科技日報

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International Cooperation

China, Europe Share Prospects in Green Development

Edited by WANG Xiaoxia

Multiple leaders from Europe have recently been seen visiting China. Commenting on the visits at a regular press conference on April 6, Foreign Ministry Spokesperson Mao Ning said, "As a Chinese saying goes, a good beginning made in spring will ensure success for the whole year. Spring for China-Europe cooperation has arrived. China-Europe exchange in various areas has resumed swiftly and comprehensively."

An increasingly important area of this cooperation is sci-tech innovation (STI), driven by the common need to tackle global challenges related to the areas of green energy, biodiversity, and climate change.

Joint efforts on green transformation

As the EU continues to expand its green transformation, China's supplying capacity based on the complete renewable energy industrial chain will help reduce costs and improve efficiency. China's supply of renewable energy products is of even greater significance when considering how COVID- 19 and other factors have destabilized the global industry chain and supply chain.

From January to June 2022, China's photovoltaic module exports to Europe reached 42.4 gigawatts, up 137 percent year-on-year, accounting for 53.9 percent of China's photovoltaic exports. *See page 3*

196 New Species to Enrich TCM Resources

By Staff Reporters

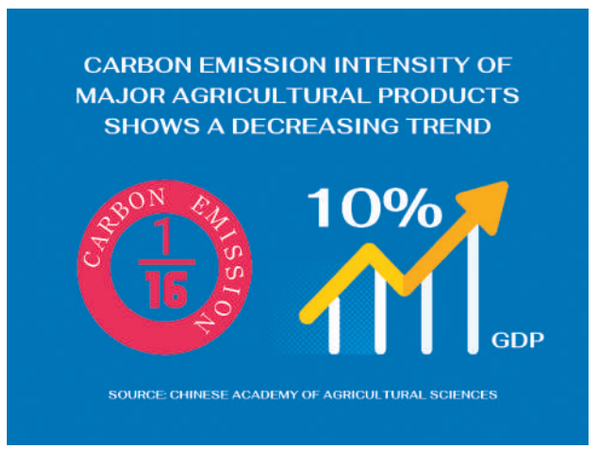
Three new genera and 196 new species have been discovered and published in academic journals, according to China Academy of Chinese Medical Sciences, which collected more than 1.5 million plant specimens in the fourth national survey of Chinese materia medica (CMM) resources.

The three new genera are Zhengyia, Tsaiodendron and Hsenhsua. The 196 new species belong to fungi, ferns, gymnosperms and angiosperms, and are distributed in 57 families and 114 genera.

The national survey project has organized experts in taxonomy and traditional Chinese medicine (TCM) to conduct demonstrations on these new taxa. Experts believe that the discovery of these new species will make an important contribution to the classification of biological resources in China and will enrich the TCM resources.

More than 60 percent of these species have potential medicinal or traditional Chinese medicine effects, according to the research published by the project team.

New Graphic



A report shows that in recent years, China's agriculture sector contributes to around 10 percent of GDP at the cost of only 1/16 carbon emissions.

To provide opportunities for companies worldwide to share the Chinese massive market, the 3rd China International Consumer Products Expo (CICPE) kicks off in Haikou, capital city of south China's Hainan province, on April 10. (PHOTO: S&T Daily/ TANG Zhexiao) ***See page 3 for related report***

Editor's Pick

AI-enabled Construction, a Smart Trend

By LIN Yuchen

China's state - level new area Xiong'an issued a document on March 1 that stipulates the gradual establishment of intelligent construction standards by 2025. It was then reported that hundreds of local industrial suppliers attended a conference under the theme Smart City and Future Community in the city.

Later on March 27, the Beijing Municipal Housing and Urban-Rural Development Commission announced a work plan to build up five leading intelligent construction enterprises, more than two intelligent construction industry bases, and more industrial clusters by the end of 2025, which will serve as foundations for digital transformation among architecture enterprises.

Despite the recent tide of debates in AI- enabled transformation, "China Construction" is making every effort to get on track with AI.

Intelligent boon

A project undertaken by China Construction Fourth Engineering Division Corporation (CCFEDC) is exemplifying domestic AI-empowered construction.

"The whole construction process is monitored through a cloud platform," said Xu Chun, spokesperson for CCFEDC. He explained that the application of a robotic vision module and Edge-AI computing server allows safety inspection robots to alert untypical temperatures and hazardous gases in the engineering environment.

The project is also rendered more effective through AI. It applied Building Information Modeling (BIM) for integrated control of design, procurement, construction, metering and pricing. According to Meng Jianmin, academician at the Chinese Academy of Engineering, the project's AI-enabled generation of three-dimensional design based on BIM realized more precise budgeting, shorter construction periods, as well as improved quality of buildings.

Last September, China's first domestic integrated platform for steel structure industrial plant intelligent construction (also dubbed in Chinese plant building machine), was put into use in Zhoushan city, Zhejiang province. It serves as a large operation platform within a plant that can incorporate multiple types of construction robots. They may combine to provide diversified industrialized solutions to steel structure plant construction.

According to the equipment's chief designer Liao Feng, compared with traditional methods of construction, it can reduce the risk of personnel working at heights, and significantly shorten the construction period; it also improves manual work efficiency by more than 20 percent. *See page 2*

High-temperature Superconducting Maglev System Completes Trials

By Staff Reporters

China's first high- temperature superconducting electric levitation system completed its first trial operation in Changchun, northeast China's Jilin province on March 31.

Adopting the passive suspension approach, the system, developed by CRRC Changchun Railway Vehicles Co., Ltd., doesn't need active control and has a high degree of accountability with a concise operation system. The system is also highly adaptable to operation routes, which allows for faster train speeds. Moreover, the system has robust emergency operating capabilities and is designed with safety as a top priority.

A superconducting electric levitation system consists of vehicle, railway, traction power supply and operation communication with an operating speed of 600 km/h or above, and can be applied in high-speed, ultra-high-speed and low- vacuum pipeline scenarios, according to Yu Qingsong, deputy chief engineer and director of Maglev Research Institute of CRRC Changchun Railway Vehicles Co., Ltd.

Yu said that the levitation system can realize self- levitation, self- steering and self-stabilization through the interaction between the superconducting magnet installed on the train and the levitation coil (in the shape of "8") on the ground, and the technology adopted is regarded as the technological benchmark in rail traffic all over the world.

The superconducting electric levitation traffic system can be an important option for fast transportation between megacities and developed economic circles in the future, and provide crucial support for optimizing land layout, promoting regional coordinated development, and establishing a comprehensive and three - dimensional transportation network.

CRRC Changchun Railway Vehicles has been working on maglev R&D since the 1990s. The company has now mastered maglev system integration techniques of different speed levels and operation scenarios, as well as building a 200-meter test line for total factor high-temperature superconducting electric levitation transportation.

Global Consumer Products Gather at 3rd CICPE

By TANG Zhexiao

The 3rd China International Consumer Products Expo (CICPE) kicked off on April 10 in Haikou, south China's Hainan province. It has attracted 3,300 brands from 65 countries and regions, including 10 RCEP member countries.

As a national- level exhibitions held in China annually, this year's CICPE encompasses an area of 120,000 square meters, increasing 20 percent compared with last year. The number of exhibitors and purchasers also surpassed that of the previous two sessions.

More than 50,000 buyers and professional visitors will attend the Expo, coming from more than ten industries, including large-scale supermarkets, e-commerce and tax-exemption.

A series of promotional events, matchmaking activities, trade fairs and seminars will be held during the Expo, aside from the Global Consumption Forum.

Themed as "Share open opportunities, co-create a better life," the Expo will take full advantage of Hainan Free Trade Port's preferential policies to encourage global enterprises and brands to share the Chinese market, aiming to boost consumption recovery and spur economy.

Italy is the guest country of honor at this Expo, bringing 147 brands, covering important consumption fields such as automobiles, clothing, watches, jewelry, food, alcohol and dairy products.

According to the Ministry of Commerce, this year's Expo is the first large-scale international exhibition held in China after the smooth transition of epidemic response measures, and it is an important part of the "Year of Promoting Consumption."

It will focus on hot topics such as green consumption, healthy consumption, smart consumption and fashion consumption, said Wang Wentao, Chinese Minister of Commerce.

The Expo will also strengthen the ties between exhibitors and buyers, stimulate market vitality, boost consumer confidence, and promote consumption upgrading and potential release, Wang said.

WEEKLY REVIEW

Superionic Hydride Ion Conductor at Ambient Conditions Developed

Chinese scientists have developed the first superionic hydride ion conductor at ambient conditions. Prior to it, hydride negative ion conductors were recorded to achieve ultra-fast conduction at about 300 ℃.

New Type of Electronic Skin Created

Chinese researchers have developed a new type of electronic skin, which allows robots to navigate their surroundings through touch in the dark. It is able to react to changed temperature and pressure and stretch out when necessary.

Oil Giant Discovers High-yield Industrial Gas Stream

China National Petroleum Corporation tested a shale gas well deployed in Sichuan and obtained a stable daily gas production of 738,800 cubic meters. This is the world's first commercially exploitable, high-yield industrial gas stream drilled in an ancient Cambrian shale formation of 540 million years old.

AC332 Helicopter Makes First Full-state Flight

China's AC 332 twin-engine civil helicopter successfully made its first full- state flight here on April 7, according to its developer the Aviation Industry Corporation of China. It was developed to add to the country's current emergency aviation rescue equipment arsenal and is expected to obtain its type certificate in 2025.

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