

# New Guideline to Refine Market Access

## Policy

By LIU Yuanyuan & CHEN Chunyou

China has issued a new guideline including 10 measures to improve its market access system. This is the first policy document released at the central level to refine the market access system.

A pivotal characteristic of the document is its directions for establishing a fair market access system that is more compatible with the new quality productive forces, Guo Liyan, deputy director of the Economic Research Institute of the National Development and Reform Commission, told *Science and Technology Daily*.

### Optimizing the market access environment

With the new round of technological revolution and resultant industrial transformation, the traditional market access rules, systems, and regulatory approaches cannot be directly applied to the new business formats and sectors. Therefore, there is an urgent need to innovate institutional mechanisms for their faster and more robust development.

To create a better market environment for new industries, such as deep-sea exploration, aerospace, aviation, healthcare, new energy, AI, information security, and intelligent rail transportation, there will be precise implementation strategies to optimize the allocation



A view of the Suzhou Industrial Park in Jiangsu province, east China. (PHOTO: VCG)

of production factors and improve access efficiency.

Optimizing the market access environment for new business formats and sectors will help vitalize business entities and accelerate the development of new quality productive forces, Guo said.

### From innovative resources to real productive forces

Transforming ultra-large-scale market resources into real productive forces has long been a pain point for technological innovation and industrial development. Guo said refining the market access system to accelerate the formation

of new quality productive forces is a pragmatic measure to address this issue.

The guideline says advanced technology application promotion centers and various innovation platforms will be leveraged to commercialize research results and facilitate the flow of innovative resources and capital elements, thus accelerating the development of new quality productive forces tailored to the condition of each region.

In addition, select fields will be prioritized to promote collaboration among key enterprises, research institutions, and relevant regions in global frontier

scientific research. They include electronics and information, computational science, deep sea, aerospace, new energy, new materials, biomedicine, quantum technology, and modern seed industry.

These sectors will also be encouraged to engage in the formulation of international market access rules and standards for convenient and efficient application of innovative achievements in key areas.

The guideline will help ease restrictions on commercialization of research results, boosting the research and development of novel technologies and products, which will also help attract more capital throughout the entire process, Guo said.

### Expanding market access pilots

The guideline proposes expanding market access pilots. Centering on strategic emerging industries and future industries, it emphasizes leveraging policies, technical standards, testing and certification, and data systems to better promote the application of new technologies and products.

Some regions will be selected to carry out market access pilot projects, with special measures for relaxing market access introduced in batches. In the regions where special measures to relax market access have been implemented, policy evaluations will be carried out.

"Those pilot projects deemed ready for replication should be accelerated for wider application nationwide, providing robust support for further relaxing and standardizing market access," Guo said.



# Journal of Tissue Engineering: Advancing Research, Clinical Impact for Public Health

By Jonathan Knowles

Tissue engineering is a biomedical engineering discipline that uses combinations of engineering, cells, materials and biochemical cues to restore, maintain, improve or replace different types of biological tissues. As the understanding of how these factors interplay deepened, the research field of tissue engineering rapidly expanded. So, in order to disseminate the new discoveries in the field, a number of new journals were established. Today, we are starting to see the development of tissue engineered products becoming available and used clinically, and this includes products for hard and soft tissue reconstruction and augmentation for improved clinical outcomes.

The *Journal of Tissue Engineering (JTE)* was set up in 2010, when Sage Publishing realized it was a rapidly expanding research field. I was asked to set up the journal as I had had some success as editor-in-chief of the *Journal of Biomaterials Applications* with Sage, and this seemed to be an opportune moment to move into the open access publishing arena.

The *JTE* aims to publish papers specifically in tissue engineering, as opposed to more cell-focused journals which publish predominantly regenerative medicine or cell biology. We publish papers with an applied focus that are closer to the clinical problem — either in terms of application to the patient or with models that more closely recapitulate the actual cellular environment in the body. Two excellent examples are the development of organ on a chip models and the development of processing methods for extracellular vesicles for therapeutic use.

The *JTE* prides itself on having highly active and responsive editors to help the authors through the publication journey. We also have a rigorous level of peer review to ensure only papers of the highest quality are published.

Early on, Professor Hae-Won Kim at Dankook University in South Korea, joined as co-editor-in-chief. For many years we have also received strong support from Matt Dalby at Glasgow University and Wojciech Chrzanowski at Sydney University. All of them and many others have helped contribute to shaping the journal to make it the success that it is today.

Of particular note is the transition towards more freely available open access publishing. This has transformed the academic landscape, making work much more freely available, and this is clearly reflected in *JTE's* really high levels of downloads and citations.

We have tried to steer the journal along a path of academic excellence, endeavoring to publish only the leading papers, rather than publishing incremental



Jonathan Knowles. (COURTESY PHOTO)

papers. We have tried to determine the papers that really represent a ground-breaking change in the field. This can sometimes be difficult, especially with the advent of very advanced large scale and/or high throughput measurement methodologies such as genomics and proteomics, so prevalent today in biology.

However, we have endeavored to analyze each paper to ensure it remains true to the journal's subject area. We have also tried to identify areas that are in the early stages of development and expansion, and have published Special Collections to support these areas. Such topics include extracellular vesicles and additive manufacturing. These Special Collections have proven to be highly successful, with large numbers of downloads and subsequent cites. They are specifically aimed at new and emerging topics to attract submissions from world-leading authors.

A significant number of submissions to the journal come from China. It is excellent to see the rapid development in the science being carried out in China, driven by a large-scale investment from the government and the private sector.

One aspect of these submissions that we have seen occurring is the use of these high throughput methods to provide large datasets and subsequent deep analysis of this data. This type of analysis is relatively unique due to the high cost, but gives important insights into the control and regulation of tissue and how these might be utilized in tissue engineering approaches. One factor that seems to be particularly strong in papers from China is the clear integration of clinical and non-clinical colleagues, and this has contributed hugely to the basic understanding of a disease state and the subsequent development of a coherent tissue engineering strategy to repair the defective tissues.

The author is editor-in-chief of the *Journal of Tissue Engineering*, and professor of Biomaterials Science at the Eastman Dental Institute, University College London, UK.

## Journal Review

Since the concept of tissue engineering was established by Robert Langer and Joseph P. Vacanti in 1987, it has rapidly developed as an emerging technology. In 2000, it was listed as the top 10 popular professions for the 21st century by the *Time* magazine. People hope to make it possible in the near future to replace damaged human organs as easily as replacing mechanical parts.

The core of tissue engineering research is to establish three-dimensional composites made of cells and biomaterials, essentially constructing living tissues with vitality to replace damaged tissues and organs. This aims to achieve permanent replacement through the reconstruction of morphology, structure and function. With the development of life sciences, biomaterials, and engineering technology, tissue engineering

is about to become, or is already becoming, an effective treatment method for tissue and organ failure, marking the entry of medicine into a new era of manufacturing tissues and organs.

Compared to research focused on the cellular level, the *Journal of Tissue Engineering* prioritizes clinically oriented and application-focused research. It also keeps an eye on emerging topics, encouraging researchers in basic research to develop new technologies based on clinical needs, thereby promoting the advancement of the frontier fields of tissue engineering.

— Gu Ning, member of the Chinese Academy of Sciences and professor of the Nanjing University & Li Yan, associate professor of the Southeast University.

# From Slush to Lush: Nanniwan's Transformation

## Case Study

By YU Haoyuan

"I've come to Nanniwan, Nanniwan is a pleasant place. Everywhere are good crops, nice cattle and fat sheep..." On a recent trip to Nanniwan, many tourist groups spontaneously sang this famous folk song about a place steeped in Chinese history.

The place was once known as "Lanniwan," "lanni" meaning mud in Chinese. Today, it boasts the Nanniwan Scenic Area and beautiful terraced crop fields, which attract people from the surrounding cities to visit, camp and unwind.

### Grain for green

While the city of Yan'an in Shaanxi province is known as the red capital of China, having been the cradle of China's political revolution, Nanniwan is located about 90 kilometers away from Yan'an and is known for being the cradle of farming development in the country.

Nanniwan's green story began 83

years ago, when Japanese aggression resulted in bombs raining down on Yan'an, unleashing widespread destruction. With food supplies critically low, an army was sent to Nanniwan to improve food productivity. Men and women worked the fields with hoes, wove clothes, and rebuilt the area. In the process Nanniwan became known as Nanniwan.

As the People's Republic of China was established, many locals left Nanniwan, while others focused on industrial development. Nanniwan did not receive any environmental improvement for decades. However, things changed in the 1990s and the central government designated the city as the first pilot for the "Grain for Green" project, a nationwide reforestation campaign to tackle poverty in the rural areas and improve the ecological environment.

"Generations of people have planted trees in the mountains. One year, some trees died, so we planted more the next year. Now, we are finally seeing a lush green landscape," Ma Yanlong, a local resident, said.

Ma said although northern

Shaanxi is an arid and semi-arid region, Nanniwan is a wetland system and compared to other northern areas, the soil in Yan'an is more suitable for vegetation growth and advantageous for afforestation.

### Upgrading the area

The scenic area was earlier a quarry with no water. Over time trees were planted and waterways constructed, and five years ago, the Nanniwan Scenic Area was developed. It now has a lake with tall reeds, lotus flowers, and abundant fish life.

Now, it has an area of over 1,000 hectares, of which a little more than 400 hectares is designated as wetland, creating a wetland ratio of over 38 percent.

"In the old days, Nanniwan was just barren mountains and wild land," recalled a former teacher identified only as Su, who grew up in Nanniwan. "Today, it is the small Jiangnan of Shaanxi province." In China, Jiangnan is one of the most prosperous regions, with plenty of water and beautiful sights. Su said, "Rice is now grown in Nanniwan. The simple cave dwellings of the past have been renovated along

with the memorial hall and other public facilities."

Su and his companion are proud of Nanniwan's progress. "The significant environmental improvements reflect China's progress," Su said. "This change represents not only material advancements but also a profound spiritual upliftment."

### Better lives for the locals

A sanitation worker, who identified herself only by her surname Wang, said her life is much better now as she earns money by cleaning the scenic area. "Although the environment has improved, the downside is that the increased volume of water makes the winters colder," she said.

Fishing is a popular pastime for the residents. Some proudly showed their catch of large fish.

Another worker at the scenic area also called Wang, who was not a local resident but had a four-month work contract, said Nanniwan was no longer the stereotype. "I know Shaanxi is famous for the Loess Plateau, so I expected it to be mostly loess here. Instead, I found lush greenery and water here."

# Conference Discusses Robot Agile Hand Technologies

By LUO Yunpeng

Experts, industry professionals, entrepreneurs, and government officials came together to discuss the latest technological advancements, industry applications, and prospects of smart robotic agile hands at the Intelligent Robot Agile Handcraft Industry Development Conference held in Shenzhen, in south

China, on August 26.

The conference was themed "Agile Innovation, Crafting the Future."

"Agile hands play a crucial role as the final actuators connecting embodied robots with their environment, incorporating state-of-the-art technologies such as flexible sensing and high-performance materials," Shenzhen mayor Qin Weizhong said.

Over 20 prominent companies nationwide showcased their latest agile hand products and technologies, spanning various sectors such as industrial manufacturing, health care, specialized industries, and household services.

"The industry is a typical representative of the new quality productive forces," Qin said, emphasizing Shenzhen's dedication to providing a conducive environ-

ment for enterprises, institutions, and talent to thrive and driving advancements in key core technologies and ecosystems.

The conference is the first in the country to focus on the intelligent robotics flex-finger sector. It also included competitions and an exhibition to foster collaboration among government entities, industry players, academic institutions, research facilities and investors.

Yan Jinxiu, former president of the International Tunnel Association.

"We will build a large database of TBM and cloud computing centers to effectively solve the problem of intelligent tunneling control," said Jia Lianhui, chief engineer of China Railway Equipment Group. Jia believes that unattended and intelligent tunneling will become a reality in the near future.

# Undersea Tunneling Machine Sets New Record

From page 1

To solve the problems, the machine is equipped with a series of intelligent systems, such as automated pressure sealing, sophisticated ventilation and cooling systems, which greatly improves the adaptability under ultra-high water pressure conditions, ensuring the

continuous, stable and safe excavation of the shield machine in the difficult geological section.

Once completed, the Shenzhen-Jiangmen Railway will allow travel between Qianhai free trade zone in Shenzhen and Nansha free trade zone in Guangzhou in just 30 minutes, boosting economic devel-

opment in the Guangdong-Hong Kong-Macao Greater Bay Area.

At present, seven out of every 10 TBMs in the world come from China, and 95 percent of the TBMs used in China are manufactured domestically. "Our country now has about 5,000 TBMs, ranking first in the world," said