Currently, Ginlong's products are generating significant sales in over 100 countries and regions worldwide.

## Reliability Above All

From a modest beginning with a founding team of three to having over 4,500 employees worldwide, Ginlong Technologies has risen to become one of the top three global leaders in inverter shipments since its establishment in Xiangshan, Ningbo in 2005. This growth not only stems from the booming photovoltaic industry but also from the company's steadfast commitment to innovation.

"Our founding goal was to produce high-tech, 'Made in China' products that could compete globally with other internationally renowned brands," said Wang.

In early 2006, as the global photovoltaic industry took off, Ginlong shipped its first batch of inverters, valued over 300,000 yuan, to British customers. This initial order brought in nearly 100,000 yuan in profit and a flurry of overseas orders. Nevertheless,



Millions of solar panels create a vast blue expanse.

[Photo provided by Ginlong]

Ginlong has always prioritized "reliability above all," choosing careful growth over rapid expansion to maintain a stellar reputation.

"Some of those orders were quite substantial—a single one could match our total sales from 2005 and 2006 combined," said Wang. "We were tempted, but our products had not yet completed six months of internal testing. Concerned about potential quality issues, we decided to reject those orders." In the solar industry, where inverters are critical and expected to last over 20 years, reliability is paramount.

According to Wang, product reliability is the bedrock of the company's survival. This principle is reflected in the company's dedication to constant improvement and excellence. At Ginlong Technologies, a rigorous testing regimen underpins product reliability. The company subjects its inverters to simulated rainfall and high-intensity impacts to evaluate water resistance. Temperature tests spanning -40°C to 60°C ensure that the devices maintain normal power output across this range.

Additionally, simulated transport conditions—including jolting and high-altitude freefall—are used to verify that the inverters' performance remains steady post-transport. Overall, each product undergoes over a hundred such tests.

## An Upgrade from "Heart" to "Brain"

The breakthroughs at Ginlong are closely tied to the company's commitment to innovation. In recent years, the focus has been on elevating the role of the inverter from "heart" to "brain" within their systems.

According to Wang, with advancements in electronic technology and semiconductor materials, Ginlong has incorporated intelligent control units into its inverters for smart operation and maintenance, enhancing power output quality and stability. "For instance, the intelligent curve scanning technology we use enables rapid identification of overheating spots and fractures in components. This entire detection process can be managed remotely online."

High-tech production processes match the products' sophistication at Ginlong. In the new Xiangshan factory area, automated vehicles transport materials, and the automated welding process boasts a 100% success rate. With the deployment of its photovoltaic and energy storage digital future factory project, Ginlong has cultivated a team of highly-competent R&D personnel. Additionally, the construction of an advanced string inverter and energy storage inverter intelligent manufacturing facility has significantly enhanced the company's production efficiency and quality.

"To lead in the fiercely competitive market, two key areas must be addressed," states Wang. "First, excellence in research and development, ensuring that products are continuously evolving. Second, a focus on marketing, after-sales services, and robust internal management."

Investment in scientific research is crucial for innovation and development. Com-

mitted to becoming a global leader, Ginlong has steadily increased its investment in technology research and development. The company's R&D expenditures were 9.5 million yuan and 10.46 million yuan in 2015 and 2016, respectively, and exceeded 30 million yuan annually in 2017 and 2018. In 2022, Ginlong's R&D investment surged by 74% year-on-year. Currently, the annual R&D investment tops 100 million yuan.

This increased investment in R&D has accelerated product evolution at Ginlong. Today, grid-connected and energy storage inverters have become the "twin drivers" of the company's growth, bolstering its expanding global footprint from Asia and Europe to the Americas and Oceania. "Given China's 'dual carbon' goals, the outlook for the photovoltaic inverter and new energy power generation sectors continues to brighten. We are committed to exploring further development avenues through innovative technology," said Wang.



## Dialogue with Dong Na

# Bridging Cultures and Businesses from Ningbo

By Dong Na

Our correspondent Ms. Dong Na's Spanish friend - Jose Manuel Martinez Gonzalez, better known as Chema, has been living in Ningbo since 2008. Originally an R&D specialist, Chema later transitioned to marketing and ultimately to sales, infusing the Ningbo Vinon Company with a dynamic cross-cultural flair. Over the years, Ningbo has become a second home for his family as well.

Recently, Chema guided Dong Na on a tour of Ningbo Vinon to showcase the company's main products and discuss his role in managing in-

ternational customers and promoting Ningbo's culture abroad.

Fluent in multiple languages, Chema's diverse experience across various sectors has proven essential in fostering robust relationships with international clients. He frequently travels across Europe, collaborating closely with partners in France, Poland, Germany, and Spain. During these trips, he takes the opportunity to convey the cultural and economic importance of Ningbo, and discusses the Ningbo Zhoushan Port—the busiest in the world—and introduce Ningbo's delectable cuisine. Chema has numerous

anecdotes about successful business expeditions undertaken with his colleagues.

Moreover, Chema is keen on introducing his customers to the attractions of Ningbo, arranging visits to Tianyige Museum and Moon Lake, and presenting them with exquisite Chinese tea as a token of goodwill.

A recent intensive week-long, 2,000-km journey to Germany epitomizes Chema's dedication. This trip was vital for cementing a relationship with a potential major partner, culminating in a \$4-million business agreement.

Chema's passion for cross-cultural collaboration



Chema guides Dong Na on a tour of Ningbo Vinon.

[Photo by Chen Chi]

and his ability to bridge cultural gaps have been instrumental in Ningbo Vinon's success in securing overseas business.

## SPOTLIGHT

# Two Historical Libraries Connect Continents Through Virtual Dialogue

By Yan Yiran

In 1561, a significant year for literary collections, two libraries were established on opposite sides of the world: the Tianyige Library in Ningbo, China, founded by Fan Qin, a politician and passionate book collector, and the Library of Eötvös Loránd University (ELTE), by Archbishop Miklós Oláh in Esztergom, Hungary.

Recently, the Tianyige Museum and ELTE, Hungary's oldest university library, conducted a virtual dialogue discussing their architectural histories, the characteristics of their collections, and the differences in book collecting practices between the East and West.

The dialogue between the two ancient libraries began with introductions from their representatives. Dr. Li Kaisheng, Director of the Institute of Ancient Books and Local Documents at the Tianyige Museum, explained, "The Tianyige Library has successfully protected and preserved its collection for over 400 years thanks to the perseverance of the founding family, support from the local community, and government assistance. It now houses nearly 300,000 ancient books, including 80,000 rare volumes."

Dr. Li further detailed that the library originated as the private collection of Fan Qin, a high-ranking military official during the Ming dynasty. Initially, the collection comprised over 70,000 volumes, consisting mainly of non-fiction works that served as inspiration to his extensive political career.

Ms. Guth highlighted that the university library holds specialized collections on China, featuring geographical texts from Rome considered the most precise Western descriptions of China at the time, and scholarly works that analyze Confucianism from various angles. "Interestingly, the authors of these works had never visited China; they based their writings on manuscripts they collected," Guth noted. She expressed a willingness to share a list of ELTE's ancient Chinese books as part of future cultural exchanges.

The session concluded with both teams engaging in discussions about their philosophies on book collecting and visions for the future.

As architectural styles and libraries evolve, the fundamental mission of these institutions remains unchanged: to foster cultural dialogue and preserve the rich heritage of civilizations. This shared commitment was the cornerstone of this enlightening exchange.

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