

# Interview with Aihua Pan, Chairman, SinoBioway Group

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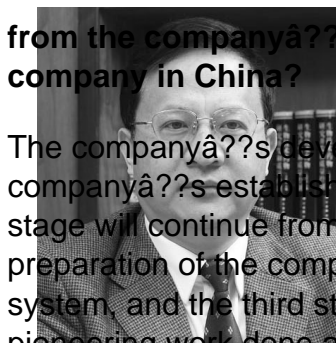
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**With an introduction to the company and an overview of operations from the company's founding through to your position today as a leading biotech company in China?**



The company's development can be divided into three phases. The first stage ranges from the company's establishment up till 2008. The second stage will last from 2009 to 2011 and the third stage will continue from 2012 to 2020. The first stage involved the initial establishment and preparation of the company. The second stage will encompass the establishment of the Bioeconomy system, and the third stage will involve building a flagship company of the Bioeconomy. The pioneering work done at Sinovac biotech on the H1N1 virus is a highlight of the emerging importance of the Bioeconomy.

**Sinobioway's companies are engaging in cutting edge research in a number of emerging fields. What are you most excited about in this second stage of development? What new breakthroughs will we witness?**

I transitioned from working as a researcher to engaging in industry. As my personal goal, I want to create a Bioeconomy system. I coined the term Bioeconomics and I am in the process of elaborating and developing this term into a full fledged system. I use images to clearly define the system's attributes. Time Magazine published an article about the theory of Bioeconomy back in 2000, but I believe the visual representation that I conceived is a more fully developed depiction of the underlying concept. In my model, the first image is Bill Gates, representing Industry. The second image is George Soros, who represents Finance, and the third image is of Albert Einstein, representing Innovation. Thus, the combination of Industry, Finance and Innovation results in the comprehensive theory of the Bioeconomy. With these concepts, I established the framework of the Bioeconomy. The development of Sinobioway has followed this framework. From my perspective, Sinobioway can bring three things to the industry and to the world. First is the idea that I first proposed in 1995, which is the Bioeconomy Theory. Second is the Bioeconomy System itself, and third is the Bioeconomy community. The Bioeconomy community represents the future community of human beings.

The bioeconomy system theory is now established through the Universal Central Dogma, and expressed in the study of Social-genology and Econo-genology. Social-genology is a field that investigates economics through the views and methods of medical science and biology. The aim is to uncover the "invisible hand" of economic development, which is modeled as the economic genome. There are a number of concrete applications of methodologies and concepts from life

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sciences such as economic assets in bio-recombination theory, the medical pattern of the stock market, concretized circulation of invisible assets, and open-ringed chain operation. The second field of study, known as Social-genology, investigates both the basic rules of universal development, and also the fundamental rules of human social development. This is a science that establishes the ground and foundation for all philosophies and beyond. I created the term Genology as signifying the study of the Central Dogma of the Universe, which is the following: "Capital controls the world. Life determines capital. "Gene" dictates life."

**How do you see this system and theory growing and expanding now that you have created the institute? How will it be communicated to the world?**

I published my theories in 2003 at "Acta Scientiarum Naturalium Universitatis Pekinensis" "DNA Double-Helix Will Lead Humanity into a Biological Century". However, I am very busy and don't have enough time to devote to this intellectual work. In 2007, I participated in the First Conference of China's Biological Industry. After ministers gave their presentation, I gave a talk on the Bioeconomy, describing how this is a unique opportunity for the world's newest superpower. I spoke about how China can effectively enter the age of the Bioeconomy and how this theory can be used to solve the problems facing the world today. These solutions will be peaceful, and will represent the first peaceful rise of a superpower.

**Could you please elaborate further on the impact that Chinese science will have on the world and the wellbeing of all peoples?**

For the past twenty years, China has been focused on internal development. Now the country is at a point where it needs to fully enter the international arena, but this presents a significant challenge for the country. While China is not yet a superpower, it is a very powerful nation and integration with the global system will indeed present challenges for such a large and complex country. Through the process of globalization, our internal affairs already affect people all over the world, and vice versa, so it's necessary for us to reach out internationally and cooperate to grow together. There are three components of the future of Chinese participation in the globalization trend. First are economic ties, second is policy harmonization, and finally is cultural exchange and mutual understanding.

For Sinobioway, the first stage of this process of building external ties has been in the integration of technology and production capacity with foreign firms. The second stage is biotechnology integration, and third stage is direct R&D collaboration with international companies.

**How will the internationalization process precisely unfold at Sinobioway?**

The international strategy can be described as a barbell model of development. The initial major phase is currently underway, involving the primary R&D necessary to create products that are suited for foreign markets. Then follows a period of preparing manufacturing facilities and obtaining the necessary certifications. This is the bridge section, not necessarily requiring innovation, but consuming time and resources. Finally, the second major phase, and third phase overall, is building out an international marketing apparatus.

I also conceptualize of this process as the sunlight, shadow and moonlight strategy. The sun represents the spark of innovation and invention at the core of R&D. It is also important in that the sun is the energy source for the planet, and innovation is the driving force behind this industry. Then the shadow phase involves building out manufacturing capacity and filling the gap in terms of GMP standards. Finally, the moon phase represents international marketing in that it is a process of transmission and reflection of the innovative energies in China to the other side of the world.

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This process has been underway and Sinobioway has already established 3 major operational sites in China. At these sites, I believe that the physical environment at the facility is a very important component of the smooth functioning of the firm. Each of our facilities are designed using precisely the same standards as top facilities in the US or Europe.

A major goal for Sinobioway is to have a product becoming a leading product in China, which we define as reaching RMB 1 bn in sales. We have five major conditions that will facilitate our achievement of this goal. First is to continue our emphasis on maintaining adherence to the highest standards. This is not only regarding our manufacturing solutions and GMP compliance but also environmental standards, which is moving towards international levels. Second is the quality of our medicines that must be at the highest possible level and this will always be a key imperative for the company. Third is ensuring uniformity of product quality and systematic, consistent output. Fourth is maintaining our cost advantage. Fifth is building out our presence while maintaining a low profile.

Given recent concerns regarding product safety in this sector, it is our utmost priority to maintain uncompromising standards and keep quality as the number one issue. Our price advantage is so strong that once we have proven the quality and safety of our products, sales will naturally ensue. Our products are one-tenth the price of our competitors so our advantage is very clear. At this point we don't have an intellectual property program as we are focused on generics. However, we will be building out a robust research-based line of products and our facilities will not only be in china, but also in other locations worldwide.

**Based on your writings and philosophical passions, you seem to feel the calling of the intellectual life. What keeps you passionate and engaged with the business?**

I did a number of majors and eventually focused my studies in two areas. The first is in biology, where I did some work with space medicine and received a doctorate in molecular biology. The second focus area has been in political economy, where I got my second doctorate. In fact, I was the first in China granted to pursue a dual PhD, and I majored in political economics. In political economics, my supervisor is Prof. Zhuo Xiao of Beijing University, who is a renowned economist and an expert in Marxism. After engaging in high-level academic work in these two areas, I wanted to combine biology and economics and thus founded my work in the field of Bioeconomics. This theory is as yet incomplete and still in need of additional work. In this vein, I am working at Sinobioway in an operational capacity to put my theory through its paces and test it in the real world. It is also a promotional exercise in spreading this theory and applying it in innovative ways.

**What is your final message to the readers of pharmaceutical executive about the Bioeconomy?**

I insist on what I predicted ten years ago: We are going to enter into an era of Bioeconomy by 2020 and we are striving to make Sinobioway the flagship in Bioeconomy when the time comes.

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