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Observer

Openness Momentum Remains Strong

By Staff Reporters

The fourth session of the 14th National People's Congress and the fourth session of the 14th National Committee of the Chinese People's Political Consultative Conference (hereinafter referred to as Two Sessions) were held recently.

The Two Sessions highlighted some themes: sci-tech development, openness and cooperation. As the nation outlines its strategic roadmap for scientific and technological advancement, the narrative is about its domestic growth and its role in integrating global talent and fostering international cooperation.

Dr. Md Altab Hossin arrived in China from Bangladesh 15 years ago for higher education. He found an advanced, innovative and globally oriented research ecosystem. Today, he is a foreign expert at the School of Innovation and Entrepreneurship at Chengdu University in southwest China.

In his view, "China is not only attracting global talent but also giving equal and stable access to foreign talents for research funds, enabling us to integrate into the country's scientific fabric and promote the shared progress of science and technology."

Youshaa Danyal, a third-year PhD candidate from Pakistan specializing in wheat genetics and breeding, echoed him, saying China's research environment offers more than just resources. It provides a platform where science translates directly into public benefit.

Working in the China-Pakistan Wheat Molecular Breeding International Joint Lab, a collaborative agricultural research initiative based at the Institute of Crop Sciences, Chinese Academy of Agricultural Sciences, and Quaid-i-Azam University in Islamabad, Pakistan, Danyal says one of the most powerful demonstrations of science translating into public benefit is the integration of high-throughput genomics with large-scale breeding programs.

His research focuses on wheat biofortification to improve grain zinc concentration. It is a critical issue for Pakistan, where wheat is a staple for over 220 million people and micronutrient deficiency remains a serious challenge.

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Farmers work in a wheat field of Yumin village, Tongzhou district in Nantong city, Jiangsu province, March 11. With the arrival of warmer weather, farmers are busy with agricultural production in the farming season. (PHOTO: XINHUA)

STI Frontier

Robots Handle Tough Workplaces With Ease

By LU Zijian & YANG Lun

With no cables visible on its body, an innovative cleaning robot specifically developed for the casting and engine manufacturing industries can withstand harsh industrial conditions like acid and alkali corrosion, high temperatures and humidity.

Developed by Shenyang Feyoo Special Robot Co., the robot is the first of its kind in China. In just three years, the company has already become an important link in the robot industrial chain in Shenyang, northeast China's Liaoning province.

Overcoming technical challenges

Back in 2021, the domestic industrial robot market was extremely competitive, and the profit margin for developing general purpose robots was negligible. To find an edge over others in the industry, the co-founders of Feyoo chose a

different path: robots working in harsh environments.

Domestic high-end robots have long been absent in harsh operational environments, such as flammable and explosive scenarios, vacuum conditions, sterile settings and highly corrosive environments.

If production companies have such needs, they usually buy foreign general purpose robots and then "customize" them manually, according to Chen Guijun, co-founder and deputy general manager of Feyoo. However, this approach is not only costly, but it also makes it difficult to acquire explosion-proof verification certificates, and overcome after-sale issues.

Feyoo therefore decided to design and develop robots to cope with harsh working conditions while benchmarking against major international manufacturers. Technically, this was a huge chal-

lenge, but one that Chen embraced with confidence.

Shenyang is the birthplace of China's robot industry, generating many firsts such as the country's first industrial robot and the first underwater robot. The city's industrial foundation and talent pool played a big part in Feyoo sourcing skilled technical personnel.

Rebuilding hardware and software

With technical talent gathered, Feyoo began tackling the hardware and software challenges.

Taking explosion-proof robots as an example, volume and heat generation are key factors for entering explosion-proof workshops and vacuum chambers. The research team developed a new type driver by replacing traditional modules with new type materials.

This new driver has a very low heat generation volume and very large power density. See page 3

Sci-tech Central to Consumption Upgrades

By LU Zijian & SUN Yu

From immersive experiences to intelligent services, frontier science and technology is deeply integrating into the daily life of Chinese consumers. The integration is now widespread in consumer goods, and driving continuous exploration of new consumption scenarios, ultimately upgrading the consumption industry.

During China's recent Spring Festival holiday, intelligent home appliances became popular shopping choices. A recent survey showed a 121 percent month-to-month surge in robotic vacuum cleaner sales in county-level and rural markets, while built-in microwave-convection-oven combos sales grew by 114 per-

cent. Sales of smart appliances such as dishwashers and tea makers also increased by over 70 percent.

Science and technology are reshaping consumption into an intelligent, green and more personalized experience. For example, technological upgrades have become the main development path for the home appliance industry, according to Cao Dianlong, director of the institute of environment and interior design at CABR Technology Co., Ltd.

The rapid development of AI technologies has not only enhanced users' experience, but also triggered demand for immersive, active and interactive intelligent homeware, Cao noted.

Intelligent home appliance systems that sense, analyze and make decisions

based on user behavior data are already a reality. Huawei has developed a healthy air solution, which monitors air indexes like temperature, humidity and formaldehyde 24/7, by connecting AI technology with air quality monitoring in the entire home.

Should air quality deteriorate, the system automatically activates the fresh air system and air purifier, ensuring the air at home remains comfortable.

According to a report released by the China Household Electrical Appliances Service Association, whole-home smart systems are predicted to become the core platform for household intelligence, with the market size projected to reach 280 billion RMB by 2026.

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International Cooperation

Wind Power Aids Africa's Green Transformation

Edited by WANG Xiaoxia

Africa's industrialization and urbanization development has long been hampered by limited electricity supply. However, China's mature wind power technology now provides a solution for the continent's growing energy demand.

The first phase of the Aysha II Wind Power Project, built by China's Dongfang Electric Corporation, was officially inaugurated in the Somali Regional State in eastern Ethiopia. Guests of honor at the ceremony were Ethiopian Prime Minister Abiy Ahmed, Djiboutian President Ismail Omar Guelleh and Somali President Hassan Sheikh Mohamud.

The project boasts a total designed installed capacity of 120 megawatts (MW), and comprises 48 wind turbines, each with a single unit capacity of 2.5 MW. The first phase of 32 turbines with a capacity of 80 MW is operational and has been connected to the national grid, transforming the region's energy grid.

The wind farm will provide continuous power to the Somali Regional State, the Dire Dawa Industrial Park and the Addis Ababa-Djibouti Railway. This will ensure a steady energy supply to the economic corridor along the railway and stabilize the eastern Ethiopian power grid.

The leaders of the three countries praised the successful cooperation between China and Africa in the fields of clean energy and green development. Abiy stressed that the project's annual generation capacity of 467 GWh provides reliable and scalable power infrastructure needed for a technology-driven economy.

In addition to increasing the proportion of renewable energy, the project also improved local grid stability and the management skills.

Dongfang provided mature and sustainable solutions throughout the project's ongoing operation. This included early-stage planning and engineering design, equipment manufacturing and construction, and grid connection function and subsequent maintenance.

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WEEKLY REVIEW

Chinese Researchers Advance Solar-driven Biosynthesis

A Chinese research team has developed a strategy to rewire energy flow in biohybrids. It enables industrial microorganisms to directly harness solar energy to drive efficient biosynthesis of high-value energy-rich long-chain compounds. Their study was published in *Nature Sustainability*.

Promising New Treatment for Alzheimer's Disease

Clearance of abnormal A β deposits is a promising Alzheimer's disease therapy, but current anti-A β immunotherapies have safety issues. Chinese researchers have developed a new treatment called SPYACs (synthetic peptide-programmed lysosome-targeting chimeras). It shows fewer side effects and has great therapeutic potential. Their study was published in *Cell*.

OpenAI Launches GPT-5.4, Its Most Powerful Model

OpenAI recently released GPT-5.4, calling it "our most capable and efficient frontier model for professional work." The model combines advanced reasoning, coding, and agentic workflows into a single frontier model, which greatly reduces factual errors compared to GPT-5.2. Also, GPT-5.4 introduces native computer-use capabilities, marking a major leap for developers and autonomous agents.

Coastal Sea Levels Higher Than Assumed

A *Nature* study by researchers from the Netherlands reveals global coastal sea levels are significantly underestimated, averaging about 30cm higher than assumed in some areas. Analyzing 385 publications, they attribute this error to overreliance on geoid models instead of actual measurements, leading to widespread misjudgments of flood risks relative to coastal terrain.

New Graphic

IN 2025

China's Total R&D Investment >3.92 trillion RMB

R&D 2.8 % of GDP

Basic Research Funding nearly 280 billion RMB 7.08 % of total R&D investment

Source: National Bureau of Statistics
Designed by SONG Ziyan / Science and Technology Daily

WECHAT ACCOUNT



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