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CHINA SCIENCE AND TECHNOLOGY REVIEW

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China announces Reform in Digital Education and Funding of S&T

During the fourth anniversary of the "Smart Education of China" platform, the Chinese Ministry of Education announced the implementation of the next phase of China's digital education strategy, with a significant emphasis on integrating Artificial Intelligence (AI) across teaching, learning, and educational management, and reviewing the progress from 2021 to 2025.

For the future phase of digital education, key objectives include the growing importance of digital technologies in expanding educational access, improving public services, and supporting teacher development. The new strategy also called for more systematic integration of AI across various educational domains. In schools, it emphasises personalised learning and equips students with interdisciplinary skills for emerging industries, thereby enhancing graduate employability and supporting continuous skill development.

Meanwhile, to implement the decisions of the CPC (Communist Party of China) Central Committee and the State Council regarding science and technology (S&T) finance, enhance inter-departmental and inter-governmental coordination, and promote the effective implementation of relevant policies, documents were jointly released by the People's Bank of China, the Ministry of Science and Technology, the State Financial Regulatory Commission, and the China Securities Regulatory Commission.

The objective of the released documents called for the thorough implementation of decisions from the Fourth Plenary Session of the 20th CPC Central Committee, the Central Economic Work Conference, and the 15th Five-Year Plan, which emphasise scientific and technological innovation and self-reliance. Also, they underlined the need to build a science and technology finance system adapted to innovation needs, deepen supply-side structural reform of finance, and improve diversified financial services. They called for optimising the science and technology finance ecosystem in international innovation centres and continuously improving the adaptability of financial services to scientific and technological innovation. They underlined the enhancement of professional capabilities in services, enriched financial products for high-tech fields, and leveraged policies such as relending for technological innovation, equity investment pilot programs, M&A loans, and a 'technology board' to direct financial resources precisely. Regarding collaboration, it emphasises strengthening collaboration, expanding information sharing, and accelerating the development of a technology factor market.

Scientific Collaboration Projects

To significantly bolster the 50 years of research between the Max Planck Society (MPG) of Germany and the Chinese Academy of Sciences (CAS), on 13 April, the two societies inaugurated two new Max Planck Centres in Beijing, i.e., the MAC-Air Centre: Climate and Atmospheric Research and the Centre for Synthetic Biochemistry: Medicine and Crop Protection.

The former centre, officially the Max Planck – Asia Centre, is for unravelling the nexus of air pollution, extreme weather, and monsoon in a warming climate, focusing on the intricate interactions between air pollution, extreme weather, and climate. The collaborators of this centre include CAS, the Max Planck Institute for Chemistry, the Indian Institute of Technology Madras, Seoul National University, Tsinghua University, Nanjing University, and the University of Helsinki. The core objective of this centre is to understand atmospheric chemistry's influence on weather and climate, generate predictions, reduce fine particulate matter, enhance climate resilience in cities, and improve extreme weather early warning systems.

The latter centre, known as the Max Planck Society-Chinese Academy of Sciences Centre for Synthetic Biochemistry, aims to harness the potential of natural products from microorganisms for applications in medicine and crop protection. The collaborators of this centre include the Max Planck Institute for Terrestrial Microbiology in Marburg and the Shenzhen Institutes of Advanced Technology of the CAS in Shenzhen. The focus of this centre is to discover new biosynthetic pathways and reprogram them to produce previously unknown bioactive molecules.

In the backdrop of the launch of the two new centres, Liu Chenli, director of Shenzhen Institute of Advanced Technology (SIAT) and co-director of the new centre, called the launch a significant milestone in SIAT's role in global innovation, fostering bilateral collaboration and supporting early-career researchers. He noted that “the new centre will become a vivid example of the very best in Sino-German scientific cooperation – a place where outstanding science thrives, and young researchers flourish.”

Scientific Research Breakthroughs and Discoveries

Chinese scientists from the Northwest Institute of Eco-Environment and Resources (NIEER) of the Chinese Academy of Sciences have developed a large-scale, standardised, AI-driven dataset named ChinaAI-FSC. This dataset is designed to significantly advance snow monitoring research by providing a high-quality, reusable, and AI-ready sample library for nationwide fractional snow cover (FSC).

Unlike in traditional remote sensing methods, FSC struggles with complex nonlinear relationships (spectra, terrain, and vegetation), leading to errors. However, AI methods can automatically learn high-dimensional nonlinear mappings and integrate spatial contextual information for better pattern characterisation. Also, it demonstrates greater adaptability and stability in complex environments and enables cross-regional transfer and reproducible modelling with standardised datasets.

A team led by He Zuhua from the Centre for Excellence in Molecular Plant Sciences at the Chinese Academy of Sciences, in collaboration with Shanghai Jiao Tong University, Zhejiang University, and Shanghai Normal University, achieved a significant breakthrough in global food security by breeding a new rice strain that offers disease resistance without sacrificing yield. The research team identified and cloned a broad-spectrum disease-resistance gene, Xa48. This gene, found in the indica rice variety Shuangkezao, produces a 'recognition protein' effective against bacterial blight strains common in Northeast Asia. This innovation addresses the growing threat of rice bacterial blight, which has resurged due to global warming and limited sources of resistance, traditionally reducing yields by 20-50%.

China Science Diplomacy

On the sidelines of Chinese President Xi Jinping's meeting with Spanish Prime Minister Pedro Sanchez on 14 April in Beijing, the President of the National Natural Science Foundation of China (NSFC), Dou Xiankang, held a meeting with a visiting delegation from the Spanish National Research Council (CSIC) headed by Eloísa Del Pino, President of the CSIC. In the meeting, both sides discussed deepening funding support for visiting scientists and joint collaboration to advance the high-quality development of China-Spain scientific cooperation.

Meanwhile, on 13 April, the University of Chinese Academy of Sciences presented an honorary professorship certificate to Prime Minister Pedro Sánchez. Accepting the honorary professorship, Prime Minister Sanchez stated, "Cooperation does not weaken science. It strengthens. It improves its quality, expands its impact, and creates lasting bonds between science communities." He also appreciated the role of the Chinese Academy of Sciences in achieving several scientific and technological advances that have benefited China's economic development and the world.