

More Measures to Facilitate Foreign Investment

Policy

By ZHONG Jianli

As part of China's commitment to expanding opening up and promote free trade, the country has introduced a host of new policies to lift restrictions on foreign investment (FI), especially in the manufacturing and medical sectors.

Zero restrictions on FI in manufacturing

Restrictions on foreign investment in the manufacturing sector will be lifted, according to the 2024 negative list for foreign investment access.

The new list, released by the National Development and Reform Commission (NDRC) and the Ministry of Commerce (MOC), effective on November 1, reduces the number of restrictions from 31 to 29, achieving zero restrictions in the manufacturing sector.

An NDRC official emphasized that this move is crucial for establishing a higher-level open economic system. The NDRC will continue to collaborate with the MOC and other relevant departments to ensure effective implementation of the new measures.

"The removal of foreign investment access restrictions in the manufacturing sector is an important measure to build



Workers check a car at Tesla's Shanghai factory. (PHOTO: XINHUA)

a modern industrial system, which will help China participate in the global industrial division and cooperation at a deeper level, and build a more open and resilient industrial chain and supply chain," an MOC official said during a briefing on the policy.

Introducing wholly-owned foreign hospitals

In a significant step for the healthcare sector, China will allow wholly-owned foreign hospitals to establish op-

erations in the major cities of Beijing, Tianjin, Shanghai, Nanjing, Suzhou, Fuzhou, Guangzhou and Shenzhen, as well as the entire island of Hainan.

The detailed guidelines for setting up such hospitals will be released at a later date, according to a statement released by the MOC, the National Health Commission and the National Medical Products Administration.

In addition, foreign-invested enterprises will be given the green light to en-

gage in research and development activities related to human stem cells and gene therapies within selected pilot free trade zones in Beijing, Shanghai and Guangdong province, as well as the Hainan Free Trade Port.

Tariff exemptions in Hainan's Boao Lecheng Pilot Zone

To further bolster the healthcare landscape, China will exempt import tariffs and value-added tax for eligible drugs and medical devices in the Boao Lecheng International Medical Tourism Pilot Zone in Hainan province.

This policy, jointly issued by the Ministry of Finance and four other departments, applies to medical institutions, medical education colleges and universities, and pharmaceutical research institutes registered in the zone with independent legal person status.

By broadening the scope of "zero-tariff" goods, this initiative will alleviate the financial burden on patients and stimulate consumption in health-related sectors.

It will also enhance the competitive edge of Hainan's healthcare sector, promote the development of medical technology, equipment and drugs to align with international advanced standards, and support its transformation into a premier medical tourism destination and innovation platform.



APL Materials: Voice of Materials Science Innovation

By WANG Bo

In 2012, the American Institute of Physics (AIP) Publishing, a not-for-profit physics-focused institute, commemorated the 50th anniversary of *Applied Physics Letters* by launching a peer-reviewed open access scientific journal *APL Materials*. The journal was launched to establish a materials science journal for the physics community, covering the entire spectrum of materials science, including topics in chemistry, biology, and engineering. In only 10 years, the journal has built a community of materials science researchers across the world.

The history of materials science unfolds as a lengthy and intricate process, traversing from the nascent stages of ancient civilizations to the contemporary era of advanced technology. In pivotal technological domains like energy, transportation, and information technology, materials often emerge as critical factors limiting progress, propelling a pace of development swifter than that seen in traditional disciplines. With resource challenges on the rise, there's a pressing demand for superior materials. Beyond electronics and energy, the application of complex materials in healthcare is steadily expanding, covering areas such as drug delivery, cancer detection, molecular filtration. This brings to mind a profound statement from my mentor years ago: "May your research and materials make people's lives just a little bit better."

For 10 years, *APL Materials* has upheld its founding principles of applied science of materials with technology as the driver. It has stood at the forefront of materials science research as a driver of innovation and collaboration. Embracing the three pillars of material sciences — dimensions, properties, and applications — the journal fosters international collaboration and communication. Demonstrating this commitment, the inaugural editor-in-chief, Professor Judith Driscoll, visited China to highlight the journal's global outreach. According to Clarivate's InCites data from 2018-2022, *APL Materials* boasts a 36.06 percent of international collaboration in publications, surpassing the world average of 26.27 percent in the category of material science, multidisciplinary. Notably, the most cited article in the journal also stems from international collaboration.

We have built a diverse, accomplished editorial team with a deep bench of accomplished individuals who bring invaluable experience and knowledge to our publication. Our board members and advisory committee members come from prestigious institutions in Asia, North America, Europe, and beyond.

Journal Review

Since the 20th century, materials science has rapidly emerged as one of the core disciplines, driving advancements in modern technology. From the widespread application of steel to the rise of semiconductors and the emergence of nanomaterials and biomaterials, materials science has not only propelled significant progress in fields such as energy, environment and biomedicine, but has also influenced people's daily life and societal advancement. It will increasingly intersect with such fields as information technology and AI, giving a strong momentum to socioeconomic development.

APL Materials offers deep insights into the latest trends in the discipline. It not only focuses on cutting-edge research but also promotes interdisciplinary collaboration. With the



Wang Bo. (COURTESY PHOTO)

I'm not the sole editorial voice for *APL Materials* based in China. Our esteemed Editorial Advisory Board, guiding our scientific direction and serving as dedicated ambassadors, features notable Chinese researchers.

And just as it is impossible to tell the story of materials science without the work chronicled in *APL Materials*, so too is it impossible to tell the story of *APL Materials* without the immense contributions of the materials science research community in China. One of the highest cited review articles in the journal, by Professor Zhang Hongliang, highlights the versatility and value of gallium oxide for the semiconductor community. The article is marked as a "Highly Cited Paper" by Clarivate, a leading global provider of transformative intelligence, garnering more than 240 citations since its publication in February 2020. Other seminal works in the journal include perspectives on spintronics, a review of nanogenerators for nanoenergy, a perspective on photocatalysts, and a perspective on the future of AI for flexible electronics.

Through investments in research infrastructure and world-class talent pools, China has undoubtedly become a leader in the materials science field. Their impact on the worldwide materials science community has been remarkable. Since our launch, the top contributors to the journal have been Chinese researchers — in terms of submissions and publications — and we are proud to serve as a platform for many of their contributions.

We are blessed to be living in an age of unbounded collaboration, and truly believe every individual has a critical role to play in shaping the trajectory of materials science. *APL Materials* invites you to join the conversation.

The author is the editor-in-chief of the *APL Materials* and a professor at the Beijing Institute of Technology.

— Tang Zhiyong, academician of the Chinese Academy of Sciences, and director of the National Center for Nanoscience and Technology.

Rural Health Services Set for Upgrade

By ZHONG Jianli

A comprehensive roadmap for transforming the rural health landscape is the base of a new set of guidelines by the China National Health Commission and 13 other related departments.

Aiming to provide rural residents with easy access to high-quality affordable healthcare services by 2030, and reduce the disparity in health services between urban and rural areas by 2035, the guidelines come after years of progress in alleviating poverty and ensuring basic medical care for rural residents.

The guidelines are part of a broader initiative to ensure that rural residents can enjoy the same level of healthcare

services as those in urban areas.

To achieve these objectives, the guidelines propose several key measures:

- Strengthening healthcare infrastructure: This includes upgrading healthcare facilities and equipping them with advanced technology to improve diagnostic capabilities and treatment options.
- Enhancing public health services: Actions will be taken to strengthen the prevention and treatment of key infectious, endemic, and parasitic diseases in rural areas and improve a fully functional disease control network that integrates urban and rural areas.
- Offering health services for key groups: Early screening and detection of cancer and other diseases will be ex-

panded to more rural residents, and targeted healthcare services will be provided to pregnant women, children and the elderly.

- Promoting healthy lifestyles: Initiatives will focus on educating villagers about the benefits of healthy eating, regular exercise, and preventive care.
- Advancing digital healthcare: Online consultations will be expanded to reach remote areas, ensuring that expert advice is available regardless of location.
- Integrating traditional and modern medicine: Traditional Chinese medicine will be integrated with contemporary medical practices to offer a holistic approach to healthcare. More than 80 percent of village clinics are expected to provide traditional Chinese medicine

services.

• Improving environmental health: Efforts will be made to improve living conditions and protect the environment in rural areas, reducing the incidence of diseases linked to poor sanitation and pollution.

• Developing health industries: Rural communities are encouraged to explore and develop rural health industries including the elderly care, rural tourism, and Chinese herbal medicine planting and processing.

The guidelines represent a significant step towards realizing the vision of a healthier, more equitable China. By addressing the needs of rural people, it will help accelerate the realization of the "Healthy China" initiative.

Gansu Water Management Gets Smart

Case Study

By ZHONG Jianli & XIE Manbin

In a significant push towards high-quality water management, Weiyuan county in Gansu province, northwest China, the source of the Wei River, which is the largest tributary of the Yellow River, is embracing a technological transformation. This transformation focuses on establishing flood monitoring

systems, smart rural water supply models, and innovative digital governance of rivers and lakes.

Automatic flood warning system

Weiyuan's unique geography and complex terrain make it particularly vulnerable to mountain floods, especially during heavy rainfall.

The local government has taken measures to protect villages along rivers and streams, by implementing a mountain flood monitoring and early warning system. This system utilizes the Internet of Things (IoT) technology, big data,

and mobile smart terminals to provide real-time information on rainfall, automatic flood warnings, and rapid evacuation alerts.

"The monitoring system has enabled us to track rainfall and flooding conditions in real-time, ensuring timely information dissemination," said Wang Jine, head of the flood prevention and drought relief team at Weiyuan Water Resources Bureau.

Since the beginning of the flood season this year, the system has sent out over 73,000 warning messages to responsible officials and more than 150,000 alerts to residents in threatened areas, significantly enhancing public safety.

Smart water supply project

With a dry climate and uneven water distribution, Weiyuan's northern mountainous areas struggled with water shortages. The county has implemented rural drinking water safety projects, which provide clean water sourced from the Tao River to 350,000 residents. However, new challenges have emerged regarding water supply management.

"The county's water pipelines span over 8,200 kilometers, many buried underground, leading to issues such as leaks, unstable water pressure, and high management costs," said Ma Xingbang, deputy director of the Tao River Project Service Center.



A drone photo of the Tao River in Weiyuan, Gansu province. (PHOTO: XINHUA)