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SCO Expected to Play Greater Role in Global Governance

By QI Liming

As the Shanghai Cooperation Organization (SCO) marks its 25th anniversary, it has evolved from a regional security co-operation mechanism into a comprehensive regional cooperation organization. The SCO now brings together 27 countries, covering nearly half of the world's population and spanning over 50 fields of cooperation. Its concepts and practical achievements have benefited all countries in the region and become a significant force in the process of global governance system reform.

SCO Secretary-General Nurlan Yermekbayev said the SCO's influence continues to grow across the Eurasian region and globally. It is the first international organization named after a Chinese city, co-founded by China, and headquartered in China. Yermekbayev emphasized that China has always played a positive and constructive role in the organization's development, putting forward a series of practical cooperation initiatives.

The 2025 SCO Summit, held in China's port city Tianjin, was "the largest summit held by the SCO since its establishment, and achieved fruitful results, leaving a deep impression on everyone," he remarked.

The Global Governance Initiative (GGI) was proposed during the Tianjin Summit. A development strategy for the SCO in the 2026-2035 period was also approved during the summit. Over the past year, China has taken the lead in implementing the consensus reached at the Tianjin Summit and has been promoting cooperation in various fields through concrete measures. Seven application platforms are fully operational, and a total of 160 cooperation projects have been incubated. The platforms cover green industries, digital economy, sci-tech innovation, energy, higher education, vocational and technical education, and artificial intelligence.

The action plan for high-quality development of economic and trade cooperation among the SCO member states has been implemented with remarkable results. Their trade volume has increased, and the resilience of regional economic circulation has been strengthened. Nearly three-quarters of the planned 10 GW solar photovoltaic and wind power projects have been carried out, and more than two-thirds of the 100 "small and beautiful" livelihood projects have been launched, benefiting the people of all member countries.

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Staff from China Railway Qinghai-Xizang Group Co., Ltd. carry out maintenance work on the Qinghai-Xizang Railway in the heart of the Kunlun Mountains in February, 2026. (PHOTO: XINHUA)

20 Years On, Qinghai-Xizang Railway Reshapes the Region

By LIANG Yilian

In the 20 years since it opened, the 1,956-kilometer Qinghai-Xizang Railway has delivered a remarkable record: 104 million passengers and more than 824 million tonnes of freight transported across the "roof of the world." The landmark project has transformed the region's connectivity, economy and way of life.

Improving livelihoods

Stretching from Xining in Qinghai province in the east to Lhasa in the Xizang autonomous region in the west, the Qinghai-Xizang Railway has enabled people, goods and the unique resources of the plateau to flow across mountains and valleys, boosting markets and industries.

The Xizang Gaerde Ecological Live-

stock Industry Development Co., Ltd., for example, located deep in the Qiangtang grassland, has leveraged railway cold-chain transportation to deliver perishable fresh milk to markets across China, helping increase the incomes of thousands of local herder households. At Qarhan Salt Lake in Qinghai, potash fertilizer production lines are seamlessly connected with railway terminals. In 2025, more than four million tonnes of potash fertilizer were transported by rail.

The railway has reshaped the economic landscape of Xizang and transformed the lives of countless people.

Every June, as cordyceps, a parasitic fungi with high medicinal value, enters its peak trading season, the Qinghai Jiuying Cordyceps Trading Market near the

Xining railway station becomes one of the busiest places in the region, attracting merchants from across the country.

"In the past, we had to drive for days to purchase cordyceps. Now herders can simply take the train and bring their products here," said Ma Ke, a trader who has been doing business at the market for more than 20 years. "The railway has brought the market to life."

Today, the Jiuying Cordyceps Trading Market has more than 20,000 businesses and an annual transaction volume exceeding 10 billion RMB. During the peak season, more than 5,000 railway express parcels are handled every day. The railway has shortened transportation times and helped bring the region's specialty products to the national market. See page 2

International Cooperation

Chinese Equipment Powers Kyrgyzstan's Development

Edited by WANG Xiaoxia

In the rugged mountains of Kyrgyzstan, the roar of heavy machinery heralds the reshaping of the industrial landscape. From the high-altitude permafrost to the scenic shores of Issyk-Kul Lake, Chinese construction equipment is playing a pivotal role in the country's major infrastructure and mining projects.

A key contributor is LiuGong Machinery based in Guangxi Zhuang autonomous region in south China, whose bulldozers, excavators and loaders are now the workhorses of several national endeavors. One of its prominent projects is the China-Kyrgyzstan-Uzbekistan Railway, which promises to be a new artery for regional trade.

In 2025, the company's first batch of loaders arrived at the construction site, followed by the deployment of additional loaders and excavators to handle earthwork excavation, material loading, unloading and transport. This also marked the first time the company's electric construction machinery products entered the Central Asian market. To ensure smooth progress, LiuGong has set up a local subsidiary and run regular equipment patrols.

The impact goes beyond steel and engines. For 26-year-old Marcel Chokoev from the Lake Issyk-Kul region, the arrival of LiuGong brought a career. "In February, I knew nothing about machinery," he said. Now, after intensive training by Chinese mentors, he can undertake maintenance and client consultations.

"They taught me everything, and we've become real friends. I've gained professional skills and an understanding of true cross-border friendship," he said. His fluency in Chinese makes him a vital link, bridging the communication gap between the technical team and local clients.

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WEEKLY REVIEW

FAST Offers New Clues to Cosmic Evolution

Using China's Five-hundred-meter Aperture Spherical radio Telescope (FAST) together with the Dark Energy Spectroscopic Instrument, an international team of researchers conducted high-precision measurements of neutral hydrogen evolution in the universe over the past 4.5 billion years. They found that the density of neutral atomic hydrogen 4.5 billion years ago was about 1.4 times its present level.

China Launches New Academic Data Journal

The Institute of Automation under the Chinese Academy of Sciences has launched an international academic journal titled *Data Research and Applications* (DRA), dedicated to the open sharing of scientific research data. The DRA will serve as a high-level, interdisciplinary, open-access, peer-reviewed platform for academic exchange among researchers all over the world.

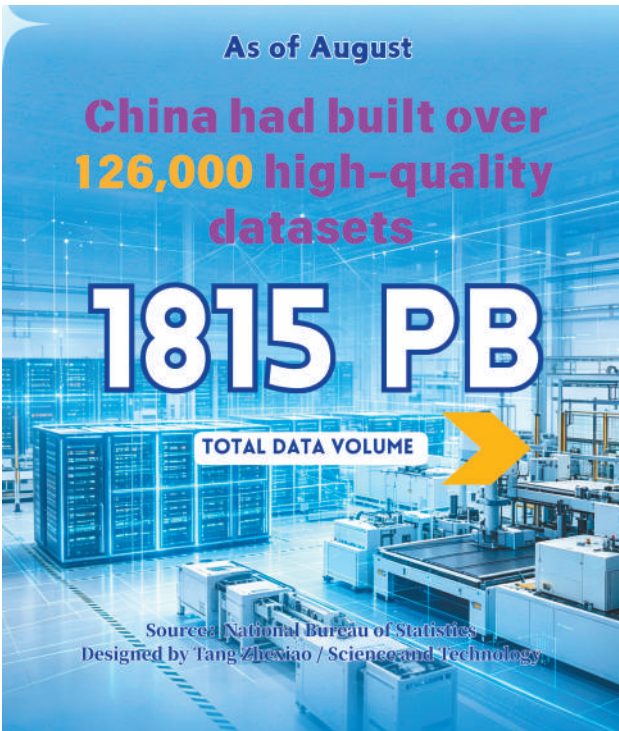
NASA Sends New Telescope into Dark Universe

NASA's Nancy Grace Roman Space Telescope is now heading toward the L2 point, about a million miles from Earth, where it will survey vast regions of the universe to investigate dark matter, dark energy and distant worlds. Capable of surveying the sky about 1,000 times faster than the Hubble and transmitting 1.4 terabytes of data each day, it is expected to open new windows onto the cosmos.

Human-only Gene May Explain Our Brainpower

A study by Columbia's Zuckerman Institute has found that the microglia in the human brain mature over a period of four to eight years, compared with only several weeks in mice. These immune cells play a role in forming developing neural circuits, and their prolonged maturation may be one factor behind the human brain's complexity and advanced cognitive abilities.

New Graphic



WECHAT ACCOUNT



E-PAPER



STI Frontier

HIAF: '3-in-1' Heavy-ion Facility

By LU Zijian & YE Qing

Located on the Renping peninsula in Huizhou, south China's Guangdong province, the High Intensity heavy-ion Accelerator Facility (HIAF) successfully passed the process acceptance inspection in July and entered trial operation phase.

It is the world's first "three-in-one" advanced heavy-ion research facility integrating a superconducting linear accelerator, a synchrotron and a storage ring, Yang Jiancheng, deputy director of the Institute of Modern Physics (IMP), Chinese Academy of Sciences (CAS) and chief engineer of HIAF, said.

HIAF provides heavy-ion beams with the highest pulsed beam intensity currently available worldwide and is equipped with a nuclear mass spectrometer with the highest measurement accuracy, providing a world-class research platform for cutting-edge nuclear science and major applications of heavy ions.

New solution

What exactly is HIAF? Yang made a comparison, saying it is both a giant microscope and an ion cannon. A heavy-ion accelerator enables man-made high-speed ion beams to crash targeted materials precisely to generate a large amount of particle debris. Scientists analyze the debris to explore the micro structure inside the materials.

The idea of building HIAF was proposed by IMP in 2009, and the HIAF was constructed in 2018. The first beam was generated in 2025. The superconducting ion source of HIAF lies 13 meters under earth. "This is the world's first fourth-generation superconducting electron cyclotron resonance (ECR) ion source developed by our team. We have increased the microwave frequency to 45 gigahertz, setting a world record for the highest beam current achieved by an ECR ion source," Shen Guodong, head of the accelerator systems office of HIAF technology center, said.

The ion source operates in a pulsed-beam mode. It is like precisely controlling an engine's throttle and ignition timing, enabling the ion beam to reach its optimal operating state at the very moment it is launched, Shen said.

But the innovations go far beyond this. To accumulate a large number of particles into an ultra-high-current beam, the particles must be kept orderly and not be allowed to spread chaotically. This has been a world-class challenge, with no major breakthroughs internationally for more than two decades.

The team developed a new approach combining six-dimensional phase-space painting and independent-clock stacking. The method not only expands the injection process from the two-dimensional space used in previous approaches to six dimensions, but also overcomes the limitation imposed by the circumference ratio.

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Guidelines for Ethical AI Medical Imaging Research

Policy Express

By CHEN Chunyou & LIU Yin

To regulate algorithm research, technology development, clinical validation and translation in AI medical imaging, mitigate ethical risks, and promote responsible innovation, the Ministry of Science and Technology released the Ethical Guidelines for AI Medical Imaging Research on August 27.

AI medical imaging shows strong potential in early diagnosis, workflow optimization and resource allocation. Wang Guoyu, a member of the Medical Ethics Subcommittee of the National Science and Technology Ethics Committee, which has developed the document, said medical imaging data is highly sensitive. Risks — including privacy breaches, algorithmic bias, technology misuse and unclear accountability — must be addressed throughout data collection, storage and sharing.

The guidelines set out six core principles for AI medical imaging research: advancing human welfare, promoting fairness and justice, respecting human subjectivity, protecting privacy and data security, ensuring safety and controllability, and enhancing transparency and trustworthiness.

"Patient interests must come first, with careful assessment of potential im-



A Chinese doctor conducts medical imaging analysis alongside local doctors at the China-Guinea Friendship Hospital in Conakry, the capital of Guinea. (PHOTO: XINHUA)

pacts on health and life safety," said Wang, adding that fairness requires preventing algorithmic discrimination and group bias, especially for vulnerable groups such as children, the elderly and patients with rare diseases.

For privacy and data security, the guidelines call for mechanisms for data authorization and withdrawal of consent to prevent unauthorized access and leaks.

Qu Jingjing, a young scientist at the Shanghai Artificial Intelligence Laboratory, said elevating safety and transparen-

cy in ethical principles means establishing full-lifecycle risk management, with preventive, monitoring and response mechanisms, and ensuring that technical logic and imaging interpretation decisions remain interpretable and verifiable.

The guidelines lay down tiered requirements — general, specific and ethics-review focused — to provide targeted and practical rules suited to the complexity and diversity of AI medical imaging applications.

For the research process, the document specifies rules on legal compli-

ance, informed consent, accountability and conflict-of-interest management. It also clarifies when informed consent may be waived and calls for a collaborative system to clarify the roles of researchers, medical institutes, technology companies and regulators.

Data is both the foundation of AI medical imaging research and a major risk area. The guidelines set four data requirements: establishing a security system covering research, trials and translation to ensure traceability; using datasets with clear sources and scientific validity; enforcing data anonymization so that processed information cannot re-identify individuals or be restored; and exercising caution when using synthetic data to train AI models.

To tackle the "algorithm black box," core metrics such as sensitivity and specificity must meet appropriate standards. Algorithms must undergo repeatability testing and cross-device, cross-hospital and cross-population validation to prevent clinical bias. Bias must be identified and corrected at each stage — data collection, annotation, training and evaluation.

"The guidelines mark a shift from principle-based advocacy to detailed guidance," said Zhang Jun, director of the radiology department at the Huadong Hospital Affiliated to Fudan University.



Smart Oil & Gas Industry with AI in Pipeline

By TANG Zhexiao

China's domestic oil and gas supply will reach 440 million tonnes of oil equivalent by 2030, according to a five-year plan (2026-2030) issued by the National Development and Reform Commission and the National Energy Ad-

ministration.

The plan also sets the target of constructing 20,000 km of long-distance oil and gas pipelines, expanding the nation's total long-distance pipeline network to 220,000 km.

Natural gas reserves will be expanded to account for more than 13 percent

of national energy consumption. The annual receiving capacity of liquefied natural gas terminals will hit 200 million tonnes, while the annual land-pipeline natural gas import capacity will reach 114 billion cubic meters. The annual carbon dioxide injection volume for carbon capture and storage, and carbon capture, utilization and storage (CCUS) will be 10 million tonnes.

Centering on the two major tasks of safeguarding energy security and pursuing green and low-carbon development, the plan outlines priorities including scaling up exploration, improving infrastructure, deepening international cooperation, accelerating green transition and fostering new-quality productive forces.

Strategic oil and gas security bases will be built in areas such as Ordos, the Bohai Bay, Sichuan-Chongqing region, and Tarim to underpin domestic oil and gas output targets.

Besides advancing energy conservation and carbon reduction in oil production, the plan introduces the target of oil-consumption peaking.

Regional CCUS industrial clusters

supporting oil and gas-concentrated cities such as Shandong's Dongying and Shaanxi's Yulin will be built to take the lead in low-carbon urban transition and cultivating low-carbon industrial groups.

The plan has a special column on "AI plus Oil and Gas." It advocates accelerated integrated application of new-generation information technologies such as artificial intelligence and the Internet of Things to construct smart oil and gas fields.

National major science and technology projects for new-type oil and gas exploration and development will be advanced to enhance independent innovation capacity.

Key technical equipment will be developed for oil and gas exploration and development. They include a 15,000-meter intelligent drilling rig, a 3,000-meter-class deep water drilling blowout preventer with a multi-component composite control system, and a 1,500-meter-class all-electric subsea control system equipment.



The storage tank area and receiving terminal of an LNG receiving station at Yangkou Port in Rudong, Jiangsu province. (PHOTO: XINHUA)

20 Years On, Qinghai-Xizang Railway Reshapes the Region

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Where transportation networks expand, industries thrive. More and more agricultural and livestock products from the Qinghai-Xizang plateau are reaching markets beyond the region, while increasing numbers of visitors are traveling to the plateau.

Over the past two decades, Xizang's GDP has grown more than ninefold, while Qinghai's economic output has also surged significantly.

Protecting the environment

The Qinghai-Xizang plateau is the source of the Yangtze River, the Yellow River, and the Lancang River and serves as a crucial ecological security barrier for the world.

From the very beginning of its construction, the Qinghai-Xizang Railway adopted a comprehensive environmental

supervision system for the entire railway line — the first of its kind in China. It incorporated wildlife corridors, constructing bridges and passages for animal migration, and restoring fragile alpine grassland ecosystems. These efforts have created a new model for harmonious coexistence between railway development and nature.

An over 1,000-kilometer green corridor stretches along the foothills of the Kunlun Mountains. Nearly eight million square meters of vegetation have restored life to the once barren Gobi landscape, while dozens of wildlife passages have remained unobstructed.

Thanks to sustained protection efforts, the Tibetan antelope population in the Xizang autonomous region has increased to over 300,000 at present. Populations of other rare wildlife, including

Tibetan wild donkeys, wild yaks and black-necked cranes, have steadily increased, indicating a continued positive trend in the plateau's ecological health.

Expanding openness

On June 28, the first "Xining-Balkhan" Central Asia freight train departed from Shuangzhai station in Xining, Qinghai province. Carrying cargo in 55 container cars, the cross-border train traveled 5,420 kilometers, leaving China via the Khorgos Port. It then traversed Kazakhstan before reaching the ultimate station in Turkmenistan. The entire journey took approximately 14 to 15 days.

The launch marked further expansion of cross-border logistics links between the Qinghai-Xizang plateau and Central Asia. Since the first international freight train service began operating in 2016, Qinghai's internation-

al freight trains have connected 16 cities in 10 countries, accelerating the development of a diversified, efficient and interconnected international logistics network.

"In 2025, the Xizang autonomous region's total foreign trade value reached 8.479 billion RMB, surpassing the six billion RMB target set in the 14th Five-Year Plan (2021-2025). Exports of combed pure wool yarn, wine and Tibetan incense increased 80-fold, 17-fold and twofold year on year, respectively," said Dan Zeng, an official at Lhasa Customs.

"Products such as fragrant pork from Nyingchi and red wine from Shannan achieved their first-ever exports, while natural drinking water from the Ngari region successfully entered the South Asian market," Dan said.

Case Study

3D Printing Turns Solid Waste into Highway Infrastructure in Ningxia

By CHEN Chunyou & WANG Yingxia

A 50-meter-long, three-meter-high noise barrier along the Yinchuan South Logistics Expressway in Ningxia Hui autonomous region, northwest China, is in the limelight, not only for its embossed murals depicting the Yellow River and the Helan Mountains, but for how it was built.

It is Ningxia's first concrete noise barrier fabricated using in-situ 3D printing technology that incorporates construction and industrial solid waste as raw materials.

Ningxia faces significant challenges in solid waste treatment. The region generates over 80 million tonnes of industrial solid waste annually, with a utilization rate of just 45 percent. Construction waste output reaches 12 million tonnes per year, of which less than 30 percent is recycled. The recycling industry for retired equipment from photovoltaic and wind power generation is still in its infancy.

The 15th Five-Year Plan (2026-2030) calls for advancing the circular economy and improving the waste-recycling system. The project marks a breakthrough in intelligent and green transport infrastructure, offering a practical example for low-carbon transition in northwest China during the plan period.

At the construction site, a large 3D printing system was used to deposit layers of concrete slurry made from solid waste, gradually forming the wall with embossed patterns.

"The cantilever-type 3D printer mixes cement, steel fibers, sand and other materials, pumps the mixture through a delivery pipe, and prints layer by layer through programmed slicing control," said Xu Xiaoguang, a researcher at Ningxia Communications Construction Co., Ltd. (NXCC). "We printed five pan-

els highlighting Ningxia's local landscape and cultural features."

The project is part of a key provincial-level R&D initiative jointly carried out by NXCC, Southeast University and CCC First Highway Consultants Co., Ltd. The team overcame key technical challenges, including material formulation for solid-waste-based concrete, operational stability of in-situ printing equipment, and precision control for complex geometries — all adapted to the arid and semi-arid climate of the region.

Compared with traditional concrete construction, the in-situ 3D printing technology eliminates formwork design, fabrication, installation and removal, reducing on-site procedures and labor, while achieving integrated structural formation with improved compactness and durability. It can also produce complex shapes and customized designs.

"This is the first large-scale application of 3D printing in highway auxiliary facilities in Ningxia, and an important step forward in intelligent and green transformation of transport infrastructure," said Zhang Lei, director of the division of science and technology for social development at the Science and Technology Department of Ningxia.

"This is also the first provincial-level key R&D project undertaken by the transport sector in Ningxia," said Hui Yingxin, deputy general manager of NXCC. He said the research team will continue to promote large-scale application of solid-waste-based 3D printing in road, construction and landscape projects.

"In the future, we will achieve more custom-shaped structures such as landscape bridges and hollow walls, providing technical support for the digital upgrading of transport infrastructure and high-value utilization of solid waste in Ningxia," Hui said.



A 50-meter-long, three-meter-high noise barrier built by 3D printing technology in Ningxia Hui autonomous region. (COURTESY PHOTO)

SCO Expected to Play Greater Role in Global Governance

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Currently, the economic aggregate of the "SCO family" is close to 30 trillion USD. The integration and coordination of industrial and supply chains have continued to deepen, providing a practical example for cooperation within the Global South and the exploration of independent development paths.

Ruslan Kenzhaev, deputy editor-in-chief of *Narodnoe Slovo*, a leading Russian-language daily newspaper in

Uzbekistan, said that from security governance to interconnection, and from technological innovation to green transformation, the SCO is continuously translating its development potential and consensus into practical actions.

This cooperation effectiveness is the foundation for maintaining regional stability and promoting common development, and will drive the SCO to play a greater role in global governance.

Chinese Equipment Powers Kyrgyzstan's Development

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The partnership is built for harsh conditions. In a highland mine tucked in the Tian Shan mountains, at an elevation of 4,000 meters, LiuGong equipment operates nonstop on the frozen ground. Since August, local workers and their Chinese counterparts have been stationed together, braving the thin air and extreme cold to keep the machines running.

In July, another batch of LiuGong

machinery was delivered for a major urban renewal project in the city of Karakol, supporting road repairs and municipal services.

LiuGong is not alone. Chinese heavy equipment manufacturers like XCMG and Shantui have also started operating in the country this year, delivering mining trucks and establishing local subsidiaries. Chinese manufacturing is not just supplying tools but building lasting partnerships.

Don't Politicize Scientific Cooperation Under Guise of Security



By GONG Qian & HU Dingkun

The U.S. Department of War (DOW) recently ordered 30 U.S. universities to audit their academic, financial and research partnerships with foreign entities, and to take measures including terminating partnerships, to eliminate security risks.

The review focuses on cooperation with entities listed on the DOW's Section 1286 list. The institutions must report their findings and actions to the department by August 31 in order to "maintain eligibility for future federal research funding."

It is evident that scientific cooperation between U.S. universities and China

is the primary target of this move. The DOW released an updated list of 130 foreign entities in July, 88 of which are Chinese universities and research institutions.

While the department did not name China in its press release, it said at the end of the statement that it is working in coordination with the House Select Committee on China to advance the effort.

In fact, the Pentagon's move is not a singular incident, but rather part of a broader series of actions by the U.S. to restrict scientific cooperation with China.

In May, the White House Office of Management and Budget (OMB) released a proposed rule to prohibit using federal grant funds for bilateral and multilateral collaborations with countries of concern and entities.

In July, the U.S. National Science

Foundation (NSF) announced a forthcoming policy that would prohibit the use of NSF funds for collaborations with the so-called restricted entity lists maintained by the DOW and other federal agencies.

In August, the White House Office of Science and Technology Policy unveiled the National Security Science and Technology Strategy (NSSTS), which explicitly states that it will prohibit fundamental research funding to high-risk entities, including companies on the Section 1260H list of Chinese military companies operating in the U.S. It also recommends establishing processes to better track individuals and institutions that are direct and indirect recipients of federal research funding.

This is a coordinated campaign under the banner of "security." Whether it is the DOW, the White House, or the NSF, all of the documents mentioned define scientific cooperation with China-related entities as a "national security threat."

It is an overstretch of the concept of national security and politicization of normal scientific collaboration. Scientific research, particularly basic research, is inherently open and shared in nature — even U.S. export control regulations contain specific exemptions for fundamental research. The blanket restrictions on scientific cooperation with China-related entities have gone far beyond the boundaries of "national security."

The purpose behind these actions is clear. The DOW believes that such security reviews will help maintain U.S. leadership in global innovation. Similarly, the NSSTS treats the restriction of

China- U.S. scientific cooperation as a key means to "remain the world's most scientifically and technologically advanced and innovative country."

There is no doubt that restricting China-U.S. scientific cooperation is detrimental to American technological development and may even accelerate the decline of U.S. scientific leadership.

The U.S. scientific community has a remarkably clear-eyed understanding of this. From May to July, the OMB solicited public comments on the proposal online and was met with overwhelming opposition from scientific organizations and researchers across disciplines.

The Association of American Universities has argued that the ban would hinder international cooperation, reduce research efficiency, make it harder for U.S. institutions to attract global talent, and ultimately undermine the national goal of maintaining U.S. scientific leadership. Steven King, a U.S. physicist, argued that the proposal would restrict international scientific collaboration and isolate American scientists, noting that the U.S. and its allies do not have a monopoly on good ideas.

Science has never been a closed domain. Open exchange and collision of ideas are inherent requirements for scientific progress. China-U.S. scientific cooperation not only advances the technological development of both countries, but also serves all humanity.

The U.S. should work together with China and others to address the scientific challenges facing humankind, rather than labeling research collaboration a "security issue" and using it as an excuse for geopolitical gamesmanship.

Voice of the World

World Sees China More Favorably

Edited by QI Liming

A survey conducted this year covering the U.S., Europe, Africa and other regions shows that the world's view of China continues to be more favorable, with people in most countries regarding Beijing as an important and trustworthy partner. As more people around the world engage with China, they gain a deeper understanding of the country and its achievements.

Observing and learning in China

Michael Mbewe, a journalist at Channel Africa International of South African Broadcasting Corporation who recently took part in a media study tour in China, said, "The global positive perception of China is constantly increasing. This is not only the result of diplomatic and economic cooperation, but also stems from the tangible development achievements and opportunities that people have witnessed firsthand."

Transforming development into improvements in people's livelihoods will earn a more lasting sense of appreciation. "This is one of the most crucial insights I have gained from observing China's development on the ground," he added.

Nikolay A. Samoylov, a prominent Russian historian and sinologist who visited China several times during the past four decades, believes that the growing favorable view of China is primarily due to "China's rapid development, which has made it the most stable, predictable and reliable economic partner in the world, and the international community has a high level of trust in China."

This year, Samoylov witnessed the unmanned technology in China, inspected modern agriculture and the wine industry, and also saw the green transformation of industrial centers. "China not only has high technology but also is an open and secure country. This image has significantly enhanced the global perception towards China," he said.

Christine Holgate, group executive chair of Team Global Express (TGE), an Australian logistics company, who has just returned from a visit to China, describes herself as a "super fan of China." She said China's green transformation benefits the world and provides "a real showcase model of it working" for the globe. TGE once visited two major transportation companies in China to learn about optimizing space and routes through AI, ultimately reducing its air transportation carbon emissions by 32 percent. Holgate said Western markets have much to learn from China. Foreign observers need to visit the country to listen, observe, and learn firsthand.

Improvement and prosperity

The cliff road in the West Region of Cameroon has steep slopes and sharp turns, and is prone to landslides during the rainy season. After observing the complex terrain, Chinese enterprises optimized the route, reduced the curvature, and added advanced drainage facilities, making the road significantly safer. After more than a year of arduous construction, the brand- new road was opened to traffic in July.

Charles Romain Mbele, a renowned Cameroonian philosopher, said in recent years, the roads, bridges and ports constructed by Chinese enterprises in Cameroon have transformed the country's landscape and promoted local development and regional connectivity. "The popularity of China among African people has been continuously increasing, because they truly feel that China brings development and prosperity."

Hussein Askary, the Iraqi- Swedish vice-chairman of the Belt and Road Institute in Sweden, said, "The global public's perception of China has become increasingly positive, and the same is true for the people in Sweden and other European countries."

He said this is because China has always treated its partners with sincerity and kindness, focusing on infrastructure construction, talent cultivation and the enhancement of industrial capabilities, helping enhance their development capabilities. It also provides more options for Global South countries to explore development paths that suit their own national conditions.

Charles Okechukwu Onunaiju, director of the Centre for China Studies in Nigeria, said, "Chinese medical personnel are treating patients in African communities. Chinese peacekeeping forces are stationed in Africa. China is providing humanitarian assistance to Africa. The African people have witnessed this with their own eyes and have benefited from it. When Africa needed help, China was truly present and trust was thus established."

Onunaiju pointed out that in today's world, where chaos and turmoil are intertwined, China has always supported resolving international disputes through dialogue, supported Global South countries having a greater right to speak in international affairs, and has always been consistent in its words and actions. "More and more countries believe that China is a trustworthy partner. The continuous improvement of China's global popularity is not accidental; it is an objective conclusion drawn by more and more people after long-term observation," Onunaiju said.



An aerial view of the Pentagon, headquarters of the U.S. Department of War, in Arlington, Virginia, August 13, 2026. (PHOTO: VCG)

China's Sci-tech-driven Tourism Captures Global Eye

Opinion

By QI Liming & YUAN Zhenshan

This summer, "Chinamaxxing," a buzzword meaning "the ultimate experience of a Chinese lifestyle," went viral worldwide. Within just a few months, related hashtags had been viewed over four billion times. Driven by this trend, a wave of enthusiasm for traveling to China quickly surged overseas.

The surge in foreign tourists visiting China is nothing new, so what makes this wave special? This time, travelers

are no longer content with climbing the Great Wall or seeing pandas. They're touring Xiaomi's super factory to witness smart production lines, gathering on Hainan's Wenchang beaches to watch rocket launches, venturing deep into Guizhou's mountains to explore the Five-hundred-meter Aperture Spherical radio Telescope, and heading straight to the Huaqiangbei electronics market in Shenzhen to shop for "Made in China" tech products. Technology has become a vibrant spark, igniting a new era of traveling to China.

This phenomenon stems from the continuous advancement in China's sci-tech strength. In the "unboxing videos"

by foreign bloggers, DJI drones, AI glasses and Unitree's four-legged robot have become the most eye-catching "specialties" from China. What they take away is not only the products, but also a showcase of the vigorous development of China's sci-tech industry.

The deeper value of the "Chinese sci-tech tour" lies in the power of people-to-people exchanges. Last year, due to the U.S. attempt to ban TikTok, a large number of foreign netizens flocked to Xiaohongshu, a popular Chinese social media platform, and an unexpected online peer-to-peer exchange exposed the long-standing lies of Western media slandering China.

Today, the way the world perceives China is undergoing a transformation. As short videos showing street robot performances, drone delivery of takeout food, and the speeding Fuxing trains sweep the globe, the old stereotypical notions of China "remaining at the low-end manufacturing level" are being shattered frame by frame by these firsthand images.

Making technology tangible, making China approachable. Four billion views are just the beginning. What they put to the test is not only the strength of China's sci-tech achievements, but also our ability to "translate" them for audiences around the world.

HIAF: '3-in-1' Heavy-ion Facility

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This breakthrough has increased HIAF's beam-current accumulation gain tenfold over the previous international high, while reducing beam losses by an order of magnitude.

Breaking the record

To make the heavy-ion beams travel smoothly, the research team needed to build a vacuum tunnel, and they built an ultra-thin-wall ultra-high-vacuum chamber with an internal support frame, the first of its kind internationally.

The chamber has an ultra-thin outer wall, just 0.3 millimeters thick — about the thickness of three sheets of A4 paper stacked together. Inside, a 3D-printed titanium alloy frame, only about four millimeters thick, provides structural support. The design is not only strong and resistant to eddy currents, but also significantly reduces construction costs.

The team also developed a new pulsed power supply that overcame the challenges of extremely rapid current changes and high-precision control during

ing pulsed operation. The power supply achieves an internationally record-high current slew rate of 38,000 amperes per second, while maintaining a tracking error of less than 0.2 amperes.

"It's like a supercar traveling at about 140,000 kilometers per hour on the Beijing-Shanghai expressway, while never straying more than 20 centimeters from its lane throughout the journey," Wang Xiaojun, deputy director of the power supply office of HIAF technology center, said.

In addition, HIAF has achieved full beam transmission through its two-kilometer beamline in just 16 hours, setting a new international record for the speed of beam commissioning at comparable facilities. The beam intensities of HIAF's typical oxygen-ion and bismuth-ion beams have both set new international records, raising the previous international highs threefold and 7.5-fold, respectively.

Many experiments that previously required months or even years to accu-

mulate sufficient data could in the future be completed in days or even hours.

Prospective directions

As the world's first large-scale scientific facility to combine a superconducting linear accelerator, a fast-cycling synchrotron and a cascade storage ring, HIAF's unique three-in-one configuration offers two key advantages.

It can accelerate all types of ions, enabling research across a wide range of scientific disciplines. Moreover, its ultra-high beam intensity means that it can provide richer experimental data and produce more nuclides that were previously difficult to generate, helping researchers discover new physical phenomena.

"With this large scientific facility, Chinese scientists could potentially synthesize new elements," Yang said with optimism.

In addition to exploring the limits of atomic nuclei, once HIAF becomes operational, it will also focus on elucidating nuclear astrophysical processes, advancing nuclear energy development, and pro-

moting multidisciplinary applications.

For example, HIAF can be used for the anti-radiation performance test of spacecraft, promoting the development of nuclear energy and functional materials. It can also play a crucial role in improving people's livelihoods, such as advancing heavy-ion cancer treatment, the development of radiopharmaceuticals, crop breeding and food preservation.

A new-generation, more accessible heavy-ion radiotherapy system developed through the application of advanced HIAF technologies has been deployed at the Huizhou Central People's Hospital.

Notably, the tunnel for the superconducting linear accelerator is nearly 400 meters long and more than 100 meters of accelerator equipment has been installed, with over 200 meters of space reserved for future upgrades. This forward-looking design enables large scientific facilities to adapt seamlessly to the ever-changing research needs of the future, Shen said.

Smart Weeding Robot in Rice Fields

Hi-Tech

By Staff Reporters

A smart farm in Waigang, a town in Shanghai, has introduced a new robot that weeds rice fields. With a black, box-shaped design resembling a robotic vacuum cleaner, the machine uses rotating brushes installed underneath to attack newly sprouted weeds with shallow roots.

The robot has a navigation system and agricultural machinery operators can set weeding areas and travel routes for it to move through the fields with greater precision and efficiency.

Traditional weed-control methods have long faced a dilemma: Manual weeding is labor-intensive and costly, while chemical herbicides affect the soil and water. When they are used long-term, the weeds become herbicide-resistant.

The rice-field "robot vacuum cleaner" offers a greener alternative. Its

brushes churn the water and mud, blocking sunlight and suppressing photosynthesis. This prevents the weeds from taking root. The machine controls weeds physically, leaving no chemical residues.

As rice plants enter the critical tillering stage, the machine, originally designed as a spring rice transplanter, has been transformed into a "weeding expert" for the new growth phase.

"The tillering stage is the process when rice plants produce new shoots and branches. The quantity and quality of tillers directly determine the final rice yield," said Sun Jiayun, head of the Shanghai Waigang Agricultural Machinery Service Cooperative.

To address the challenge of severe weed outbreaks during the mid-to-late tillering stage of rice, the cooperative introduced this multifunctional rice transplanting and weeding equipment. By simply replacing components on the original transplanter and adding a physical weeding device, it can be transformed into an efficient physical weeder for field operations, Sun pointed out.



Editor's Note

In 1934, the architects Liang Sicheng and Lin Huiyin visited the Jinci Temple in Shanxi, north China. Liang is regarded as the pioneer of Chinese architectural history; Lin, his wife and collaborator, was China's first female architect. Their work fundamentally shaped how China understands its architectural heritage. Liang called Jinci an "inexpressibly beautiful and radiant grand garden." He did not call it a temple or a museum. He called it a garden.

Along Jinci's central axis, a stage, a hall, a bridge and the temple unfold in sequence. The Water Mirror Stage, a Ming-Qing theater, used eight buried jars to project sound across the courtyard. The Offering Hall, built in 1168, has no walls and no nails, only mortise and tenon joints. Beyond it, the Flying Bridge over Fish Pond is China's oldest surviving cross-shaped bridge, rebuilt in the Song Dynasty (960-1279) on Northern Wei (386-534) foundations. At the end stands the Saint Mother's Hall, built in 984, home to 43 Song Dynasty clay sculptures. The most famous is the "double-faced" attendant, smiling from one angle, tearful from another. Nearby, the Zhou Cypress has stood for more than 3,000 years.

Liang and Lin's visit was a survey, part of their larger mission to document China's surviving ancient structures. Jinci was not a ruin to be measured but also a living garden. Nearly a century later, Muhammad Waseem Rasheed, a Pakistani doctoral student, and Li Ruiling, a young guide working at Jinci, walked the same path. They came to see how digital archives preserve Jinci's halls, how ecological efforts brought its spring back to life, and how a 3,000-year-old garden continues to grow.

Jinci Temple: Building 3,000-year Memory

The Jinci Temple, China's oldest surviving royal ancestral temple that is a sprawling complex of 98 buildings housing 114 painted sculptures and 122 ancient trees, lies at the foot of Xuanweng Mountain, 25 kilometers southwest of the provincial capital Taiyuan in north China's Shanxi province.

Twenty-nine of those trees are more than a thousand years old. One of them, a cypress planted during the Western Zhou Dynasty (1046 BCE-771 BCE), has stood for nearly 3,000 years. A spring called Nanlao, the "Never Aging Spring," has flowed for more than two millennia, though it stopped temporarily in the 1990s.

The Jinci Temple is often called a museum of ancient Chinese architecture. It is also something rarer: a living landscape where water, wood and stone have coexisted for millennia, and where the work of preservation is a conversation between the past and the present.

On a summer morning, Li Ruiling, a young guide at the Jinci Museum, waited at the entrance to welcome a visitor from Pakistan — Muhammad Waseem Rasheed, a doctoral student at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. Rasheed is doing fieldwork in Shanxi for his research on ecosystem resilience.

He had come to the temple with a question: How has a place with such a profound history survived this long?

Li led Rasheed to the Information Network Department where Han Hongbin, the director, stood in front of a wall of monitors. The screens displayed real-time data from sensors embedded in the Saint Mother's Hall, the oldest and most important building at the temple. Tempera-

ture, humidity, carbon dioxide, sulfur dioxide, particulate matter... every measurable factor that could damage wood, paint or clay is tracked around the clock.

The work began in 2015. That year, the Jinci Temple launched its first digital collection project, starting with the temple's three national treasure buildings: the Saint Mother's Hall, the Flying Bridge over Fish Pond and the Offering Hall. Using 3D laser scanners, the team surveyed every bracket, beam and roof curve. Each scan was linked to the China Geodetic Coordinate System 2000, creating a unified digital framework for the entire 121.4-hectare site.

Today, more than 80 percent of the temple's ancient buildings, murals, sculptures and trees have been digitally archived.

Han showed Rasheed a high-resolution 3D rendering of a Song Dynasty painted statue inside the hall, known as the "most beautiful attendant." The resolution was so fine that Rasheed could see the folds of her robe, the tilt of her head and the faint trace of a weathered smile.

The project was not just about creating images, Han explained. The digital archive preserves the original state of the relics as permanent data. If the statues suffer environmental damage over time, the digital versions will remain intact. "We started this work back in 2015," Han said. "For the three national treasure buildings — the Saint Mother's Hall, the Fish Pond Flying Bridge and the Offering Hall — we carried out the first phase of digital data collection."

In addition to documentation, the Jinci Temple has built a preventive protection system that watches over the physical buildings in real

time. The sensor network in the Saint Mother's Hall covers the entire interior, tracking temperature, humidity, carbon dioxide, sulfur dioxide and particulate matter. If any metric exceeds its threshold, the system issues an alert. The team investigates and intervenes before visible damage occurs.

The museum has pioneered a three-in-one prevention model: monitoring and early warning, risk assessment and routine maintenance. There are daily, regular and specialized inspections for dynamic preservation with minimal intervention. The approach has been recognized by the National Cultural Heritage Administration of China as a model case for high-quality development in heritage conservation. The Jinci Temple is now the only national-level preventive cultural relic protection pilot in Shanxi.

Li then took Rasheed to meet Xie Qiang, the museum's deputy director. Xie oversees one of the Jinci Temple's most delicate projects: the restoration of the painted sculptures in the Saint Mother's Hall created during the Song Dynasty. The team began research-based protection work in 2021. The goal, Xie said, is to establish a systematic conservation methodology that can serve as a model for other ancient sites in Shanxi and beyond.

"We aim to summarize a set of effective protection methods and pathways for ancient painted sculptures," Xie explained. He emphasized two guiding principles: minimal intervention and maximum authenticity. "We preserve the original state of the relics as much as possible."

Environmental monitoring data is central to this work. If humidity changes, the team



A close-up view of one of the eight wooden coiled dragons on the pillars of the Saint Mother's Hall.

closely follows and investigates. If sulfur dioxide levels rise, they intervene. Xie described a shift in preservation thinking: "Our concept of cultural relics protection has moved from rescue protection to preventive protection, and from single-object protection to systematic protection of the surrounding environment."

He gave a practical example. In the Wang Qiong Temple, a hall dedicated to a famous official in the Ming Dynasty (1368-1644), sensors detected that indoor humidity was significantly higher than outdoors, a condition that could damage the painted sculptures and murals inside.

The team traced the problem to groundwater seepage from the surrounding drainage system. They modified the apron system, and the indoor climate returned to balance. "If the data shows significant changes," Xie said, "we must consider whether there is a risk to the safety of the relics. If it does pose a risk, we intervene to mitigate the harm."

Rasheed was quiet as they walked out. "In Pakistan, we also have ancient sites. They are thousands of years old, just like the Jinci Temple. But I have never seen anything like this digital system there," he said.

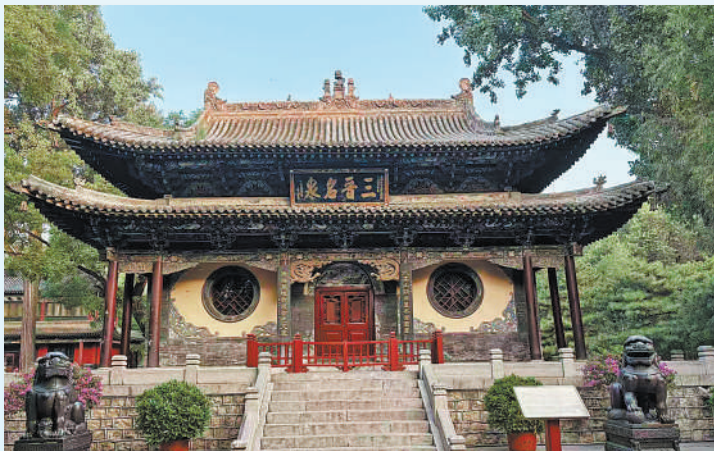
"Different countries have different conditions," Li said. "But they can learn from China's approaches and adopt the experience according to their own environment and goals."



The Jinci Temple, China's oldest surviving royal ancestral temple in Taiyuan, Shanxi province.



Colored clay sculptures inside the Saint Mother's Hall. The 43 Song Dynasty statues are hailed as masterpieces of ancient Chinese sculpture.



The Water Mirror Stage at the Jinci Temple. The stage features a unique design combining tower, hall, pavilion and terrace elements.

Jinci's Eternal Spring: How Water Revived, Trees Preserved



A view of the Shanli Spring Pavilion. The pavilion is part of the temple's historical water-worship architectural complex.

In the *Book of Songs*, China's oldest poetry collection written between the 11th and 6th centuries BCE, there is a line: "May you be forever blessed with never-ending youth." The line was inscribed on a plaque above a spring at the Jinci Temple. The spring is called Nanlao, the "Never Aging Spring."

For more than 2,000 years, its water never stopped and nourished the region. Northern Wei geographer Li Daoyuan (466 or 472-527) recorded that the spring "never dries up in great drought, never freezes in bitter winter, irrigating a hundred hectares of farmland."

Li Ruiling, a young guide at the Jinci Museum, took Muhammad Waseem Rasheed, a Pakistani doctoral student at the Research Center for Eco-Environmental Sciences, Chinese

Academy of Sciences, to the Nanlao Spring. "This spring has been recorded in texts for over 2,000 years," she said. "It is mentioned in the Classic of Mountains and Seas." She pointed to the plaque above the pavilion with Chinese characters "Never Aging."

Rasheed dipped his hand into the water. It was cool. It remains around 17 degrees Celsius year-round.

The spring is fed by a karst aquifer beneath the mountains west of Taiyuan city. Beginning in the 1950s, coal mining expanded rapidly and industrial water extraction grew unchecked. In the peak years, groundwater supplied more than 80 percent of Taiyuan's water. The spring's flow diminished. By 1994, it stopped.

"How do you bring back a dead spring?" Rasheed asked.

Li took him to the Taiyuan Water Resources Management and Protection Center. Over three decades, the authorities took a series of measures. Between 2006 and 2014, a total of 275 coal mines in the Xishan area, a major industrial and mining zone, were consolidated into 53. In 2018, a remediation effort focused on 19 mines in the spring's core protection zone. Four were permanently closed and 15 had their mining boundaries redrawn.

Over the past decade, Taiyuan cut groundwater extraction significantly. Groundwater's share in the city's water supply fell from 83.5 percent to 25.9 percent. In 2019, nearly 100,000 residents across 61 villages were connected to the Yellow River water supply, ending their reliance on well water. More than 200,000 *mu* (1 *mu* equals 0.0667 hectares) of land in the Xishan area has been reforested. Forest coverage

has risen from less than 20 percent to about 86 percent.

Liu Ning, an engineer, showed them the Jinci Temple Spring Catchment Digital Twin Platform, the first of its kind in China for spring protection. "This platform integrates six core modules — spring catchment dashboard, water resource monitoring, water resource management, four forecasting services, smart applications and digital foundation," Liu said. It has four forecasting services — prediction, early warning, pre-simulation and contingency planning.

The underground water system is mapped on screen. Sensors track precipitation, groundwater levels, river flow and mining drainage. "The entire spring catchment has formed a comprehensive water resources monitoring network covering precipitation, river channels, groundwater extraction and coal mining drainage," Liu said.

The turning point came in 2023. On May 14, the Nanlao Spring began to flow again. "At first it was just a trickle," Li said. In 2023, the spring flowed for 133 days. In 2024, it flowed for 273 days. In 2025, there was continuous flow through summer and for an entire annual cycle. As of March 2026, the water level had reached 804.69 meters, standing 2.10 meters above the spring outlet, a record high since the spring's revival.

The return of water did more than fill the spring. It revived the land. The same groundwater that feeds the Nanlao Spring also sustains the ancient trees that have stood at Jinci for centuries, including the Zhou Cypress, one of the "Three Wonders" of the Jinci Temple — a 3,000-year-old tree, still standing. In 2001, carbon-14 dating confirmed its age at more

than 3,000 years.

The museum has implemented a "one-tree, one-ID" management system for each ancient tree. They use non-invasive radar to map the root system. They installed a rejuvenation trench to encourage new root growth. "The tree's roots were growing toward the Saint Mother's Hall," said Liu Xinyi, a technician from the Garden Department. "To protect both the tree and the building, we guided the roots in another direction."

In 2025, the Zhou Cypress was included in the first national list of protected ancient trees at cultural heritage sites.

At the end of the day, Rasheed stood by the spring. "Lucid waters and lush mountains are invaluable assets," he said. "Protecting ecology is protecting development. China's ecological philosophy focuses on harmony between humans and nature. Economic development and environmental protection can go hand in hand."

The Zhou Cypress has stood for more than 3,000 years. The Nanlao Spring has flowed for more than two millennia. The Saint Mother's Hall has watched over both for nearly a thousand years. Time has not stopped here. While history keeps moving, technology empowers those who come after to see them all.



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