Beijing, November 30, 2023 CCTV (Reporter Sun Ruxiang)

November 29, 2023 the first issue of the "Shanghai Market Gateway - Hard Science and Hard Guests" program in the Shanghai Stock Exchange successfully recorded.

The Shanghai Stock Exchange, CCTV network to jointly create a highly integrated media exclusive platform, aimed at a series of high-quality content output for the high-quality development of Shanghai companies to contribute to the professional power of the authoritative media. As the fist sub-column of "Shanghai Stock Exchange", "Hard Science and Hard Guests" focuses on the leading industry chain of science and technology innovation segments, aiming to build an all-around display and in-depth communication space for the iconic souls of "hard science and technology" development, and allow entrepreneurial scientists to summarize their experiences, review their paths, look forward to the industry, and offer advice and suggestions, which will further lead and boost the continuous improvement of the industry chain ecosystem of the Science and Technology Creation Board. This will further lead and help the industry chain ecology of Sci-Tech Board to continuously improve and realize high-quality development.

The first issue of "Hard Scientists" was themed "Synthetic Biology's Great Attack". Liu Xiucai, Chairman of Cathay Bio, Chairman of Huaxi Bio, Zhao Yan, Chairman of Huaheng Bio, Guo Henghua, Chairman of Carbio, and Yi Dewei, Chairman of Carbio, the leading guest of honor, was Li Chao, Chief Analyst of New Materials of CITIC Securities. The guests discussed the status and future of synthetic biology industry from the perspectives of the unique connotation of synthetic biology, development history, application scenarios, competitive landscape, industrial policy, etc. The guests also discussed the potential of synthetic biology as the "future" of the industry.

Huge potential, as the "industry of the future", the future is already here!

In recent years, synthetic biology has changed the traditional way of industrial production, and has been widely used in medicine, energy, materials, chemical industry, agriculture and other fields in a greener and more efficient way. Therefore, synthetic biology is also known as the "third biotechnology revolution", and is expected to become a new golden track. According to McKinsey's analysis, the future of biological manufacturing is expected to have a huge impact on the traditional industry, synthetic biology-related market is expected to reach $ 4 trillion market size, is expected to 2025, synthetic biology and biomanufacturing of the economic impact will reach $ 100 billion.

Liu Xiucai believes that if you want to completely solve carbon neutrality, you can't avoid the carbon increment brought by fossil energy sources such as oil and chemicals and chemical materials, and biomanufacturing is almost the only option to completely solve carbon neutrality.

Zhao Yan pointed out that synthetic biology is a disruptive technology driving the development of biotechnology, and is the underlying support for realizing green manufacturing and dual-carbon goals. In the future, 80% of the substances in life can be produced by cell factories, covering all fields of clothing, food, housing, transportation and medical use.

Biomanufacturing with synthetic biology as the core is becoming the focus of a new round of big country game, and China's synthetic biology has been in a relatively forward favorable position in the world.

Yi Dewei believes that China's synthetic biology industry development has outstanding advantages, the large domestic population, extensive market demand for synthetic biology provides a huge potential and broad market; a huge number of biology, chemistry, engineering and other fields of expertise for the development of synthetic biology provides human resources to ensure that the basic research in the field of the overall developed countries in Europe and the United States and the United States, and in some areas even even better in some fields.

Zhao Yan pointed out that the advantage of Chinese enterprises lies in the possession of a huge market and complete supply chain, and years of deep-rooted in the field of fermentation, with leading fermentation technology and pilot capacity, is the largest producer of a variety of amino acids, vitamins, medical raw materials and other biological materials.

Policy support to ignite the engine of accelerated industrial development

In order to promote the development of synthetic biology industry, the central and local governments have launched various support programs.

According to Yi Dewei, the importance attached to the national top-level design and the positive response of local governments have brought firm confidence to the development of the synthetic biology industry. The government attaches great importance to the development of synthetic biology and has provided a large amount of financial and policy support, which has promoted the rapid development of the field.

While the policy is favorable, there are also some "pain points" to be solved.

Zhao Yan pointed out that the main pain point in the synthetic biology industry is the transformation of industry and market transformation. She called for the strengthening of industry-university-research cooperation, so that scientists focus on 0-1 scientific research. At the same time, enterprises should actively participate, play the role of enterprise "production", and promote the industrial transformation and market transformation of synthetic biology research results.

Liu Xiucai believes that China's capital market and the government attaches more importance to synthetic biology, but it is mainly reflected in the support of scientific research, and not enough support to encourage the application and promotion of products. The U.S. has put forward a market scale target for biomanufacturing products, and Europe has released a carbon tax policy, which is worth learning from. The real power of enterprise R & D and attract talents should come from the

market demand, I hope the government can be in the synthetic biomaterials market to promote the application of landing more specific policies.

Guo Henghua said that at present, Chinese enterprises are at the forefront of the world in the industrialization of synthetic biology. In the case of relatively limited resources, industrial policy needs to be appropriate to the domestic leading enterprises to tilt, increase the support for the development of leading enterprises.

Chinese companies are expected to continue to lead the way as all boats compete with each other

Synthetic biology companies are springing up like bamboo shoots, showing the situation of a hundred boats competing for flow. Among them, the performance of the four companies in the "Quadruple Alliance" of the Science and Technology Innovation Board (STIB) has been the most eye-catching.

For example, Cathay Biologics has completed the industrialization of a group of materials mimicking the structure of proteins for the first time in the world, and is building a production line with an annual output of 1 million tons, part of which has already been put into production.

Huaxi Biological has built a green manufacturing industry chain of synthetic biology through "scientific and technological innovation, pilot and industrial transformation, market transformation", and has built the world's largest pilot transformation platform at the industrial end to accelerate the transformation of synthetic biology research results.

Huaheng Bio has successfully realized the large-scale production of L-alanine by anaerobic fermentation of microorganisms for the first time in the world, and the compound growth rate of the company's R&D expenses in the past two years has reached more than 60%.

Gabiyu has completed the construction of the system of gene assembly, gene editing, multi-omics analysis, metabolic engineering, chassis cell directed evolution and other synthetic biology underlying technology, and has built the whole technology chain of biomanufacturing with synthetic biology technology as the core.

At present, the cycle of "science and technology-industry-capital" has been fully realized in the field of synthetic biology. A number of synthetic biology science and innovation board companies have laid out startups in advance. On the whole, investment in the synthetic biology field focuses more on substantive cooperation and commercial layout of enterprises, with less pure financial investment, not just for the sake of financing.

"In the future, China's manufacturing capacity has to be laid out globally, in which there is a huge opportunity in the field of bio-manufacturing, not just replacing the stock, but creating incremental volume." Guo Henghua, Chairman of Huaheng Bio, pointed out, "In the future, there will be a number of synthetic biology listed companies in China, and it is important to let the global upstream and downstream ecological enterprises benefit because of China's internationalized enterprises in biomanufacturing, and China has the potential to have a more far-reaching impact on the global industrial chain." (CCTV Capital Eye)

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