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SCO Promotes Regional Innovative Cooperation

International Cooperation

By Staff Reporters

The China-Shanghai Cooperation Organization (SCO) Local Economic and Trade Cooperation Conference, themed "Pursuing Regional Cooperation, Joining Hands for Innovative Development," was held in Qingdao, Shandong province in east China, on July 17 and 18.

The *Qingdao Initiative of the China-SCO Local Economic and Trade Cooperation Conference* was released during the conference. It covers six key cooperation areas: establishing major international logistics channels, building partnerships of industrial chains and supply chains, advancing trade and investment upgrade, promoting exchanges among industrial parks and zones, building shared and open cooperation platforms, and creating new visions for local economic and trade cooperation.

Sessions focusing on new energy and marine Internet of Things (IoT) were held to facilitate matchmaking and connection between innovation chains and industrial chains, accelerating the output of technology and products as well as project implementation.

Energy cooperation has been a priority of the SCO since it was founded 24 years ago, according to Li Junxia, head of the Russia and Asia division of the international department of the National Energy Administration. The SCO member states share a strong complementarity in resources, markets and technologies, which means a large space for cooperation.

China is continuously bringing innovative new energy technologies, offering pragmatic and efficient solutions. At the matchmaking session for international cooperation in new energy, Chinese enterprises and research institutions introduced advanced technologies and solutions like ultra high power offshore wind turbines and compressed air energy storage, drawing the attention of many attendees.

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New Graphic

AS OF JUNE 2025

The number of China's internet users

1.12 billion

IN 2024

The scale of the AI market

700 billion RMB

Source: China Internet Network Information Center
Designed by SONG Ziyao / Science and Technology Daily

WECHAT ACCOUNT



E-PAPER



A Mars-themed planetary science exhibition is held at the China Architecture Science and Technology Museum in Wuhan city, Hubei province, which will last until March 29, 2026. (PHOTO: XINHUA)

STI Frontier

Soft Concrete Safety Net Stops Aircraft Overruns

By Staff Reporters

An airport runway end, utilizing a unique slowing down agent, and being an enhanced version of the Engineered Materials Arresting System (EMAS), can act as a more effective speed bump when aircraft overrun the runway due to emergencies during take off and landing. Researchers from China Building Materials Academy Co., Ltd. (CBMA), Aviation Academy (Beijing) Technology Development Co., Ltd. and China Academy of Civil Aviation Science and Technology have developed a new ultra-light foam concrete EMAS, which can stop a plane gently and stably in a few seconds.

Finding the right material

The International Civil Aviation Organization requires modern large airports to set up Runway End Safety Areas (RESAs) at their runway end to reduce

the risk of damage to an airplane under-shooting or overrunning the runway.

An EMAS can act as a substitute of an RESA, when the full recommended length of a RESA cannot be realized in certain airports due to geological or other reasons, or it may be adopted as an extra buffer where dangerous geographic conditions like cliffs immediately follow the end of a full length RESA.

According to Fang Jun, R&D engineer at CBMA, an ultra-light foam concrete has been developed to be used in the EMAS. With an inner porosity of over 80 percent, it weighs only about 200 kilograms per cubic meter, which is one tenth the weight of ordinary concrete. This ultra-light foam concrete can crack and absorb the kinetic energy generated when a large plane enters the EMAS, enabling the slow landing of the plane.

The slowdown material should

neither be too hard nor too soft. If it is too hard, it cannot be broken and absorb the energy. If it is too soft, the buffering effect will be weakened. According to Fang, the strength of the foam concrete for stopping a Boeing-747 plane should be controlled between 0.3-0.35 MPa.

Sulphoaluminate cement was used as a solution for its speedy hardening. However, EMAS made of material produced by foreign producers is relatively expensive, and the material is easily pulverized during prolonged service, which will greatly lower its strength and weaken its function.

Researchers decided to develop a new generation ultra-light foam concrete. Thanks to CBMA's rich experience in developing inorganic nonmetal materials, the research team quickly mastered the basic theories for producing ultra-light foam concrete, Fang said.

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Observer

Guangxi's Smart Move to Fuel Regional Development

By Staff Reporters

In a livestreaming room, a Chinese host promotes Thai durians and Indonesian coconuts to eager online buyers. At the same time, a dancing Thai host greets the audience, saying "Sawadee ka," — meaning "Greetings" in the Thai language — and introduces the famous snail rice noodles of Guangxi Zhuang autonomous region in southwest China. Such interactions reflect the growing cross-border cooperation made possible by AI technology.

On July 19, the AI Empowerment Super League (AI Super League) kicked off in Nanning, a city in Guangxi. The event brought together tech leaders, entrepreneurs, and policymakers to launch initiatives to attract content creators from all

backgrounds.

Gateway Guangxi's big league vision

As China's gateway to ASEAN, Guangxi is leveraging the AI Super League to build a bridge of AI to real-world industries both locally and across Southeast Asia.

At first glance, the autonomous region might seem an unlikely contender in the AI race. It's a region without the tech-heavy infrastructure of Beijing, Shanghai, or Shenzhen. But that's exactly why its strategy is so smart.

Recently, Guangxi has taken full advantage of national programs like the AI Capacity Building Plan, integrating AI into traditional industries. The government has opened up 16 AI application scenarios and launched a major recruitment

campaign to attract AI companies.

"Guangxi is a gateway to ASEAN," said Qi Xiangdong, vice chairman of the All-China Federation of Industry and Commerce and chairman of cybersecurity firm Qi'anxin. "The AI use cases here are similar to those in ASEAN countries. If a tech company can succeed in Guangxi, it's well-positioned for Southeast Asia."

AI in real life

Guangxi is already seeing results. The locals are garnering cultural and tourism benefits from AI-powered products like the digital Liu Sanjie, an AI cultural ambassador inspired by Guangxi's eponymous legendary folk singer. Farmers and traders are using a large language model to optimize production and logistics.

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Preserving Xixia Imperial Tombs with Tech

By LIN Yuchen

Nestled beneath the Helan Mountains and overlooking the Yellow River and the vast Yinchuan Plain in Ningxia, northwest China, the Xixia Imperial Tombs bore witness to the rise and fall of the Xixia Dynasty (1038-1227). The site, spanning nearly 40 square kilometers, comprises nine imperial tombs, 271 subordinate tombs, 32 flood control relics, and ancient architectural remains — together forming the most significant, highest-ranking, and best-preserved archaeological remains of the Xixia period.

On July 11, the Xixia Imperial Tombs site was inscribed on the UNESCO World Heritage List at the 47th session of the World Heritage Committee held in Paris, France, becoming China's 60th World Heritage site. This milestone comes as China marks the 40th anniversary of joining the World Heritage Convention, consolidating its global leadership in cultural heritage preservation.

Modern technology has played a crucial role in protecting this invaluable heritage. Since the application for World Heritage status for the tombs, extensive scientific research has been undertaken to safeguard the site.

The Ningxia local government initiated a project in 2023 to develop geophysical technologies for exploring and studying large archaeological sites. It used advanced geophysical methods, such as aerial and ground-based magnetic surveys, electromagnetic measurements, and cosmic-ray muon imaging, to conduct non-invasive explorations of the tombs. These techniques have provided new insights into the layout and structure of the tombs.

The tombs face environmental challenges due to their location in an arid region. Primarily built with rammed earth, they suffered erosion and cracking, threatening their stability. To combat this, a range of protective technologies were developed to stabilize the soil and address surface erosion.

These measures have been continuously refined since 2017, leading to the establishment of a comprehensive monitoring and early warning system, which tracks 99 key indicators for the site's preservation.

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WEEKLY REVIEW

New Glass Material Improves Fast Neutron Imaging

Researchers from the Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, and partners have developed a new transparent glass material that has over 70 percent transparency and more than 85 percent luminous efficiency in the visible light range. At the same thickness, its brightness is three times that of traditional commercial scintillating screens, significantly enhancing the clarity of fast neutron imaging.

1st Int'l Standard in Photovoltaic DC Systems Out

Led by China, the International Electrotechnical Commission's international standard for distributed photovoltaic (PV) power generation access to low-voltage direct current (DC) systems and use cases was released recently. It is the first international standard in PV DC, laying the foundation for the development of distributed PV and the construction of new distribution systems.

Repairing DNA Directly in Mice Brain

An international scientific research team used prime editing to successfully correct the gene mutation causing alternating hemiplegia of childhood, an ultra-rare disease, in the brain of mice through a single injection technique for the first time. This technology not only significantly improved the symptoms of experimental mice, but also prolonged their survival.

Record High-Speed OLED Data Transmission Achieved

Researchers from the University of St. Andrews and the University of Cambridge in the UK achieved a data transmission rate of 4.0 gigabits per second (Gbps) at a distance of two meters, and 2.9Gbps at a distance of 10 meters. Both data have refreshed the performance record of OLED communication systems. Previously, the transmission speed of similar systems was at most 2.85Gbps, and could be achieved over only very short distances.