Interview: Zhang Guojian – Chairman of the Board & CEO; Zhang Erying – Deputy CEO & Head of Research, KingFocus Biomedical, China



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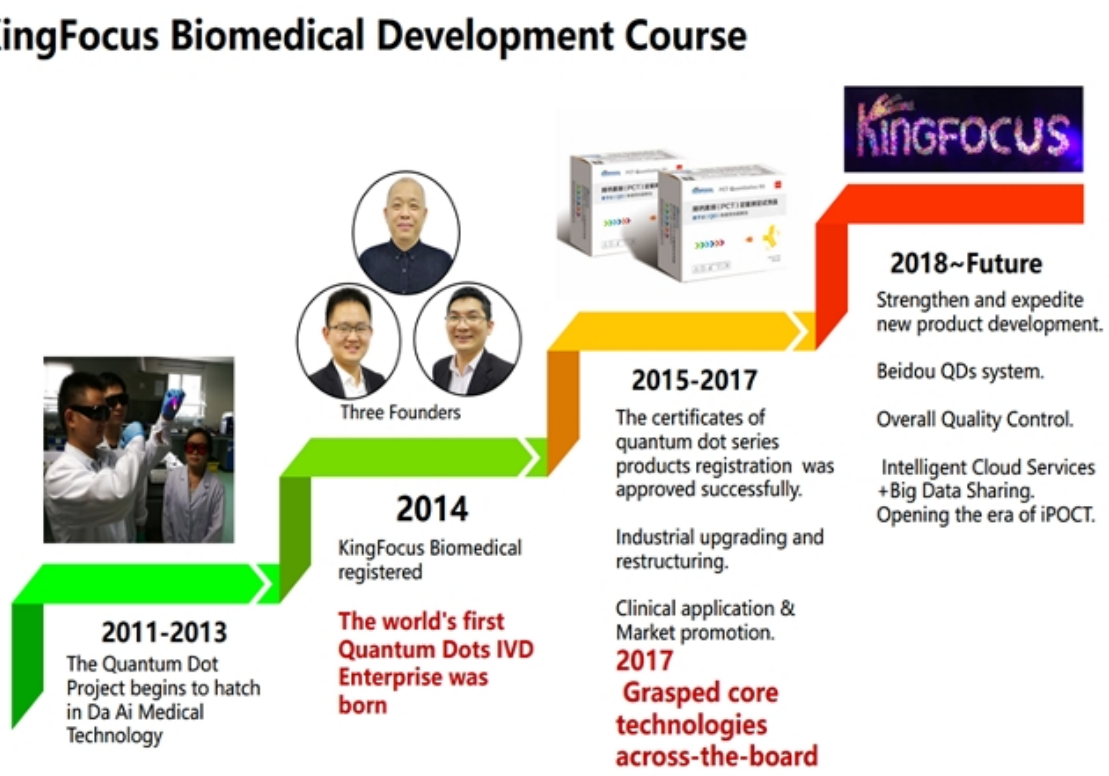
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Tags: China, KingFocus Biomedical, Medtech, Diagnostics, Quantum Dots, Innovation

Zhang Guojian and Zhang Erying of in-vitro diagnostics manufacturer KingFocus Biomedical, introduce their company's innovative 'quantum dots' technology, its development, client list, and the benefits of being based in Shenzhen.

Mr. Zhang, could you first introduce your company, KingFocus Biomedical, to our international audience?

I am extremely proud to introduce KingFocus Biomedical as the first company in the world to use quantum dot technology in the field of in-vitro diagnostics and specifically focused on Point-Of-Care-Testing (POCT). This is the most valuable aspect of our operations – that we were able to commercialize this cutting-edge technology of quantum dots in the diagnostics field. We are a vertically integrated company with R&D, manufacturing and commercial sales.
KingFocus was first established in March 2014 and have since grown extremely quickly over the past four years. We now have over 150 employees and a number of products with market authorization from the Chinese FDA. Our first product was launched on the Chinese market just over a year ago.



I am happy that we have managed to use one of the most advanced technologies and materials in this area, and over four years, convert a great technology into a great product! For instance, our products can compete with Roche and BioMerieux globally – this is the standard that we have achieved.

On a personal note, I am originally from Anhui Province, and came to Shenzhen in 1992 after Premier Deng Xiaoping designated Shenzhen as one of the first Special Economic Zones in the country and opened up this region in 1978. I can remember, at that point, the population of Shenzhen was only in the tens of thousands! I started as a secondary school physics teacher before a stint as a traveling salesman dealing with leather goods. In 2000, I became a distributor of medical products. It was then that I decided I wanted to start my own company! KingFocus is actually my third company, and I invested the first CNY 10 million into KingFocus myself, which shows how confident I was in this technology!

The Chinese name of KingFocus Biomedical is actually "□□□□ " – the first two characters are the characters for 'gold' and 'standard', which evokes our ambition and mission to become the gold standard for POCT IVD globally!

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Could you share more about your revolutionary 'quantum dots' technology, as we have never encountered it before within the healthcare and life sciences sectors globally?

Quantum dots are tiny particles or nanocrystals of a semiconducting material with diameters in the

range of 2 to 10 nanometers – they are so small that they are deemed to be ‘zero-dimensional’ and behave like individual atoms. A very useful property is that they can be precisely controlled to perform certain functions.

It was first discovered in 1983 in the world-renowned Bell Laboratory in Columbia University by Professor Louis E. Brus. As a result of their interesting optical properties combined with its ability to be precisely controlled, its most prevalent use thus far has been in display monitors for electronics in what is called QLED, launched by Samsung in 2017. Within the life sciences sector, academic and research institutions across the US and Europe have been working with this material for decades now, with over tens of thousands of academic papers published on this subject, but no one has yet managed to successfully commercialize it.

I first heard about this in 2011 when a Tsinghua University Shenzhen Research Institute Professor Ma Lan presented a paper at the China Hi-tech Fair□□□□□□□□□□□□ (CHTF). We are the first team globally to have successfully industrialized this concept into a commercial product. We are now even able to manufacture our own quantum dots, where previously we had imported it from an American company. Our own quantum dots have a proprietary technology that makes them even more tailored for IVD use.

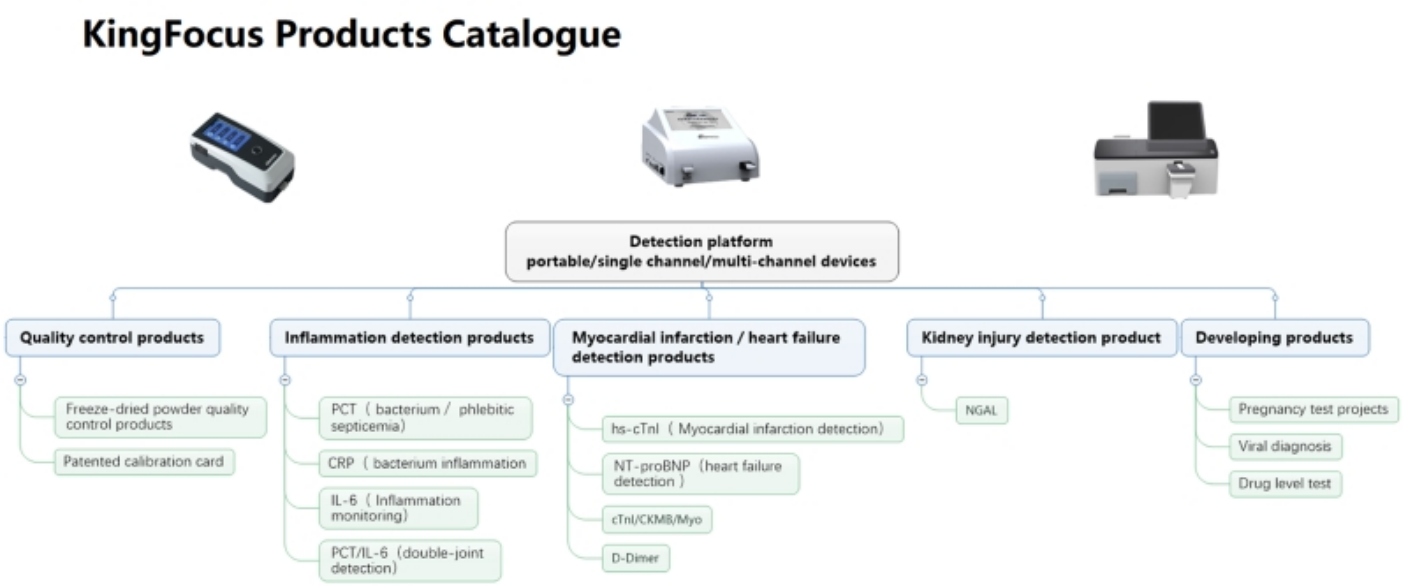
What were the challenges preventing the commercialization of this product previously?

The fundamental challenge was the inherent instability of the material. This was the insurmountable challenge for previous companies. While this instability may be workable in academic research, it is not acceptable within a commercial product, and particularly within the medical diagnostics field. After all, you are talking about a very precise industry working with precise – and often very small – quantities of bodily fluids sand samples. Precision, stability, consistency are all critical factors of a good product and technology. For instance, you cannot ask a patient to provide multiple blood samples just because your technology is not so ‘reliable’!

This is the area that we were able to make a major breakthrough allowing for the development of a commercial product.

What does your product portfolio and pipeline look like at the moment?

In total, we have three products on the market at the moment, starting with a PCT diagnostic product since 2015. We currently have 12 market authorization for different cardiovascular diagnostic kits, control reagents and medical devices. This quantum dots technology effectively acts as a platform: it can be used within a number of diagnostic fields, including but not limited to Immune Repertoire sequencing (IR-SEQ), Procalcitonin (PCT) and C-reactive Protein (CRP).



Who are your main clients at the moment?

Our main clients are public hospitals in mainland China. As you might know, the public hospitals in China are categorized into three levels: first-tier, second-tier, and third-tier. We have already successfully penetrated over 300 hospitals, of which over 100 are top-tier hospitals, which is a great achievement.

As you can imagine, it is not easy to enter public hospitals in Shenzhen as a new medtech product. Hospitals, especially the top-tier public ones, tend to favor the large established brands like Roche and BioMerieux. For new independent brands to break into this market is extremely difficult! Our strategy was therefore to conduct blind tests in front of hospital administrators, directors and physicians directly, placing our products in head-to-head competition with those of the big brands. We test the same samples, analyze the results and compare. This is the best way of proving to potential clients that our products are as good as, if not better, than those from the big names.

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Once they are convinced of our product quality and strength, then our cost advantage over imported products from international players comes into play.

Shenzhen has the reputation of being one of the most innovative cities in China. What advantages does being based in Shenzhen give to KingFocus?

Shenzhen’s innovation environment is one of the best in China, undoubtedly. Firstly, it is a very young and vibrant city, which allows us to draw on the best young talents for our company. Secondly, the VC and capital investment environment is very active. KingFocus has had three rounds of investment already! This is very conducive to enterprise growth. Finally, there is a complete manufacturing and supply chain ecosystem here, since the city was built on a strong foundation of a flourishing electronics industry. Any spare parts or electronic technology we need,

we can find it in Shenzhen within a five-kilometer radius! This has really helped in our growth as well.

What are some of the challenges for the company at the moment?

In the Chinese medtech industry, there used to be a saying: on the international market, people differentiate between two types of products – Mindray products, and non-Mindray products! It goes without saying that KingFocus falls into the latter category. While Mindray's products have received a certain amount of global recognition, the reputation of the Chinese medtech industry as a whole on the global stage is still very low.

It is for this reason that KingFocus has always placed product quality as its top priority and focus. For a medical technology or product, quality must always be the top priority for two reasons. Firstly – and most importantly, it is our responsibility to the patient and end-user. Secondly, it is the only means of survival for the company. A company's development relies on its products.

Despite being a small and young company, KingFocus' products already have an excellent reputation in mainland China, because we have a strong network of good hospitals using our products and also through the State Ministry of Health's recognition. Quality is our core value proposition – and this is why we chose our Chinese name to mean 'gold standard'.

Even being the first company in the world to commercialize this quantum dot technology in IVD, for me, is not as definitive as our unrelenting commitment to product quality.

While diagnostics is an extremely big field, there have been many start-up companies in this area over the past few years, especially in Taiwan, Hong Kong and China, not to mention the large multi-national companies like Roche and BioMerieux dominating this market in China. What differentiates KingFocus amidst this heavy competition?

Indeed, competition is fierce in China and the sector's development has been extremely fast. However, I am very confident in our company's positioning for two reasons: firstly, our product technology is unique in the world and has therefore attracted significant global attention; secondly, we have developed an extremely high-quality product.

We also have a slightly different sales strategy from most Chinese medtech companies. Like many of the international medtech companies, instead of focusing on a purely commercial sales and marketing strategy, we emphasis medical education of healthcare professionals as a way of raising awareness not just of our products but the medical technology behind our products. After all, as the first company in the world to use this quantum dot technology in medical diagnostics, most, if not all healthcare practitioners have never heard of our technology! If they do not know about our technology, how can they trust and buy it? This is why we have invested significant efforts and energies over the past two years in providing medical education and awareness to healthcare practitioners, patients and distributors. I am actually very proud of the progress we have made in

this respect.

Our focus is first and foremost on educating stakeholders on the technology itself. But the happy result is that once they understand the benefits of this technology, they naturally associate this technology with our company, since we are the first and only!

What is your growth strategy for the next few years?

We expect to break even in two years or so by diversifying our product portfolio and increasing our market penetration of Chinese hospitals.

In the longer term, we are very interested in expanding into international markets through potential partnership opportunities, whether through out-licensing, co-development, setting up affiliates or even M&A. In fact, we have had some interest from established diagnostics companies on the last option, which is testament to the strength of our products!

I am convinced that our products can compete with the best globally. In fact, we have proven this through a global survey by RIQAS, which compiled results across 34,000 international laboratories, and certified that our technology is comparable to global giants like Roche and BioMerieux.

For the time being, we will focus on more emerging markets like the Middle East and Africa – much like Chairman Xi's 'One Belt, One Road' strategy! North and South America are still a little more challenging because of the need to obtain US FDA approval, which is usually very lengthy and expensive, especially for a smaller start-up company. However, we already have plans to attend the AICT* conference in the US this August, because we do want to announce our technology to the world!

The future is bright – and everything is possible for KingFocus Biomedical! At the end of the day, we just hope to better serve society and patients by developing our products. If a partner can help us in this mission, we welcome them.

Finally, do you have a final message for our global audience?

As a Chinese, we are pleased to see China's influence growing in the global arena, but when it comes to the medical technologies and devices industry specifically, China is still lagging behind. My fervent hope is that through my generation and the generations after, we are able to develop, deliver and promote truly innovative, products for international markets, and carve out a strong niche for homegrown Chinese products!

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