

Young International Scientists Say

China's Research Environment Highly Dynamic, Collaborative



By LU Zijian

Yin Min Htwe, a former civil servant in Myanmar, is currently pursuing her academic career in China as an assistant researcher at the Coconut Research Institute of the Chinese Academy of Tropical Agricultural Sciences (CRICATAS). Based in Sanya, a coastal city in Hainan in south China, she calls China her second home.

A new chapter

In 2016, Yin was working at the Biotechnology Department of Myanmar when she learned there was an opportunity to conduct research in China as a visiting scholar. Yin, who had a PhD in biotechnology from Mandalay Technological University in Myanmar, decided to apply and was accepted.

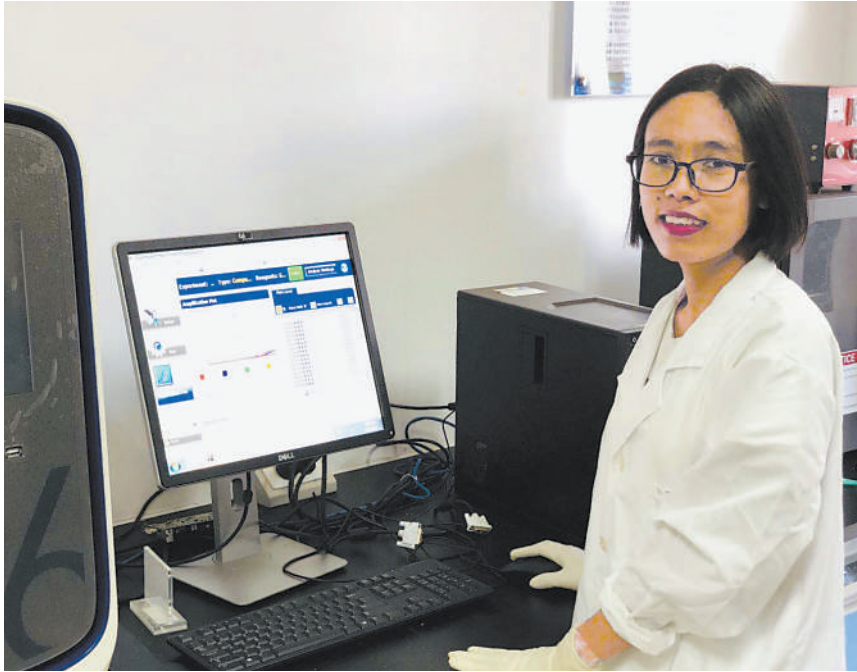
"Though she didn't have much research output at that time, her academic background matched what we do here, so we offered her the position," Wang Yong, a professor at CRICATAS and Yin's supervisor, told *Science and Technology Daily*.

They found her to be a diligent researcher. Research is no easy job, and experiments may last till midnight, but Yin showed strong implementation capacity, according to Wang. Turning a research idea into result timely is very important to the entire research project and Yin always did her assignments fast. Her work included data analysis, writing manuscripts and feedback for correction, contributing to the smooth operation of the project.

Yin called her research period at CRICATAS "enriching and transformative." She said the work enhanced her knowledge and skills, particularly in areas such as gene mining and data analysis, and shaped her outlook on applying research to address real-world challenges, especially in palm crop improvement.

Pushing boundaries

After three years' research as a visiting scholar, Yin decided to do full-time postdoctoral research in China as she wished to continue her previous work, and found the research environment in China aligning with her interests in gene mining and data analysis for palm crops. "The research environment in China



Yin Min Htwe in the laboratory. (COURTESY PHOTO)

is highly dynamic and collaborative with a strong emphasis on innovation and applied research, which fosters a productive and competitive atmosphere," Yin said. "Researchers in China are encouraged to push the boundaries of their fields."

She secured a position with CRICATAS and both were happy about it. "She did well when she was a visiting scholar, so we were glad to continue our cooperation with her," Wang said.

Yin once again proved her worth. She was named as Class E (full-time) talent by the Sanya Yazhou Bay Science and Technology City in 2021, and her research program, in which she is the lead researcher, received the 2024 Fund for Less Developed Regions within the scope of the National Natural Science Foundation of China.

During her stay in China, she also published nine Science Citation Index (SCI) papers as the first author or joint first author.

But she modestly attributes these achievements to others. "I am fortunate to have strong support from my supervisor and all my team members, whose collaboration is invaluable. The SCI papers are a direct result of our collective efforts," she said.

Finding her 'family' in China

Research aside, Yin enjoys her life in China, finding it "welcoming and supportive."

She arrived in Hainan in March 2017 and received unstinting help from her supervisor and colleagues. "They taught me the relevant techniques and how to operate the machines in the laboratory," Yin said. "They are like my family, supporting me all the time. I didn't feel I was in a foreign country."

She in turn helped her fellow researchers to improve their English, Wang said.

Since 2019, Yin has been learning Chinese and can speak fluent Mandarin now. "I want to learn Chinese to gain a deeper understanding of the Chinese culture and China's rich history. Also, knowing the language enables me to communicate more effectively, both in academic settings and in daily life," she said.

Promising prospects

Yin's story is a facet of the sci-tech cooperation between China and Myanmar.

In November, China's Ministry of Science and Technology (MOST) released guidelines to apply for the first batch of key special projects for the 2025 Intergovernmental International Cooperation on Science and Technology Innovation.

Under this cooperation framework, there will be 10 programs for China-Myanmar intergovernmental joint research project with a total fund of 15 million RMB. The fields of research are agriculture, climate change, artificial intelligence, measurement, agricultural

machinery, forests and biodiversity.

In 2018, China and Myanmar established an intergovernmental cooperation mechanism on science, technology and innovation. In November that year, MOST and Myanmar's Ministry of Education held the first meeting of the China-Myanmar Joint Committee on Science and Technology Cooperation. The meeting named the priority areas in bilateral sci-tech cooperation, ranging from agriculture and drinking water safety to new energy, traditional medicine, environmental protection, disaster prevention and mitigation, and measurement and standards.

China and Myanmar also collaborate through the Belt and Road Initiative, China-ASEAN Technology Transfer Center, and Lancang-Mekong Cooperation.

With support from MOST, every year Chinese universities, research institutions and enterprises organize technological training sessions for personnel from other developing countries, including Myanmar.

In 2018, a China - Myanmar Joint Laboratory on Radar and Satellite Communications was inaugurated in Yangon. The China (Guangxi)- Myanmar Agricultural Technology Demonstration Base in Myanmar promotes agro-technology.

The eighth Greater Mekong Subregion (GMS) Summit, which concluded in Kunming, Yunnan province in southwest China, on November 7 this year, endorsed the GMS Innovation Strategy for Development 2030. The strategy aims to establish the GMS as a dynamic hub of innovation, creativity, and sustainable development, driving inclusive economic prosperity, and improving the well-being of its people through a more sustainable and integrated economy.

Yin thinks prospects of cooperation between China and Myanmar in science, technology and talent training and exchange are highly promising. Closer collaboration means immense potential for knowledge exchange, joint research projects, and sharing advanced technologies.

She hopes her experiences in both Myanmar and China will enable her to bridge different scientific perspectives and foster meaningful collaborations.

This column is written in cooperation with the China Science and Technology Exchange Center (CSTEC).

Policy

New Guidelines to Stimulate Digital Trade

By LONG Yun

New guidelines were launched on November 28 as part of China's broader strategy to promote reform, innovation, and the development of the digital sector.

The new guidelines emphasize innovation, safety, openness, and win-win cooperation as key principles for advancing digital trade. They call for deeper integration between the real economy and the digital economy, aiming to foster new growth drivers and advantages for international trade.

By 2029, it is expected that digitally deliverable services will account for over 45 percent of China's total service trade. By 2035, the figure would increase to more than 50 percent. These targets reflect China's commitment to enhancing its digital infrastructure and alignment with international economic and trade rules.

A major focus of the guidelines is on opening up, particularly in terms of market access and data flow. The document proposes easing restrictions on foreign investment in the digital sector, including telecommunications, Internet, and cultural industries. Additionally, it aims to facilitate and regulate cross-border data flows, ensuring security and efficiency.

To achieve these goals, China plans to build platforms that support high-standard digital trade opening up and participate actively in the formulation of international digital trade rules,



A foreign visitor tries out XR glasses at the Global Digital Trade Expo held in Hangzhou, Zhejiang province. (PHOTO: XINHUA)

Extensive Plan for Digital Finance Growth

By ZHONG Jianli

The People's Bank of China and six other governmental departments have jointly released an action plan aimed at promoting the high-quality development of digital finance by 2027. The announcement, made on November 27, outlines a framework to establish a financial system that is highly compatible with the growth of the digital economy.

The plan highlights the crucial role of data elements and digital technologies as driving forces in accelerating the digital transformation of financial institutions. It aims to solidify the foundations of digital finance and enhance its governance structure.

Financial institutions are encouraged to leverage digital technologies to improve the efficiency of their services, thus facilitating the high-quality development of China's digital economy.

To effectively implement the digital transformation of financial institutions, the plan suggests strengthening digital technology support capabilities. This includes the establishment of a digital public service platform for the

promoting an environment that is open, fair, just, and non-discriminatory.

In line with these objectives, China is also committed to deepening international cooperation in digital trade, including strengthening collaboration in artificial intelligence, big data, cross-border payments, and mobile payments. The country seeks to enhance its partnerships with ASEAN, Central Asian countries, BRICS nations and others, to integrate digital infrastructures further and boost digital trade.

Moreover, the guidelines encourage the development of various players within the digital trade ecosystem, from e-commerce platforms to service providers.

Some industry experts noted that China's leading companies have already demonstrated significant competitiveness in the international market through innovative digital services. The new policy is expected to send a positive signal, encouraging these entities to continue innovating and playing a more active role in driving economic growth and job creation.

These new measures come at a time when China's digital trade is already showing robust growth. According to a report on China's development of digital trade released by the Ministry of Commerce this September, China's import and export of digitally delivered services trade rose 8.5 percent year-on-year to 2.72 trillion RMB in 2023, a record high. Furthermore, the import and export scale of the country's cross-border e-commerce reached 2.37 trillion RMB last year, up 15.3 percent year-on-year.

Technology Protects Underwater Wonder

Tech+Culture

By WANG Jing & WANG Shanshan

The 2024 Baiheliang Tourism and Culture Festival in Fuling district, southwest China's Chongqing municipality, has seen a flood of visitors to Chongqing head for the Baiheliang Underwater Museum, described by UNESCO as "a fabulous first-world-wide example of the presentation of underwater cultural heritage in a site reachable by the non-diving visitor."

However, Baiheliang once faced per-

manently sinking to the bottom of the Yangtze River because of the operation of the Three Gorges Dam. Saving the precious cultural relics was an ingenious exercise, made possible by the application of state-of-the-art design and cutting-edge technology.

Difficulty in protecting underwater relics

Known as the world's first ancient hydrologic station, Baiheliang is a stone bridge with a length of 1,600 meters and an average width of 15 meters, which recorded and witnessed the water level changes of over 1,200 years. With 165 inscriptions and 18 carved stone fishes, it boasts significant scientific, historical and art values.

"The approach of preserving the stone bridge [and its inscriptions] with its original site, appearance and environment is unprecedented in the world," Jiang Rui, director of Baiheliang Underwater Museum, told *Science & Technology Daily*, adding that it took almost 10 years to come up

with an effective protection scheme.

In 1994, when the Three Gorges Dam was built, Baiheliang was faced with sinking into oblivion after the dam began to store water. At that time, a stream of experts visited Chongqing to see how they could contribute to saving this cultural relic.

After historical research and scientific consideration, Ge Xiurun, an academician of the Chinese Academy of Engineering, designed the "non-pressure container" scheme.

In the design, a protective cover was built on the original site of Baiheliang, and a net horizontal pressure system was used to discharge the filtered Yangtze River water to maintain the external and internal balance of water in the cover.

Moreover, a circular visitor's gallery was also planned inside the protective cover, which can not only solve the seepage damage, curtain grouting and other problems, but also greatly enhance the visitors' viewing experience.

Construction of the Baiheliang Underwater Museum commenced in 2003 and was finally completed in 2009.

Sci-tech solutions revitalize Baiheliang

"The amount of water in the cover is more than 4,500 tons, and the pump pipes distributed in the museum are

continuously pumped, filtered and injected 24 hours a day, to maintain the balance of internal and external water pressure," said Chen Tao, head of the Baiheliang underwater protection project management department.

For the first time, it also adopted innovative solutions such as non-combustible cables and net horizontal pressure systems to ensure the safety of cultural relics. Experts also replaced the aluminum alloy lamps used before with stainless steel lamps, creating the only deep-water LED lighting system in China at that time.

In order to show the inscriptions clearly, the museum has cooperated with scientific institutions to optimize the aviation plexiglass process, upgrading 23 windows with a diameter of 80 cm to be more stable, more pressure resistant and more transparent. The museum has also regularly sent divers down to clean the inscriptions to prevent microbial corrosion.

With the help of digital technology, the museum has also developed a VR project showing the past and present of Baiheliang. "We are working with the Nilometer of Rhoda Island in Egypt to jointly apply for the world cultural heritage status, hoping China's Yangtze River civilization merges with the world's river civilizations," Jiang said.



The Baiheliang Underwater Museum in southwest China's Chongqing municipality. (PHOTO: VCG)