

Hexi District: All for Innovation

By Wu Ziran

In hospitals, positron emission tomography — computer tomography, better known as PET-CT, is the most advanced and precise medical imaging instrument. As “miraculous” a machine that PET-CT is, and despite all the lives it can save, it has strict requirements for high voltage power supply.

Dongwen High Voltage Power Supply (Tianjin) Co. Ltd., the only producer in China of the special power supply required by PET-CT, lives up to its reputation — “the growing giant of technology.” “Thanks to the Hexi District Science and Technology Committee, we can develop step by step from technological upgrades, filing for patents to stock market financing,” said a company manager. “We benefit directly from local government’s determination of building the district into an innovation-driven pilot zone.”

At first, we could only earn just over 100,000 yuan a year, and we were planning to move out of the Hexi District. But after Li Yunxia knew this, the section chief of the Science and Technology Committee, she contacted us and invited some experts to assist us in finding innovation breakthroughs, solving technological problems, upgrading our research and development levels and filing for projects.” The company manager recalls the struggles when setting up. “We feel lucky that we didn’t move out. With the help of the committee in those years, we have filed for over 100 patents and obtained nearly 30 authorized patents and more than 40 utility model patents. We remain a flagship company for patent application and authorization in the city and in 2010 and 2014 we were granted national- and city-level S&T (science and technology) SME innovation funds, totaling 1.5 million yuan.”

Dongwen High Voltage grew from a small workshop to a joint-stock company which pays taxes and profits of around 3 million yuan and dozens of patents. The impressive achievements can partly be attributed to the efforts of the district committee and district government. A strong believer of the notion that innovation can help create a better future, Hexi District always prioritizes innovation and spares no effort in supporting S&T SMEs. This is because the district committee



Bird's-eye view of Tianjin Meijiang Convention Center

and government understand the fundamental importance of innovation in building a successful pilot zone.

The makers are the main players in this round of “mass innovation” period. One of the most prominent players is Tianjin Zhizaoxing Education Science and Technology Co. Ltd., whose founder is Liu Yi, a passionate inventor. Before moving to the Northern Maker Experience Center, Liu Yi failed twice in starting his own business. But he “didn’t want to give up.” So when he heard about the center in Hexi, specially established for inventors, he came to the center more in hope than expectation. He was not sure if he can get help since he “had failed again and again.” Yet, it turned out that the center, after knowing about his plans, not only provided him with office rooms and experimental facilities, but also helped him organize the team, register the trademark, contact sponsors and tap into the market.

Since joining the center, Zhizaoxing — Liu’s team — grew from a lonely battle of Liu himself to a small team that has successfully applied for many patents and turned a profit within only five months. In the China Maker Competition organized by the Ministry of Industry and Information Technology, Zhizaoxing came third, winning recognition for its new three-wheeled electric vehicle and

wooden interlocking components. Liu said, “To be honest, I could have never imagined we could go this far if it weren’t for the Northern Maker Experience Center.”

Establishing the Northern Maker Experience Center epitomizes Hexi District’s dedication in building an innovation-driven pilot zone and many S&T companies like Zhizaoxing are thriving. Hexi District has incorporated innovation into its development themes. During the 12th Five-Year Plan period, the special fund that the district government used to support S&T SMEs amounted to 650 million yuan. For every 10,000 people, there are 7.23 patents for invention. There are 2,781 S&T SMEs in total, among which there are 42 hi-tech enterprises and 13 hi-tech business incubators, covering an area of 145,000 square meters.

During the 13th Five-Year Plan period, Hexi District, aiming at playing a leading role in economic and social development, has decided to go for an inclusive development strategy that involves the government, companies, universities, research, capital, and intermediary organizations.

On the one hand, Hexi District will accelerate the establishment of the Chentang Innovation Demonstration Area and Hi-tech Industry Core Zone, develop into a city of industrial design in north China, and provide a plat-

form for technological innovation. The district will carry out programs that upgrade the “growing giants” of technology and support companies in going public. Through multiple measures, enterprises could play a bigger role in technological innovation, and therefore better facilitate innovation. The district will foster a group of leading enterprises, and will expand the scale and upgrade the level of some smaller enterprises, to help strengthen the capacity of growing companies and activate the innovation-driven development of the whole district.

On the other hand, Hexi District is proactive in cooperating with universities that have strong scientific research departments, such as Nanjing University of Science and Technology (NUST). The district provided 130 million yuan to the NUST to build the Northern Research Institute, and introduced cutting-edge technology, such as a high power laser device and metal powder 3D printing, which is currently the most advanced technology of its kind developed in the country. The district not only introduced these technologies, but also works to further develop them. For teams and individuals that possess the core technology, the district provides them with substantial support, including helping them to establish project research centers, contract projects, establish industrial design centers and

laboratories. Teams and individuals that are approved by city-level authorities will be granted subsidies of 1 million to 2 million yuan, and those approved by ministries and commissions will be granted subsidies of up to 4 million yuan. During the 13th Five-Year Plan period, the district will provide 200 million yuan every year to upgrade the “small S&T giants.”

Government financial support is important. Nonetheless, the power of private capital can never be underestimated. The district not only increased government support, but also signed agreements with China Minying Investment Co. Ltd. and the Northern Research Institute of NUST. Minying Investment provides an initial investment of 2 billion yuan for the Northern Research Institute in R&D with concerted efforts made to establish an intelligent science and technology park.

In addition, encouraging enterprises to go public and making good use of the capital market are essential to the future development of the companies. In Hexi District, over 10 S&T enterprises, including Dongwen High Voltage, have been listed on the stock market. The district has launched a Hexi District Enterprises Public Listing Program, published Hexi District’s Opinion on Accelerating Enterprises Public Financing, and rewarded listed enterprises with 500,000 to 5 million yuan. These measures have encouraged a group of growing small- and medium-sized innovation enterprises to become listed on the stock market.

In conclusion, advanced technology, favorable policies, and timely financial support all enhance greater industrial development. The Hexi District emphasizes both R&D and creates research bases for local companies. It is building a system that incorporates innovation and scale-up production, which will lead the whole nation’s intelligent manufacturing.

During the 13th Five-Year Plan period, the Hexi District will ensure that the budget for R&D accounts for around 3.5 percent in local GDP with platforms for innovation occupying an area of 300,000 square meters. Total output from growing S&T enterprises is expected to reach 1 billion. The district will work hard to form large-scale industry groups and become a center for scientific and technologically innovation in China.

Hexi District and NUST Cooperate In Building “Little Giant” Enterprises



Intelligent Manufacturing Display and Experience Center at the Northern Research Institute of Nanjing University of Science and Technology

By Wu Ziran

In the Intelligent Manufacturing Display and Experience Center at the Northern Research Institute of Nanjing University of Science and Technology (NUST), one will be amazed by the advancements in cutting-edge scientific research, such as intelligent manufacturing, robots, 3D printing, laser, etc. Makers can pursue fun and explore secrets here. However, ac-

ording to Jia Fengshan, Communist Party Secretary of Hexi District, “This is far from enough. We aim to take the ‘final mile’ so that the most advanced scientific and technological (S&T) achievements can be transformed into products the market needs as soon as possible. This could be a model for Made in China 2025 strategy.” It is a vivid example of the race against time to build “little giant” enterprises through district-university

cooperation. On June 10, 2015, the government of Hexi District signed a contract with the Northern Research Institute of NUST. Only two months and five days later, the Intelligent Manufacturing Display and Experience Center was established in the Chentang Science and Technology Commercial District. After the center was set up, a tripartite cooperation agreement was signed between the Chentang Administrative Committee, Northern Research Institute of NUST and China Private Investment Corp. Ltd. on October 31, 2015, taking another two and a half months. All three projects have realized scale-up production in just seven months.

Hexi District is the capital district of Tianjin. As one of the 21 parks in the National Innovation Demonstration Zone, the district has grasped every opportunity provided by the zone and Made in China 2025 policy. It focuses on building “little giant” enterprises to stimulate innovation, restructure and upgrade industries and to improve economic quality and efficiency. In February this year, the district issued Opinions on Upgrading the S&T Little Giant Enterprises, requiring the district to arrange 100 million yuan each year over the next five years. The fund is mainly used to establish lead-

ing hi-tech R&D institutions with great potential and to achieve scale-up production.

NUST has a strong team of experts and has achieved a lot in scientific R&D. Since establishment, it has undertaken a large number of major national scientific research projects and has made many landmark achievements over the last 60 years. Yin Qun, Party Secretary of NUST, said, “We prefer its geographical, policy, cultural and environmental advantages. In the context of the Jing-Jin-Ji integration initiative, we want to seize the opportunity to find a new way for district-school cooperation and mutual development.”

The successful district-university cooperation in Hexi has attracted a lot of investment. Fu Ronglin, Chairman of the Board of Directors of China Private Investment Co. Ltd., said they had chosen to cooperate with Hexi District and the Northern Research Institute of NUST because they had a myriad of good projects with a broad market in the future. They plan to invest 6 billion yuan to implement the projects in Hexi District and to boost intelligent manufacturing.

Qian Linfang, Vice President of NUST, told us that three projects had now been achieved scale-up production in Hexi District. First, a high-pow-

er fiber laser project, which is one of the most successful R&D results of NUST. Professor Zhu Rihong, director of the project, is one of the leading figures in the Chinese laser field. The second is an all-solid-state thin film lithium battery project. This was carried out at the Herbert Gleiter Institute of Nanoscience (HGI) of NUST. The institute is a national-level research center for international cooperation. Professor Gleiter is the former vice president of the German National Academy of Sciences and is an internationally recognized founder of nanomaterial. Professor Xia Hui, director of the project, is the youngest team leader in the institute. Third, an electric vehicle charging system with interactive smart grid was established. Professor Hu Wenbin, director of the team, leads one of the most successful R&D teams of NUST.

Qi Longjiang, Executive Vice President of the Northern Research Institute of NUST, said that the institute was established from scratch after six months of preparation. Over 100 million yuan worth of output is estimated to be generated by the end of this year. In the next one or two years, every project will develop into a whole industrial chain and the output value will double over the years. The “little giant” will be growing even faster.