



MANOHAR PARRIKAR INSTITUTE FOR
DEFENCE STUDIES AND ANALYSES

मनोहर पर्रिकर रक्षा अध्ययन एवं विश्लेषण संस्थान

CHINA

SCIENCE AND TECHNOLOGY REVIEW

June 2024

- **Chinese Institutions Dominate in Nature Index 2024 Research Leaders Ranking**
- **Chang'e-6 brings Sample from Far Side of the Moon to Earth**
- **Scientific Collaboration Projects**
- **Scientific Research Breakthroughs and Discoveries**
- **China Science Diplomacy**

Chinese Institutions Dominate in Nature Index 2024 Research Leaders Ranking

In the [Nature Index 2024 Research Leaders Ranking](#), seven Chinese universities were placed in the top 10 with the Chinese Academy of Sciences ranked first, followed by Harvard University of the United States. The six other Chinese institutions in the top 10 are: University of Chinese Academy of Sciences, University of Science and Technology of China, Peking University, Nanjing University, Zhejiang University and Tsinghua University. The ranking of the institutions is determined based on the authors' research output contributions within 145 high-quality natural and health sciences journals tracked by the Nature Index database.

Chang'e-6 brings Sample from the Far side of the Moon to Earth

[Chang'e-6](#) lunar mission brought back the first ever sample of 1,935.3 grams of soils and rocks from the far side of the moon successfully down to Earth on 25 June. Bian Zhigang, Deputy Head of the China National Space Administration (CNSA), [declared](#) that “the Chang'e-6 mission is a journey of exploration, innovation and international collaboration.” The European Space Agency, France, Italy and Pakistan played a major role during the Chang'e-6 mission, which was launched on 3 May and made landfall in the Apollo Basin, a region in the South Pole-Aitken Basin, on 1 June.

Earlier in 2020, Chang'e-5 returned to Earth with 1.73 kilograms of rocks and dust from Oceanus Procellarum, the largest dark region on the Moon.

Meanwhile, CNSA [announced](#) new deep space exploration missions: the Tianwen-2 mission for asteroid exploration by 2025; the Tianwen-3 mission to collect Martian samples by 2030 and Tianwen-4 to explore the Jovian system by 2030. Besides, Chang'e-7 will conduct surveys on the lunar South Pole region and Chang'e-8 will carry out technology tests on the in-situ utilization of lunar resources.

Scientific Collaboration Projects

China successfully launched an astronomical satellite, the [Space based Multi-band Variable Object Monitor \(SVOM\)](#) on 22 June from Xichang Satellite Launch Center in Southwest China's Sichuan Province. The astronomical satellite was jointly developed by China National Space Administration and the French space agency Centre National d'Etudes Spatiales. Wei Jianyan, the Chinese principal investigator of SVOM underscored that the main objectives of SVOM are to explore various gamma-ray bursts, study dark energy and observe electromagnetic signals associated with gravitational waves.

In the [meeting](#) between the President of the National Natural Science Foundation of China (NSFC), Prof. Dou Xiankang and the CEO of the Gates Foundation, Dr. Mark Suzman held on 19 June in Beijing, both sides agreed to renew their MoU and increase funding for R&D projects in the health sector to achieve the UN Sustainable Development Goals, especially in Africa. Several health projects were launched over the years following the signing of the MoU between the NSFC and the Gates Foundation in 2015, which include structure-based HIV vaccine design, tuberculosis (TB) drugs, TB vaccines and clinical trials of TB treatments.

Co-hosted by the [Chinese Center for Disease Control and Prevention \(China CDC\)](#) and Myanmar's Ministry of Health, the 8th China-Myanmar Workshop on Malaria Elimination and Infectious Disease Control Cooperation was held in Nay Pyi Taw, the capital of Myanmar, on 13 June. In the workshop, both sides exchanged views on enhancing future collaborative efforts including training and technical cooperation for laboratories and vector control, as well as professional cooperation as infectious disease challenges persist in the China-Myanmar border areas.

Scientific Research Breakthroughs and Discoveries

[The Institute of Automation, Chinese Academy of Sciences](#), in collaboration with SynSense AG Corporation in Switzerland developed an energy-efficient sensing computing neuromorphic chip, 'Speck', boosting a very low resting power consumption of just 0.42 milliwatts. Prof. Man Yao, leader of the research team, stated that it is expected to revolutionize the development of cutting-edge scientific fields such as hybrid intelligence and brain-like computing, unlike traditional technologies which primarily use human brains or other biological brains as experimental subjects.

From a sample bought from the moon by Chang'e-5, a research team from Jilin University discovered a naturally occurring layer of graphene, where approximately 1.9 per cent of the total interstellar carbon exists in the form of graphene. Such discoveries will [provide](#) an "important reference and information on the geological evolution of celestial bodies and the in-situ resource utilization on the moon."

China Science Diplomacy

The Chinese Academy of Sciences (CAS) conferred the highest academic accolade in the field of science and technology in China on 19 newly elected members from Australia, France, Russia, the UK and the US at the Foreign Members Induction Ceremony held on 23 June in Beijing. At the ceremony, CAS President, Hou Jianguo [stated](#), "Foreign members are an important link between China and the global academic community and are key ambassadors for promoting global S&T exchange and cooperation." Since the establishment of the Foreign Member system in 1997, the CAS has inducted 191 Foreign Members, including Nobel laureates from 31 countries.

Also, on 19 June a delegation headed by the Deputy Director of China CDC, Wang Liping, held a [bilateral dialogue](#) in Beijing with a visiting delegation led by Prof. Wenbiao and Prof. Kerrie Lee Mengersen from Queensland University of Technology, Australia. The dialogue focused on improving infectious disease surveillance and early warning systems between China and Australia.

To boost scientific research between China and Brazil, on 24 June the National Natural Science Foundation of China (NSFC), led by Vice President Lan Yujie, [held](#) a meeting in Beijing with a visiting delegation from the Sao Paulo Research Foundation of Brazil (FAPESP), headed by Prof. Marcio de Castro Silva, Director of FAPESP. In the meeting, besides renewal of their MoU on joint funding, the two sides agreed to expand existing research cooperation on climate change and agriculture to biodiversity, marine science and artificial intelligence and health and also provide more opportunities for academic exchange among early career researchers.