



Science and Technology Daily

VOL.4-NO.148

JULY 6-7, 2024

SCO Sees Remarkable Achievements

International Cooperation

By Staff Reporters

The 24th Meeting of the Council of Heads of State of the Shanghai Cooperation Organisation (SCO) took place in Astana, capital of Kazakhstan, on July 3 and 4. Chinese President Xi Jinping attended the meeting and discussed the future of the organization and ways to advance cooperation so as to achieve new and greater progress for this important multilateral mechanism.

Expanding global influence

Since its establishment 23 years ago in Shanghai, the SCO has grown from six founding members to include nine member states, three observers, and 14 dialogue partners. The total population of the member states represents nearly half of the global population, and their combined territory accounts for a quarter of the world's land area. This development highlights the organization's increasing influence on the global stage.

Economic and technological cooperation

Trade among member states has seen substantial growth, with investment cooperation actively promoted. According to the *Report on Trade Development over 20 Years Since the Establishment of SCO* released in 2022, the total trade value of SCO member states increased nearly 100 times over the past 20 years. Their share in global trade value rose from 5.4 percent in 2001 to 17.5 percent in 2020, demonstrating the SCO's growing impact on global trade.

Cooperation between China and Central Asian countries in new energy and technology has also yielded significant results. Projects such as Kazakhstan's 100-MW Zhana-tas wind farm and a wind project in its Akmola region have set new power generation records for wind power in Central Asia. The 220 MWac Samarkand solar PV plant constructed by a Chinese company in Uzbekistan is expected to provide electricity to 264,000 households and reduce approximately 237,000 tons of carbon dioxide emissions annually.

Strengthening regional security

Maintaining regional peace and safeguarding common security is the foundation of the SCO. In recent years, the member states have carried out efficient cooperation in such areas as jointly combating the "three forces" of terrorism, separatism, and extremism, curbing the spread of drugs, protecting data security and safeguarding outer space security. This cooperation has significantly enhanced their capacity to manage regional security risks.

The China-SCO Judicial Exchange and Cooperation Training Center was inaugurated 10 years ago. Over the decade, 65 online and offline training courses have been held, training more than 2,300 participants, mainly from the member states and other Belt and Road Initiative partner countries.



An aerial drone photo taken on June 20, 2023 shows the west artificial island of the Shenzhen-Zhongshan link under construction in south China's Guangdong Province. (PHOTO: XINHUA)

Editor's Pick

Technology Rescues Ailing Cultural Relics

By JIAO Yang, LIU Shu, LI Kun & LIANG Yilian

According to the third national survey of cultural relics, over 760,000 immovable cultural relics were examined and registered. The protection of these relics presents a significant challenge due to their historical span, diverse materials, and complex preservation environments.

Faced with these challenges, what measures are needed to combat the erosion of time at some of these historic sites?

Preserving the Leshan Giant Buddha

Located at the confluence of the Dadu, Qingyi, and Minjiang rivers in Sichuan province, the 1,300-year-old Leshan Giant Buddha stands 71 meters tall.

"Compared with the arid and sandy-prone climate in the north, the biggest problem facing the protection of grottoes in Sichuan and Chongqing is shallow surface degradation, water seepage

and biological diseases caused by high temperature, humidity and rain," Wang Fengrui, director of the Cultural Heritage Preservation Institute of the China Academy of Railway Sciences told *Science and Technology Daily*.

The Buddha's construction originally included a sophisticated drainage system to mitigate rain erosion. However, long-term exposure to the natural environment has led to issues such as structural instability, material deterioration, water seepage, and biological damage.

To address water seepage, the team from the Cultural Heritage Preservation Institute of the China Academy of Railway Sciences developed a fluorescent carbon dot tracer technology, to accurately detect seepage paths and sources through strategically placed tracer drop and sampling points.

Digitally protecting Loulan Ancient City

Among China's 767,000 discovered

cultural relics sites, soil sites account for one-third. Loulan, an ancient city on the Silk Road, is a notable example. To assist in its preservation, the Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences, and the Cultural Heritage Preservation Institute of the China Academy of Railway Sciences have created a digital Loulan integrated information system.

This system provides extensive information on Loulan, including high-precision remote monitoring of environmental changes, real-time meteorological data, 3D landscape displays, a 720-degree panoramic virtual tour, historical administrative evolution, and cultural information. Since 2020, Zhou Peng from the Cultural Heritage Preservation Institute of the China Academy of Railway Sciences and his team have been surveying and repairing ruins in Loulan.

See page 4

UN Adopts China's Resolution on AI Cooperation

By LI Linxu

A China-proposed resolution to enhance international cooperation on AI was unanimously adopted by the UN General Assembly on July 1.

The resolution, titled "Enhancing International Cooperation on Capacity-building of Artificial Intelligence", was spearheaded by China and co-sponsored by more than 140 countries.

As the UN's first-of-its-kind resolution on AI cooperation, it embodies the core principles of the Global AI Governance Initiative and the Global Development Initiative.

In line with the principle of AI for good for all and the vision of a people-centered, inclusive and development-oriented information society, the resolution focuses on international cooperation on AI capacity-building, stresses the importance of increasing the representation and say of developing countries in global AI governance, and advocates a fair, open, and nondiscriminatory business environment.

Stressing the need and the urgency to bridge AI and other digital divides between and within countries, it calls upon the international community to foster an enabling environment for international cooperation on AI capacity-building.

It supports the UN in playing a central and coordinating role, and encourages member states to increase capacity-building cooperation, including policy exchanges, knowledge-sharing activities, transfer of technology on mutually agreed terms, technical assistance, personnel training, skilling of workforce, and international research cooperation.

See page 4

WEEKLY REVIEW

Chang'e-6 Brings 1.9 Kg Samples from Moon's Far Side

China's Chang'e-6 mission has brought back 1.9 kg of samples from the moon's far side, the China National Space Administration announced on June 28. The samples will be processed and researched.

High-energy Photon Source at Joint Test Stage

A high energy photon source (HEPS) built by the Institute of High Energy Physics, Chinese Academy of Sciences, completed the vacuum circuit of its storage ring and entered the joint test stage on July 1. The HEPS storage ring is used to store high energy and high-quality electron beams and generate synchrotron radiation at the same time. It is the third largest light source accelerator in the world and the first largest accelerator in China.

Marine Facility with Wind Power, Fish Farming

China's state-owned CHN Energy Investment Group has put into operation a marine facility integrating wind power generation with fish farming in southeastern Fujian province. The facility's 4-megawatt offshore wind turbine can generate 96,000 kilowatt-hours of electricity per day at full capacity.

Nearly 100% Accurate Breast Cancer Diagnosis with AI

Northeastern University researchers in the U.S. have developed a new AI architecture to detect breast cancer with reportedly a 99.72 percent accuracy rate. The AI system inspects high-resolution images and learns from historical data how to identify cancer patterns and perform diagnoses.

Mind-controlled Prosthesis Makes Walking Easier

Using a new type of surgical intervention and neuroprosthetic interface, MIT researchers have shown that a natural walking gait is achievable using a prosthetic leg fully driven by the body's own nervous system. The surgical amputation procedure reconnects muscles in the residual limb so that patients receive "proprioceptive" feedback about where their prosthetic limb is in space.

Floating Objects Moved with Sound Waves

Researchers at the Ecole Polytechnique Federale de Lausanne, Switzerland, have succeeded in directing floating objects around an aquatic obstacle course using only sound waves. This holds great promise for biomedical applications such as noninvasive targeted drug delivery.

New Graphic

TOTAL NUMBER OF CHINA'S 5G BASE STATIONS (BY THE END OF MAY 2024)

more than **3.8 million**

Global Share **60%**

Source: Ministry of Industry and Information Technology
Designed by YAO Yilu / Science and Technology Daily

WECHAT ACCOUNT



E-PAPER



Chinese Brands Propel High-quality Growth

By Qi Liming

As China's innovation-driven development focuses on generating new quality productive forces for higher scientific and technological innovation, the key is to strengthen the integration of science and technology with the economy. Innovation in science and technology must be strengthened to build a modern industrial system with high self-reliance that will rise to the top of the global value chain.

Brand China's star rises

An enterprise and even a country's brand embodies its core competitiveness. The concept of transforming manufacturing into original creation, speed into quality, and products into

brands was born 10 years ago, determining the direction of China's high-quality development. In the past decade, China's brand building has made significant progress, and a large number of Chinese brands are popular both at home and abroad.

The concept of the "three transformations" is inspiring entrepreneurs to strengthen brand building and cultivate more time-honored brands, enhancing the "Made in China" brand identity.

In the past, Chinese exports were dominated by traditional industry products such as clothing, shoes and hats, but now the export of innovation-driven brands is gaining momentum.

According to reports, in the last decade, the number of Chinese brands

reigning among the top 500 brands in the world increased from 29 to 48, with 10 brands among the top 100. The reputation and influence of brand China are rising, becoming a global icon and setting the trend in many sectors.

Innovation-driven brand promotes high-quality development

High-quality development is the primary task to build a modern socialist country in our respects. Many "made from scratch" products in China are flourishing and promoting high-quality economic and social development.

The manufacturing industry is the foundation of the real economy and plays a pivotal role in high-quality development.

See page 3