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REVIEW

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China Releases ‘Outline Education Power Construction Plan’

The Central Committee of the Communist Party of China and the State Council on 19 January [unveiled](#) a new educational blueprint called “The Outline Education Power Construction Plan (2024-2035)”, which primarily aims to build a “strong education nation” by 2035. This latest education plan is considered to be China first national action plan which addresses evolving domestic and global challenges, and would help to coordinate its educational development and improve efficiencies in innovation.

The chief objectives of the plan include the establishment of high-quality education by 2027, where cultivation of talent should momentarily improve in streaming outstanding innovative individuals as well as the full establishment of high-education by 2035, where accessibility and quality of basic education will remain among the best in the world. It also underscored the acceleration of the development of advanced research universities, followed by offering encouragement to high-level foreign universities in science and engineering to offer programs in China. It also emphasizes building and strengthening ‘interdisciplinary fields’ and financial support to “endangered and less popular disciplines” and importantly, the cultivation and recruitment of high-caliber faculty.

Meanwhile, Vice-Minister of Education Wu Yan in a press conference [declared](#) that in 2024, 1673 undergraduate programs were added, whereas 1670 programs have been removed which he stated do not align

with economic and social development. The Vice-Minister expressed his belief that the new educational blueprint will further enhance China’s economic development, attract global talent, and expand academic exchange between China and the rest of the world.

CAS Unveils Top-10 Achievement in 2024 and Honors Pioneers in S&T

In collaboration with the Chinese Academy of Engineering (CAE), Vice President of the Chinese Academy of Sciences (CAS) Wu Zhaohui in Nanjing [announced](#) ‘China top-10 achievement in science and technology’ based on selections made by academicians of CAS and CAE. The top-10 achievements of 2024 include the *Chang’e* 6 lunar mission; the world’s first brain-inspired complementary visual chip based on primal language; the first domestically-built ocean drilling vessel – *Mengxiang*; the world’s first petabyte-level ultra-high capacity optical disc storage device; the Einstein probe astronomical satellite *Tianguan*; helium-free ultra-low temperature refrigeration; and the world’s first universal CAR-T therapy to treat rheumatic and autoimmune diseases.

The CAS also [announced](#) the 2024 Outstanding Science and Technology Achievement Prize, where it honored two scientists: Chen Liquan from the Institute of Physics of CAS and Chen Xianhui from the University of Science and Technology of China. During his four decades of research, Chen Liquan made several path-breaking findings on lithium battery and laid the foundation for the continuous advancement of China’s lithium battery industry. Chen

Xianhui, on the other hand, made significant strides in the fields of quantum materials, driving the progress of cutting-edge research in the field.

Scientific Collaboration Projects

On 17 January, China [launched](#) the first remote sensing satellite for Pakistan from the Jiuquan Satellite Launch Center in the Gobi desert. Developed by Pakistan's Space and Upper Atmosphere Research Commission (SUPARCO) in 2022, PRSC-E1 satellite is a remote sensing satellite equipped with a high-resolution optical payload. The remote sensing data acquired by the satellite will serve various fields in Pakistan including mapping, agricultural classification and assessment, urban and rural planning, environmental monitoring, natural disaster monitoring and management.

Robust collaboration in space programme between China and Pakistan have been [initiated](#) in recent years, though space cooperation between the two countries dates back to 1990 when a communications satellite developed by Pakistan was launched into space aboard a Chinese Long March 2E rocket. In 2022, China Great Wall Industry Corporation (CGWIC) signed an agreement with SUPARCO on multi-launch services. Also, in October 2023, China National Space Administration and SUPARCO signed a MoU on the International Lunar Research Station moon based project.

CGWIC is a subsidiary of the China Aerospace and Technology Corporation, which provides commercial launch services and satellite systems, and carries out space

technology cooperation. Since CGWIC entered the international market in the 1990s, it has completed 57 commercial launch missions for 74 international satellites as well as 22 rideshare missions. It has also delivered 29 international payloads into orbit.

Scientific Research Breakthroughs and Discoveries

The world first ultra-long-distance surgery was [performed](#) successfully by Chinese doctors based in Beijing on a liver cancer patient located thousands of kilometers away in Lhasa with the help of a Chinese communications satellite. To conduct the surgery, the APSTAR-6D communication satellite operated by APT Mobile Satcom Limited (APSAT) was the main constituent. The satellite, launched into orbit in July 2020, was developed by the China Academy of Spacecraft Technology (CAST) under the state owned space giant China Aerospace Science and Technology Corporation (CASC).

The surgery was carried out by an interdisciplinary team from the People's Liberation Army General Hospital, APSAT and CAST, overcoming several challenges including communications optimization, QoS classification control and traffic control. After this breakthrough, CASC stated that the surgery "is expected to pave the way for remote surgeries to transition into routine and commercial clinical applications and enable seamless all weather global coverage."

China [achieved](#) another milestone in its space programme when it successfully blasted off its first sea-based rocket,

sending satellite group CentiSpace 01 into orbit. On 13 January, a Smart Dragon-3 (SD-3) rocket was blasted off from the sea near the city of Haiyang of Shandong Province. Deputy Chief Designer of the SD-3 rocket Liu Wei [noted](#) that this was the first-low inclination orbit launch from Haiyang's offshore waters, which only ensures safety but also reduces maritime navigation expenses.

A major groundbreaking experiment in fusion power generation was [achieved](#) by the Institute of Plasma Physics (ASIPP), where the Experiment Advanced Superconducting Tokamak (EAST), dubbed as an 'artificial sun', sustained a steady-state high confinement plasma operation of 1066 seconds, breaking the previous record of 403 seconds which was also set by EAST in 2023.

ASIPP director Song Yuntao stated for the continuous power generation of future fusion plants, achieving stable operation at high efficiency for thousands seconds is essential, and that the experiment represents a crucial step toward the development of a fusion reactor. Song added that this major breakthrough will enhance "international collaboration via EAST and bring fusion energy into practical use for humanity."

An object spotted by astronomers at Purple Mountain Observatory of the Chinese Academy of Sciences on 5 January was [confirmed](#) as a comet by the International Astronomical Union (IAU) and designated as C/2025 A3 (Tsuchinshan). With this discovery, the Chinese astronomical observatory has made its ninth comet discovery.

A researcher from the Hefei Institute of Physical Science (HFIPS) of Chinese Academy of Sciences [developed](#) a new eco-friendly pesticide formulation, which is believed to be safer for crops and the environment while enhancing pest control. In the study, the researcher modified the used of carbon dots and calcium carbonate particles as a carrier for abamectin. According to Wu Zhengyan, professor of HFIPS, compared to traditional pesticides, the development of a colloidal pesticide can be more environmentally friendly. Meanwhile, the China National Wild Plant Germplasm Resource Center has [confirmed](#) that in the year 2024, 65 new plant species were discovered in which 40 were new species. Majority of the discoveries were made in Southwest China in Yunnan province and the Xizang Autonomous Region.

China Science Diplomacy

The 21st China-Denmark Science and Technology Cooperation Joint Committee meeting was [held](#) on 7 January in Beijing. Chinese Minister of Science and technology Yin Hejun and Danish Minister of Higher Education and Science Christina Egelund led each side respectively. During the meeting, both sides agreed to continue promoting implementation of the "Green Joint Work Program of the Government of the People's Republic of China and the Government of the Kingdom of Denmark (2023-2026)." The two sides also agreed on research collaboration in climate change, health, sustainable agriculture and industrial park cooperation.