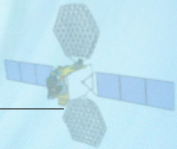
中国科学技术协会
China Association for Science and Technology

No.53
June 2025

# CAST Newsletter

## Special Issue

Main event of 2025 National Science and Technology Workers Day held in Beijing



# Headlines

*Cover Story*

# Origin of National Science and Technology Workers Day


Logo of National Science and Technology Workers Day

On May 30, 2016, the National Science and Technology Innovation Conference, the General Assemblies of the Chinese Academy of Sciences (CAS) and the Chinese Academy of Engineering (CAE), and the 9th National Congress of CAST were convened together in Beijing. During the event, Chinese President Xi Jinping emphasized the importance of prioritizing scientific and technological innovation, a message that greatly inspired China's science community. In recognition of this historically significant occasion, and in response to strong requests from the scientific community, the State Council in November 2016 approved the establishment of National Science and Technology Workers Day, to be observed every year on May 30. CAST and the Ministry of Science and Technology, along with relevant departments, were tasked with organizing the day's events. This marked the first time that China's science and technology workers had their own dedicated festival, reflecting the government's commitment to the fields of science and technology, as well as its consideration for those working in these areas.

(Source: Official WeChat account of VOC)


Poster of 2025 National Science and Technology Workers Day
Photo credit: Official WeChat account of VOC

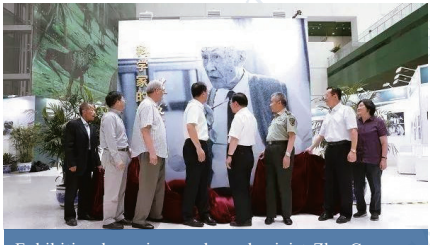
# Highlights from past National Science and Technology Workers Days


First-day cover and commemorative stamps for National Science and Technology Workers Day, May 30, 2017
Photo credit: Official WeChat account of VOC

Launch of "Innovation China" platform, May 30, 2020
Photo credit: people.com.cn


Announcement of 2018 "Most Beautiful Science and Technology Workers"
Photo credit: cctv.com


Video messages from Zhong Nanshan and Zhang Boli for 2021 Science and Technology Workers Day
Photo credit: Official website of CAST



Exhibition honoring nuclear physicist Zhu Guangya opens at China Science and Technology Museum, May 30, 2019
Photo credit: Official WeChat account of VOC

Launch of China Unicom Science and Technology Workers Day and Science and Technology Week, May 23, 2022
Photo credit: Official website of CAST

Student science show held on May 30, 2023
Photo credit: Official website of National Science and Technology Workers Day


Launch of inaugural exhibition at China Scientists Museum, May 30, 2024
Photo credit: Official WeChat account of VOC

## Main event of 2025 National Science and Technology Workers Day held in Beijing


2025 National Science and Technology Workers Day main event

On May 30, 2025, China commemorated the ninth National Science and Technology Workers Day under the theme "Committed to Innovation-Driven Development, Building China into a Powerhouse in Science and Technology." Organized by national societies and local science associations, the celebrations featured a diverse array of activities across the country aimed at honoring the contributions of science professionals and strengthening public support for scientific

development.

The main event took place at the National Communication Center for Science and Technology (NCCST) in Beijing, where CAST President Wan Gang delivered a keynote address. “Science and technology professionals should continue to enrich the spirit of our times,” Wan stated, “carry forward the innovative legacy rooted in traditional Chinese culture and accelerate the path to high-level self-reliance in science and technology. Let the spark of innovation light the way to national rejuvenation.”

The ceremony unfolded around four thematic chapters—“Looking Back: Stars over the Sea,” “Inheritance: Braving Winds and Waves,” “Tribute: Mountains and Rivers Bearing Witness,” and “Future: Chasing Dreams among the Stars.” Each segment drew from the collections of the China Scientists Museum, bringing to life the stories behind historic artifacts and showcasing the values of generations of Chinese scientists: patriotism, innovation, pragmatism, dedication, collaboration, and mentorship.

A donation ceremony was also held, with CAST President Wan Gang and Executive Vice President He Junke presenting official donation certificates to esteemed scientists including Qian Qihu, Wei Jiangchun, Zhang Huanqiao, Ma Yu, and Gao Dengyi, recognizing their contributions to the museum’s growing collection.

This year also marks the first anniversary of the China Scientists Museum, which has welcomed over 170,000 visitors and more than 700 groups and research institutions since its opening. The museum has launched 14 themed exhibitions and traveling displays, helping extend its educational reach nationwide.

In addition, 2025 marks the 15th anniversary of the Archive Project for the Academic Growth of Senior Scientists, an initiative that has so far collected 159,000 physical items, 456,000 digitized documents, 503,000 minutes of video, and 596,000 minutes of audio. The project has pioneered a comprehensive model that integrates archival preservation, research, exhibition, education, and public outreach, bridging historical documentation with lifelong learning.

(Source: Official website of CAST)

*Enduring Spirit*

## Science sparks through time: Celebrating one year of China Scientists Museum

Students visiting China Scientists Museum
Photo credit: Official WeChat account of China Scientists Museum

On May 30, 2025, the China Scientists Museum marked the first anniversary of its official opening. Over the past year, the museum has welcomed more than 170,000 visitors, offering the public a vivid window into the perseverance and accomplishments of China's leading scientists across generations.

The museum features a rich collection of significant artifacts: the "August 1 Medal" awarded to Qian Qihu, winner of the National Highest Science and Technology Award; a hand-drawn Five-star Red Flag by physicist Hong Chaosheng; the ink painting "Tong Fish" by renowned embryologist Tong Dizhou; a rare photograph of nuclear physicist Deng Jiaxian taken in the Gobi desert; and the "Role Model of the Times" certificate awarded to underwater acoustics expert Yang Shi'e. Each item is a testament to the resilience and spirit of scientists who helped shape the nation's scientific landscape.

The collection originates from the Archive Project for the Academic Growth of Senior Scientists, launched in 2010 by CAST in collaboration with 11 national agencies. The project mobilized over 4,000 researchers to recover invaluable materials from senior scientists, including personal letters, instruments, handwritten manuscripts, and other irreplaceable items. Over the past 15 years, the initiative has rescued countless fragments of history. Walking through the museum, visitors encounter the living legacy of China's scientific journey. What resonates is not only the achievements of the past, but also the unwavering ideals and quiet determination of those who paved the way.

(Source: *Science Popularization Times)*

## Carrying torch of innovation: Lectures that celebrate spirit of Chinese scientists

This year's National Science and Technology Workers Day centers on celebrating the spirit of scientists. One standout initiative is CAST's 100 Lectures on the Spirit of Chinese Scientists, a nationwide program that brings inspiring stories of leading scientific figures to universities, research institutes, companies, and innovation parks across the country.

### Changchun New Area

Cai Wei delivering a lecture
Photo credit: cnr.cn

On May 28, the lectures series made a stop in Changchun New Area. This session placed a special focus on the challenges faced by engineers, as well as the spirit of determination that drives innovation in the face of adversity.

Cai Wei, doctoral advisor at Harbin University of Science and Technology, head of the Electric Drive Expert Group for China's 2021-2035 Energy-Saving and New Energy Vehicle Technology Roadmap, and expert of the New Energy Vehicles Group and head of the Electric Drive Expert Group for the 14th Five-Year National Key Research and Development Program, delivered a keynote lecture titled "Building the Heart of China's New Energy Vehicles." He shared insights into his team's breakthroughs in electric drive technologies—including hairpin-type flat wire winding motors and advanced oil cooling systems—as well as China's expanding global footprint in the new energy vehicle sector. Cai inspired the next generation of scientists and engineers with the message, "Only those who dare to dream will dare to act. Only those who act boldly can succeed," encouraging them to pursue their passions and keep pushing boundaries.

### Southeast University

On May 28, Southeast University hosted another session of the lecture series, featuring Ben De, a member of the Chinese Academy of Engineering and senior advisor to the Science and Technology Committee of China Electronics Technology Group Corporation (CETC).


Ben De delivering a lecture
Photo credit: gmw.cn

Drawing on over six decades of experience in science and technology, Ben delivered an inspiring talk on the perseverance required to drive innovation. “Pushing the boundaries of technology means moving forward by overcoming challenges—each problem you solve is a step ahead,” he said. Reflecting on the increasing complexity of the issues he faced over the years, Ben stressed the importance of mastering fundamentals and taking a step-by-step approach. “The so-called ‘fool’s method’—putting in the work and sticking with it—is often the most effective. That’s how we keep moving forward on the path of scientific discovery.”

## Sinopec Yanshan Petrochemical Company


Fang Xiangchen delivering a lecture
Photo credit: news.cn

On April 2, the lecture series was held at Sinopec Yanshan Petrochemical Company. Fang Xiangchen, recipient of the National Engineer Award and Vice President and Secretary-General of the Chemical Industry and Engineering Society of China, delivered the keynote address.

Fang spoke about the high-quality development of the refining and chemical industries, the integration of artificial intelligence, and the importance of nurturing young scientific talent. He shared innovative strategies for driving progress and emphasized that a clear sense of purpose is essential for long-term innovation. Quoting a classic Chinese line, “My robe grows loose, yet I do not regret it—for I am exhausted in pursuit of the one I love,” he encouraged young scientists to embrace the passion and dedication that drive scientific excellence.

(Sources: cnr.cn, gmw.cn, and news.cn)

## Celebrating scientists on stage: Honoring innovation through theater

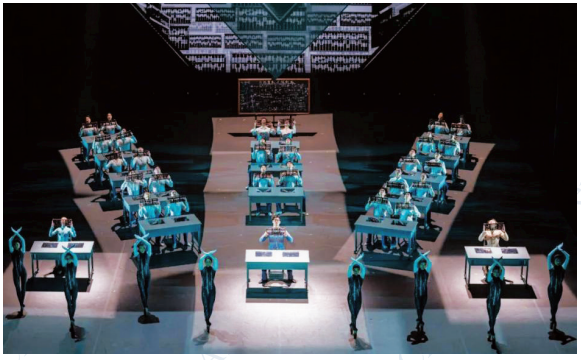
As China prepares to celebrate the ninth National Science and Technology Workers Day, a range of events is unfolding across the country to honor the contributions of its scientific community. Among the highlights is a unique initiative that brings science to the stage.

First launched in 2012 by CAST in partnership with the Ministry of Education, the *Backbone of China: Celebrating the Nation's Great Scientists* project uses theater to pay tribute to scientific pioneers. Drawing on the creative talent of universities, research institutes, and schools nationwide, the project has produced a series of original works that celebrate the spirit of inquiry and service to society.

From May 28 to 29, the 2025 Stage Play Showcase was held in Shaanxi Province as part of the National Science and Technology Workers Day celebrations. Serving as the regional main event, the showcase featured ten original productions, including *The Song of Eternal Devotion*, *Qian Weichang*, and *Yuan Longping*, presented by creative teams from institutions such as Qinghai Normal University, Shanghai University, and the National Academy of Chinese Theatre Arts.

Scene from *The Final Sea Trial*


Scene from *Qian Weichang*



Scene from *Magnificent Clouds*

These performances serve as a powerful way to connect audiences with the personal stories and ideals of China's leading scientific figures, inspiring new generations to embrace innovation and discovery.

(Source: Official WeChat account of CAST)

## *530 Song for Science and Technology Workers* Cultural Showcase held in Beijing

From May 30 to June 1, 2025, the Beijing Association for Science and Technology hosted the "530 Song for Science and Technology Workers" Cultural Showcase at the People's Weekend Grand Stage in Haidian Park. This special series of performances celebrated the integration of art and science, paying tribute to science and technology professionals while promoting the spirit of scientific inquiry and innovation. The showcase featured seven performances, including themed concerts, theatrical productions, and popular science plays.

Original science play staged on Children's Day

On June 1, in celebration of Children's Day, two original popular science plays were staged: *Dr. Science and Qiqi's Mars Adventure: Children's Day Special* and *Science Journey to the West: The Vanishing Magic*. These productions skillfully wove scientific concepts into humorous storylines, creating an entertaining and educational experience that captivated young audiences.

Through diverse artistic formats, the "530 Song for Science and Technology Workers" event highlighted the fusion of scientific knowledge and creative expression. Beyond providing visual and auditory enjoyment, the performances reflected the dedication of China's scientific community. The event fostered a positive social atmosphere that celebrates the contributions of scientists and promotes a culture of innovation.

(Source: Official website of CAST)

*Youth Power*

## China Science and Technology Museum launches special *Beichen Dialogue* on young scientists

To mark the ninth National Science and Technology Workers Day, the China Science and Technology Museum unveiled a special edition of *Beichen Dialogue*, titled "The Innovation Rainforest." Hosted by Guo Zhe, Director of the Museum, the episode features a roundtable discussion with young scientific professionals, delving into the evolving spirit of scientists in the new era. The dialogue encourages young science and technology workers to rise to new challenges and take the lead in shaping a dynamic innovation ecosystem.

Huang Wanning, senior engineer at AIR

Guo Zhe emphasized that as science and technology become increasingly integrated with economic and social development, the responsibilities and influence of science professionals are growing. He highlighted the critical role of young people in driving innovation, noting that their energy and creativity are essential to China's goal of becoming a global

leader in science and technology. Comparing the innovation ecosystem to a rainforest, Guo stressed that it flourishes only when supported by nurturing policies and a healthy environment. He added that technology alone is not the decisive factor. What truly matters is harmonizing with nature, engaging with the wider world, and fostering cross-disciplinary collaboration and creative exchange.

Representing the next generation of scientists and engineers, Huang Wanning, senior engineer at the Aerospace Information Research Institute (AIR) of the Chinese Academy of Sciences, shared insights from his work on the Jimu-1 tethered aerostat. He stressed that scientific research demands a sense of responsibility, the imagination to explore uncharted territory, and the resilience to persevere through failure. Looking ahead, he envisioned aerostats floating over Mars, Titan, or Venus, space tourism becoming widely accessible, planetary mining becoming routine, and revolutionary advances in ground transportation. Huang expressed confidence that persistent scientific exploration will continue to bring profound benefits to society.

Zhang Junjie, CTO of RayNeo

Zhang Junjie, Chief Technology Officer of RayNeo, introduced the company's latest innovation—smart glasses integrating large-model AI and AR technology. He highlighted how the team overcame key technical bottlenecks to achieve breakthroughs and predicted a future where AI-enabled AR glasses will serve as a primary interface for human-machine interaction. Zhang encouraged young scientists to push technical boundaries and actively pursue new frontiers of innovation.

Zhang Hua, founder of ImageStory

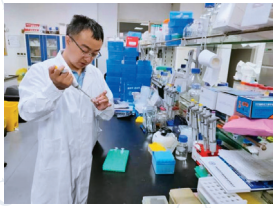
Zhang Hua, founder of ImageStory, shared his entrepreneurial experience and the application of a "cloud-network-intelligence" model in developing AI-powered tools for personalized content creation. He emphasized that both research and entrepreneurship should be driven by curiosity and grounded in social responsibility. Zhang advocated for aligning technological development with mainstream social values, noting that only by directing innovation toward the public good can scientists and entrepreneurs thrive amid rapid change.

(Source: Official WeChat account of VOC)

## Rising tide of innovation: Young scientists making their mark

As technology transforms the world, young Chinese scientists are emerging as key forces behind the country's rapid scientific progress, highlighted during the ninth National Science and Technology Workers Day.

## From carbon to candy: Precision sugar synthesis edges to reality



Yang Jiangang conducting an artificial sugar synthesis experiment

At the Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences (TIBCAS), a team of scientists has achieved a major breakthrough in synthesizing sugars from carbon dioxide. Late one night, research fellow Yang Jiangang was elated to see liquid chromatography data confirming a 30% increase in sugar yield—an encouraging result following months of meticulous testing on a new batch of enzyme cata-

lysts. It marked a significant step forward in artificial sugar production.

Sugars, essential as both a primary energy source for humans and a key feedstock in industrial biomanufacturing, are typically extracted from crops. Building on their 2021 achievement of synthesizing starch from $CO_2$, Yang's team turned its focus to sugar. Over the course of 18 months, they screened more than a thousand enzyme combinations, eventually identifying seven optimal components. These enzymes raised the carbon conversion rate from 10% to a level exceeding that of natural photosynthesis.

Their findings, published in *Chinese Science Bulletin* in August 2023, represent a potential breakthrough in decoupling sugar production from agricultural and seasonal constraints. "One day," Yang said with a smile, "I hope sugar made from thin air will be in our drinks and desserts—just as tasty, but without the blood sugar spike!"

## Breaking boundaries: Building an innovation network bridging medicine and engineering


Hu Peng in discussion with international engineers at the company
Photo credit: Xinhua News Agency

Hu Peng, Director of Shanghai United Imaging Healthcare Co., Ltd., is redefining innovation through a collaborative model. For most of the year, he moves between university laboratories and hospital radiology departments, discussing cutting-edge technologies with professors and working alongside clinicians in real-world medical settings.

"We must break down the barriers between engineering, medicine, and academia to create truly integrated teams," Hu emphasizes. His approach came to life three years ago when a breakthrough in photon detection by Professor Lai Xiaochun's team at ShanghaiTech University caught his attention. The technology, which captures individual photon signals, has the potential to drastically lower CT radiation doses while improving image quality. Hu immediately embedded United Imaging engineers into the

research team, accelerating the transition from lab discovery to clinical application. The technology is now nearing commercialization.

In 2021, United Imaging joined forces with Shanghai Jiao Tong University and Ruijin Hospital to establish the Institute for Medical Imaging Technology. The institute uses a dual-appointment system, allowing engineers to engage in clinical practice and doctors to contribute to equipment development. In April 2025, United Imaging expanded this collaborative model through a new initiative with Zhongshan Hospital and other partners, aiming to promote the use of domestically developed high-end PET/CT systems to enhance diagnostic capabilities at the grassroots level.

This deeply integrated model has significantly boosted innovation efficiency. Looking ahead, Hu hopes to expand this "innovation consortium" globally, creating a more open network for medical technology development.

## The "Translator" bridging nanotechnology and industry


Huang Chunsen conducting surface performance testing on an engineering metal sample
Photo credit: Xinhua News Agency

At the Chongqing Institute of Nano-Metals (CQINM), engineer Huang Chunsen's desk holds two essential notebooks—one filled with experimental data, the other with technical requirements from partner companies. "The hardest part of my job isn't running experiments," says the post-90s engineer with a smile. "It's being a translator." Huang plays a pivotal role in bridging the lab and the factory, turning scientific breakthroughs into scalable, real-world applications.

Despite promising lab results, many innovations never make it to production due to mismatches in materials and equipment. CQINM is tackling this persistent gap by aligning research with industrial needs.

Huang spends about a third of the year on factory floors, translating complex terms like "gradient nanotechnology" into practical benefits such as "improved

wear resistance." He also feeds real-time production data back into the research loop. One such success came in late 2024, when a collaborative project with Southwest Aluminum led to the industrial production of nearly 20,000 kilometers of nano-enhanced aluminum coils.

The institute operates on a "grant-to-investment" model, where government R&D funding is converted into equity in successful ventures—creating a sustainable innovation pipeline. Reviewing the latest test results on next-generation nano-engineered rollers, Huang reflects, "Every time our lab data meets the exact needs of the factory, I know all the 'translation work' was worth it."

(Source: Official WeChat account of VOC)

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