

Albert Lu - Founder & Helen Chiu - Co-Founder, Tripod Nano Technology, Taiwan



Despite being a relatively unrecognized global player, Taiwan has been developing nanotech for almost 15 years

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Albert Lu (founder) and Helen Chiu (co-founder) of Tripod Nano Technology (TPNT), introduce the concept of the original innovative manufacturer (OIM) of metal nanoparticle colloidal solutions and highlight the company's unique technology as the first eco-efficiency production platform. Lu goes on to comment on the application of nanotech in the healthcare and life science industries and TPNT's strong positioning as a leading manufacturer in Taiwan - a forerunner in the nanotechnology market.

As a recently established company, please introduce the history of Tripod Nano Technology.

TPNT is a national award-winning high-tech neoteric company set up in Taoyuan City, Taiwan on January 2018 as a professional OIM service provider. Over the past two years, TPNT has patented the world's premier heavy metal-free colloidal metal nanoparticle solution. Our eco-friendly products are well above the current market standards of high dispersibility, optimal surface area, and small particle size. We intend to create universal values of nanotech in different industries.

Before 2018, TPNT was a business unit of the chemistry department from our parent company Tripod Technology Corporation which is the world's fifth-largest printed circuit board company. At that time, TPNT's foremost function was to help Tripod Tech design a green method for recycling

chloroauric acid solutions. This method was a huge success and created additional values for Tripod Tech in the field of colloidal nano metal solutions, particularly in the field of biotechnology. This technology also received a huge quality management recognition from our customers. On the 23rd of January 2018, TPNT officially became a fully owned subsidiary of Tripod Tech Corporation.

What is the innovative technology platform at the center of Tripod Nano's operations?

Our technologies are based on the green circular economy concept. We stand by our core value of green innovation, so we do not produce any toxic products during our chemical reactions. In the future, TPNT will continue to keep our eyes on the global market while maintaining operation as an OIM in Taiwan. Our vision is to build nanotech as a new technology industry which can be the next miracle in Taiwan.

How are you planning to position Tripod Nano within the emerging sector of nanotechnology?

TPNT (a B2B OIM company) is primarily focusing on providing customized raw and functional nanomaterials. We cooperate with customers to promote nano applications in different fields while offering technical support services. Thanks to our bio-conjugation technology and exclusive production skills, TPNT can assist in customizing different product designs. Our services satisfy clients' high-standard requirements for various specifications and demands, which with varying materials such as peptides and antibodies. With the aforementioned factors of technology, patents, and quality control, we believe that TPNT enables to establish a win-win partnership with our customers.

Based on our unique world-class environmental metal dissolution technology and colloidal metal nanoparticle production technology, TPNT has the ability to control the value chain from raw material and metal oxide nanoparticles. The most outstanding advantage from TPNT is that we are the only company in the world that can produce more than ten different kinds of spherical colloidal nanoparticle products via a one-step production procedure. These colloidal conditions include combinations of gold, silver, and platinum core and shell nanostructures such as platinum covered gold.

What products does Tripod Nano leverage within this diverse portfolio?

We are focusing on four main product categories which are metal salt, colloidal metal nanoparticles, colloidal metal oxide, and colloidal metal composite nanoparticles. TPNT provides a one-stop production solution for colloidal gold nanoparticles, which starts from chloroauric acid production to nanoparticle and colloidal nanoparticle production. Also, we want to emphasize that our products have been certified by both ISO 9001:2015 and SGS non-toxic verification.

What internationalization plan do you have to grow the company as a global leader in nanotechnology?

In order to increase international exposure, TPNT has actively participated in international conferences and exhibitions to promote and raise awareness for our brand and products. These international meetings and exhibitions include the Tokyo International Nanotechnology Exhibition, Paris Invention Exhibition, and Southeast Asia Nanotechnology Innovation Application International Symposium. The upcoming one is that, in this November, TPNT will participate in the leading international trade fair of the medical sector MEDICA 2019 in Dusseldorf, Germany, to demonstrate our professional abilities.

Moreover, TPNT has also made significant efforts to file domestic and international patents, to build partnerships for research collaborations and customers, and to extend our product line to various nano metal and metal oxide colloidal solutions. To date, we have obtained fifteen patents from six countries: Australia, Germany, Japan, Taiwan, the UK, and the USA. Moreover, ten additional patents have been filed throughout the global market. With all of these efforts, we have already been able to see remarkable revenue within our first fiscal year.

Compared to other areas, the biomedical has seen the most dramatic evolution in market value for nanotechnology. How do you expect Tripod Nano's technology to fit within the healthcare paradigm?

The applications of nanotechnology are gaining overwhelming response in almost all the fields. Especially in healthcare sector, tremendous developments have been achieved. For example, the applications from cancer diagnosis and therapy, medical implants, tissue engineering etc. Taiwan has very strong core competencies in the biomedical field, so TPNT's contribution in this field is very meaningful in improving the health of patients in Taiwan and internationally.

We are very happy to announce that all of TPNT's products are environmentally safe. By applying our green procedure, all of the nano-metal and metal oxide nanoparticle colloidal solutions result in non-toxic pure products. Nanoparticles can be widely applied to diverse fields such as animal disease, human bacteria or virus infection detection, agriculture, food safety, and other diagnostic products. Moreover, these nanoparticle colloidal solutions can be applied to rapid screening diagnostic test strips, for instance, animal allergies, sensitivity testing, and sub-chronic toxicity testing. All of TPNT's products have qualified for particle tests in these areas listed above.

In the field of the health and biomedical treatment for human and animal circulation, our technology has been successfully introduced to rapid screening test strip manufacturers. We have built the close cooperation relationship with key international companies such as Maxim Biomedical Inc in the US, Alltest in China, Eternal in Taiwan, Biotest, AsiaGen, and CjBiotec. Especially now, we are participating in a cooperative marketing project with Merck, the world's largest pharmaceutical and biomaterials manufacturer.

What is your assessment of Taiwan's nanotechnology sector and what significance does Tripod Nano have as a first mover in the field?

Despite being a relatively unrecognized global player, Taiwan has been developing nanotech for almost 15 years. Taiwan government has invested enormous funding for nanotechnology for over a decade via the National Nanotechnology Program which was established in 2003. In the past, sadly, there were participants coming only from consignment agents and small nanotech laboratories that are with lack of quality control. TPNT is the first environmentally oriented manufacturer to produce metal nanoparticles in Taiwan. As an R&D driven pioneer, TPNT is inducing and triggering the growth of Taiwan's biotechnology industry via talented manpower and advanced technology. As a reference company, we always concern about the product quality improvement of the relevant application of nanotech and the international growth of Taiwan's overall competitiveness.

What competitive advantage does this give Tripod Nano to be established in Taiwan - a first mover in nanotechnology?

TPNT's core value and technology have been well supported and appreciated by Taiwan government. And also TPNT has been able to pass stage one of the Small-Scale Enterprise Innovation Research and Development Program of the Ministry of Economic Affairs. Additionally, we

are proud to announce that TPNT has been honored with the 15th National New Innovation Award of Taiwan in the category of Startup Enterprise in 2018

What final message would you like to deliver on behalf of Tripod Nanotech?

Nanotechnology has huge applicable potentials in many industries. TPNT is not only focusing on a small field, but, for instance: health, a key market with significant societal impacts. In the future we will explore more applications and see what other issues nanotechnology can solve for the benefit of society.

We also want to highlight that as we continue to expand as an international company, we are looking for top-tier global talents to bring their professional skills and fresh ideas to TPNT so we can work together to nanotechnology development and to apply this innovation to an everyday life!

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