

New Rules for State S&T Awards Released

Policy Express

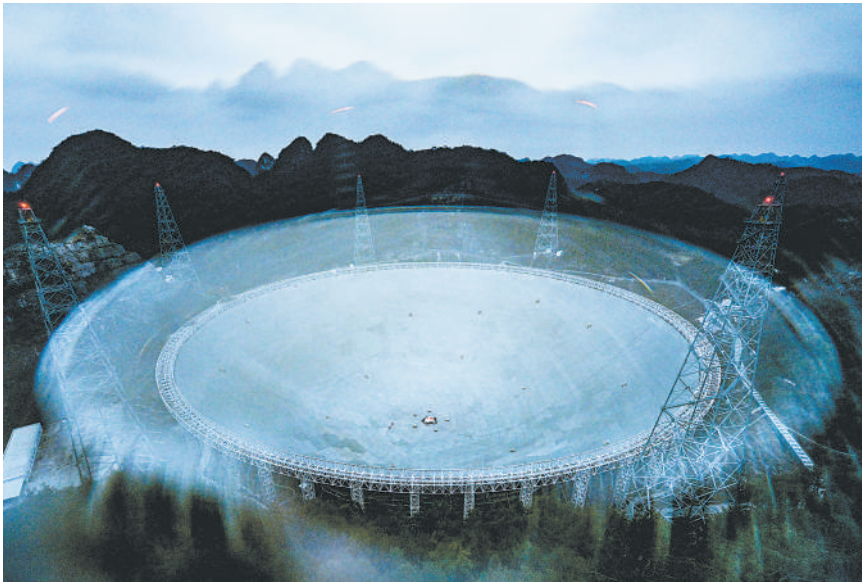
By WANG Manxi & LIU Yin

The two winners of the State Pre-eminent Science and Technology Award will now each be taking home 8 million RMB in prize money, following a recent announcement of revised *Regulations on State Science and Technology Awards* by the Ministry of Science and Technology (MOST).

According to the newly revised policy, the state science and technology awards will be evaluated biennially. The total number of projects receiving the State Natural Science Award, the State Technological Invention Award, and the State Scientific and Technological Progress Award on each occasion will not exceed 300. Among them, no more than three special prizes will be awarded for each category, and the number of first prizes shall not exceed 15 percent of the total awarded projects in each category.

The China International Science and Technology Cooperation Award will be granted to no more than 10 recipients at one time.

Regarding nominations and acceptance, the newly revised rules mention that the State Science and Technology Awards will implement a quota-based nomination system. The qualification



The Five-hundred-meter Aperture Spherical Telescope is the world's largest and most sensitive single aperture radio telescope. (PHOTO: XINHUA)

conditions for nominating units and experts, as well as the quota nomination requirements, shall be stipulated by the MOST in nomination measures. Nominating experts should make nominations within their disciplinary fields of expertise.

The document also strengthens the responsibilities of nominators and specifies circumstances under which candidates may not be nominated. Endangering national security, harming public interests, jeopardizing human health, violating ethical norms, or engaging in academic misconduct — any of these five

categories disqualifies a candidate from being nominated.

A scientific integrity review system is to be implemented for all award submissions. The MOST will establish a database of serious breaches of trust by nominators, review committee members, review experts and candidates. The National Office for Science and Technology Awards will review the integrity of relevant individuals and organizations during nomination and evaluation activities. Individuals and organizations under disciplinary sanctions will be disqualified in accordance with procedures.

The policy also clarifies the scope and evaluation criteria for The China International Science and Technology Cooperation Award. Candidates for this award should be in good standing with China and meet one of the following conditions:

- Make significant scientific and technological achievements through cooperative research or development with Chinese citizens or organizations which have significantly promoted China's economic and social development and achieved notable economic or social benefits.

- Make important contributions to teaching advanced sci-tech to Chinese citizens or organizations, propose important suggestions and strategies for scientific and technological development, or train scientific, technological, or management personnel, thereby advancing China's sci-tech development and achieving notable social or economic benefits.

- Make important contributions to promoting China's sci-tech policies and achievements, facilitating scientific and technological exchanges and cooperation between China and other countries or international organizations, and enhancing China's international influence in the sci-tech field, while significantly promoting China's sci-tech development.



From Lab to Industry, Hefei Accelerates Quantum Leap

Vibrant China

By LIANG Yilian, DU Peng & ZHANG Jing

In Hefei, Anhui province in east China, a smartphone, outfitted with custom software and a quantum SIM card, can now enable secure, unbreakable communication. The China Telecom Quantum Group, headquartered in the city, recently demonstrated this next-generation encryption technology. The group's flagship product, which integrates quantum encryption with real-time communication, has already attracted nearly six million users.

As a national hub for quantum innovation, Hefei is home to nearly one-third of China's quantum technology enterprises. The city is rapidly transforming its scientific edge into industrial momentum, building a robust ecosystem to support the commercialization of frontier technologies.

Lab breakthroughs to factory floors

Hefei's emergence as a quantum hub is no accident. "Hefei hosts top research institutions like the University of Science and Technology of China (USTC), making it one of the global leaders in quantum R&D," said Lu Pin, chairman of the China Telecom Quantum Group. "We chose to base our company here precisely because of the city's innovation capacity."

Yet turning advanced science into market-ready products requires more than research — it demands tight integration between academia, industry, and application. To this end, the Hefei Science and Technology Bureau has established a dedicated task force to coordinate quantum industry development. It hosts regular joint meetings, formulates supportive policies, and facilitates deep collaboration across the innovation chain, according to Lu Bo, deputy director of Hefei Science and Technology Bureau.

According to Lu Bo, to encourage

innovation, Hefei has implemented an initiative for enterprises to publish their specific R&D needs. Research teams compete to "take on the challenge" by the enterprises, with successful projects eligible for up to 10 million RMB in funding. This model helps companies reduce development costs.

In 2021, a team led by USTC professors Pan Jianwei and Xu Feihu achieved a global breakthrough in long-distance single-photon 3D imaging, pushing the range from 10 to over 200 kilometers. Based on this achievement, products — partly backed by the China Telecom Quantum Group — are now in active use. "We participate in research with industrial needs in mind," said Lu Pin. "What once took over a decade to commercialize now takes just three to five years."

Funding the future, enabling applications

While innovation is critical, industry growth also hinges on capital and real-world application scenarios.

"Products are like seeds. For them to grow into industries, they need fertile

soil and careful nurturing," said Lu Bo.

Hefei Unitary Quantum, an ion-trap quantum computing company, needed 30 million RMB in funding but had just two million RMB. Local investment institutions then stepped in with the full amount, enabling the company to deliver a working quantum computing prototype within a year.

As industries mature, application scenarios become vital. In 2023, the 220kV Houdian Quantum Demonstration Substation in Hefei went into operation — the first in China to integrate quantum measurement, communication, and computing, marking a milestone in the industrial application of quantum tech.

Today, there is a cluster of more than 30 leading quantum enterprises along Hefei's Yunfei Road, now nicknamed "Quantum Avenue." Citywide, the quantum industrial chain spans nearly 90 companies, forming a full-cycle ecosystem from basic research and technology development to engineering and commercialization.

To further invigorate the ocean economy, Zhejiang established a dedicated marine industry project attraction and cultivation task force.

Pioneering marine eco-conservation
Zhejiang's innovative "Blue Cycle" initiative tackles marine plastic pollution by recycling waste into consumer goods like scarves and eco-friendly bags. Utilizing blockchain and IoT technologies, the project tracks marine plastic pollution through collection, regeneration, remanufacturing, and resale, having already processed over 19,200 tonnes of ocean waste.

In Shengsi county, part of Zhoushan city, decades of ecological damage from natural and human activities have led to issues like beach erosion, harbor siltation, and island pollution. Local authorities have implemented comprehensive ecological restoration projects employing source control of marine pollutants and coordinated land-sea management.

Key efforts include beach restoration, shoreline reshaping, bay dredging, and pollution containment — revitalizing 13.6 kilometers of coastline and improving nearshore water quality.

CAST Annual Conference: Better Support for Original Innovation

Edited by WANG Xiaoxia

It is increasingly urgent for China to achieve greater self-reliance and strength in science and technology and become a world leader in science and technology.

This was the message from Wan Gang, president of the China Association of Science and Technology (CAST), at the main forum of the association's annual conference.

The 27th annual conference of the CAST, scheduled from July 1 to 31, comprises the main forum, 98 thematic forums and four parallel forums, covering 10 key areas. These are fundamental sciences such as mathematics, physics and chemistry, life and health, earth sciences, ecological environment, manufacturing technology, information technology, advanced materials, resources and energy, agricultural science and technology, and aerospace technology.

To better serve the national strategy, this year's conference has reformed its mechanism and is focusing on the essence of academia.

This year's conference has reformed the mechanism for collecting topics. The CAST organized nearly 70 national academic societies, in conjunction with other units, to recommend nearly 260 topics in the major sci-tech fields involved in the country's 15th Five-Year Plan, and to build consensus

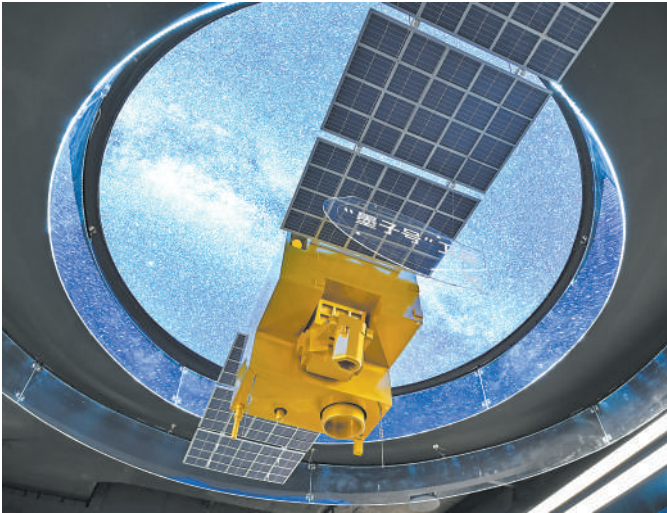
among the science community in a bottom-up manner, according to Yang Shuxuan, deputy director of the Department of Science and Technology Innovation under CAST.

For the first time, the annual conference launched a non-consensus topic collection, encouraging the participants of the 98 thematic forums to raise non-consensus topics related to the transformation of research methods and tools, changes in data interpretation or application directions.

The conference improved the academic review mechanism. This year, experts took the lead in establishing academic committees for various specialized forums and reviewed the activity plans.

In addition, the academic exchange mechanism has also improved, said Wang Su, deputy director of the Society Service Center of CAST. It includes keynote speeches, special topic reports, as well as free exchanges and concentrated discussions. Both on-site wall poster displays and online science popularization and expansion activities will be carried out.

The 2025 Major Scientific, Engineering, and Industrial Technology Challenges document was released at the main forum to establish a benchmark for the sustained generation of original and innovative scientific and technological achievements.



This is a model of the "Mozi" quantum satellite in the technology experience hall of the China Telecom Quantum Group. (PHOTO: XINHUA)

Innovation Gives Traditional Industries New Life

From page 1

Leader in hydrogen valves

Yangquan Valve's latest breakthrough is in hydrogen valves. Its newly developed hydrogen ball valve, designed for ultra-high-pressure pipelines and deep-sea/space applications, has resolved industry pain points like hydrogen embrittlement and leakage. "We cracked the problem with material innovation and smart sealing," said Jin Liming, the company's lead researcher. A collaboration with Lanzhou University of Technology enabled rigorous stress and fire safety tests, ensuring reliability of the valves.

The company has doubled down on R&D, investing 62 million RMB since

2020 to establish a provincial-level tech center, two doctoral workstations, and a seat in the China Hydrogen Energy Industry Alliance.

For Yang, the path ahead is clear: "Innovation isn't optional. It is our lifeline." Supported by national policies that support strategic and emerging industries, Yangquan Valve aims to lead in smart, sustainable manufacturing. "Our mission is to build the world's best gas valves while propelling China's industrial upgrade," she added.

As Yangquan Valve demonstrates, when century-old factories merge tradition with innovation, they transform and thrive.

Chang'e-6 Samples Unlock Secrets of Moon's Farside

From page 1

This highlights the role of major impacts in shaping the Moon's deep interior.

The first analysis of the samples was published by NAOC and its collaborators, detailing the samples' physical, mineralogical, and geochemical properties. The Guangzhou Institute of Geochemistry at CAS subsequently confirmed 2.8-billion-year-old farside volca-

nic activity, linking it to a highly depleted mantle. IGG, in turn, dated the SPA to 4.25 billion years ago, providing a critical reference point for studying early Solar System impacts.

These findings not only illuminate the evolution of the Moon's farside but also underscore the transformative impact of the Chang'e-6 mission, paving the way for deeper insights into planetary formation and evolution.

Zhejiang Charts 'Blue' Path Going Forward

Case Study

By Staff Reporters

Nestled along China's eastern coastline and surrounded by the East China Sea, Zhejiang province boasts an advantageous geography ideal for the development of its marine economy. Its abundant maritime resource makes the area well placed to spearhead China's vision of building a marine powerhouse.

High-tech vital for marine innovation

At a June 26 showcase event in Zhejiang, marine robotics companies unveiled leading-edge innovations. Among the highlights were OceanGPT, China's first open-source large-scale marine AI model. OceanGPT can automatically convert natural language commands into task codes that guide underwater robots, significantly improving operational efficiency for key applications such as

robot control and underwater smart embodied intelligence.

In recent years, Zhejiang has taken the lead by establishing the nation's first provincial-level Marine Economic Development Department to coordinate and integrate resources. With science and technology innovation at its core, the province is focusing on revolutionary technological breakthroughs, deep transformation and upgrading across marine industries.

The province is also intensifying efforts in deep-sea science, exploration, materials, and intelligent equipment. It focuses on enhancing capabilities related to underwater data collection, data transmission, and surface platforms, strengthening both R&D and manufacturing in these critical areas.

Modern marine industry ecosystem

Crossing the Yushan Bridge in Zhoushan city reveals a vibrant green petrochemical base on Yushan Island. This sprawling industrial complex, with its towering steel infrastructure and in-

terconnected pipelines and storage tanks, has evolved beyond upstream production. It now incorporates mid- and downstream petrochemical sectors, boasting an annual refining capacity of 40 million tonnes, 11.8 million tonnes of aromatics, and 4.2 million tonnes of ethylene.

Furthermore, Zhejiang's marine development strategy continues optimizing the marine economy's industrial structure, upgrading traditional sectors, and cultivating emerging industries. Its goal is to establish a world-class marine industrial cluster and forge a modern marine industrial system.

The province is also pushing offshore wind power development as a pillar of its green, low-carbon economy. Last December, the Zhejiang (East China) Deep-sea Offshore Wind Power Home Port project commenced in Dongtou district, Wenzhou city. Scheduled to become a trillion-RMB-scale wind power cluster by 2030, the project acts as a logistics and production hub aggregating the entire offshore wind supply chain.