MONTHLY REPORT

2026.05 University of Science and Technology of China

第17期



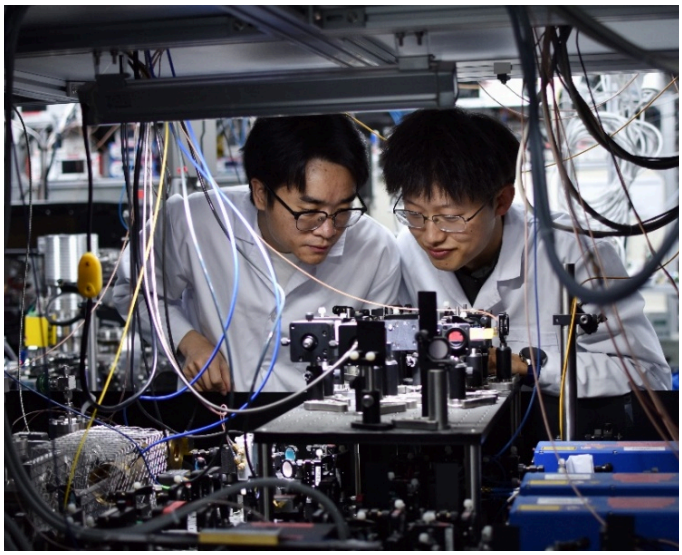
Abstract ◎ Research ◎ News ◎ Alumni

RESEARCH

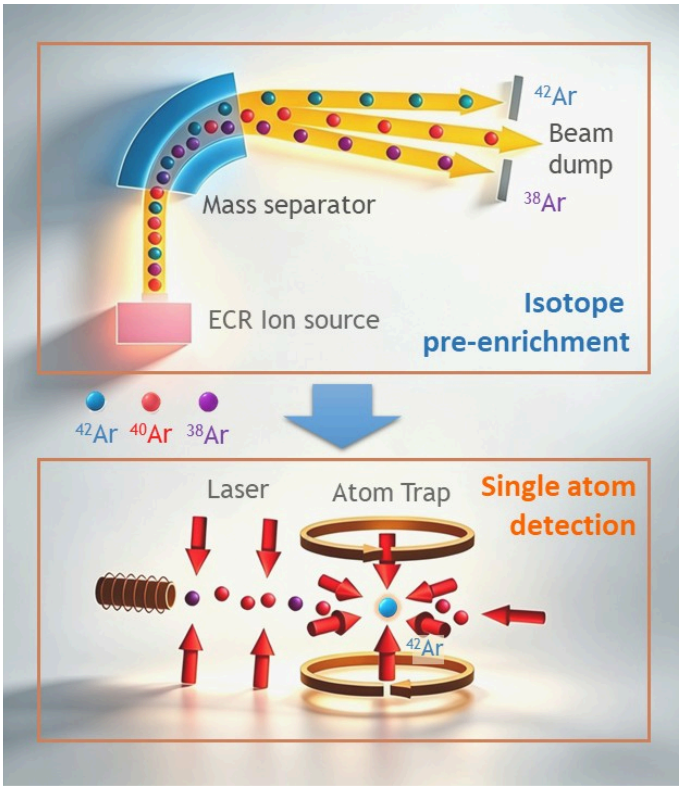
May. 07

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Researchers Achieve First Direct Detection of Ultra-rare Atmospheric Argon-42 at the 10^-21 level



A research team led by Profs. LU Zhengtian and JIANG Wei from the University of Science and Technology of China (USTC) of the Chinese Academy of Sciences (CAS), in collaboration with Prof. SUN Liangting's group from the Institute of Modern Physics of CAS, measured its isotopic abundance at the level of ~10^{-21}—equivalent to one atom among a quintillion—pushing the sensitivity of existing methods forward by four to five orders of magnitude. The work establishes a new frontier in ultra-trace isotope detection and demonstrates the power of single-atom measurement techniques. The results have been published in ***Nature Physics .***



RESEARCH

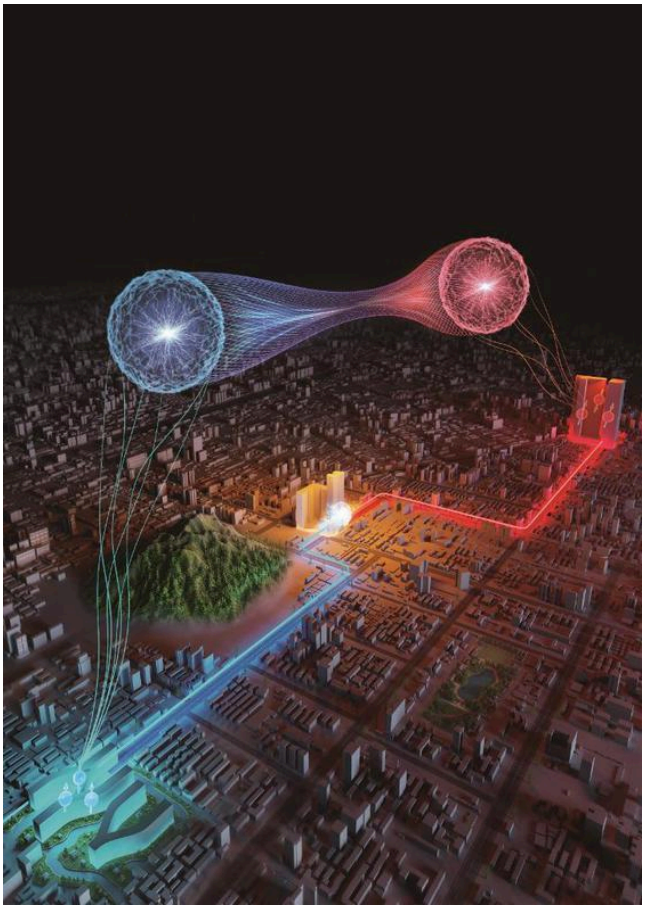
May. 11

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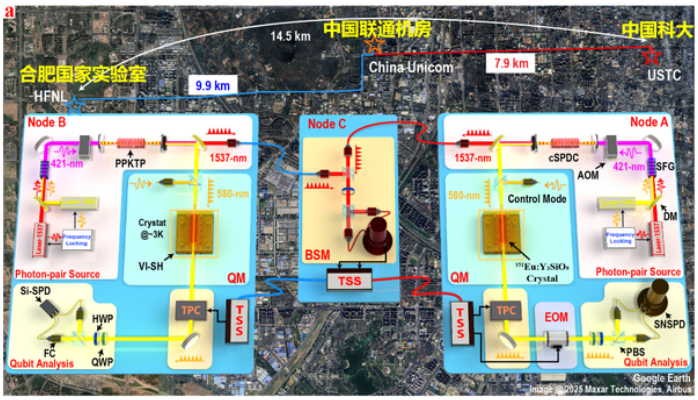
China's new quantum protocol breaks distance and speed barriers in fiber networks

Scientists at the University of Science and Technology of China have successfully deployed a multi-mode quantum relay network, achieving matter-matter entanglement over 14.5 kilometers, according to media reports.

The research team, led by Li Chuanfeng and Zhou Zongquan, developed a time-measurement protocol that allows photons to arrive at intermediate stations at different times. By using multi-mode quantum memory to store and retrieve these photons on demand, the system avoids the need for simultaneous photon arrival.



The system, known as "Xinghan-2", was detailed in the journal ***Nature Photonics*** on May 7. It addresses a key bottleneck in quantum communication by achieving both high transmission rates and high fidelity at the same time.



RESEARCH

May. 14

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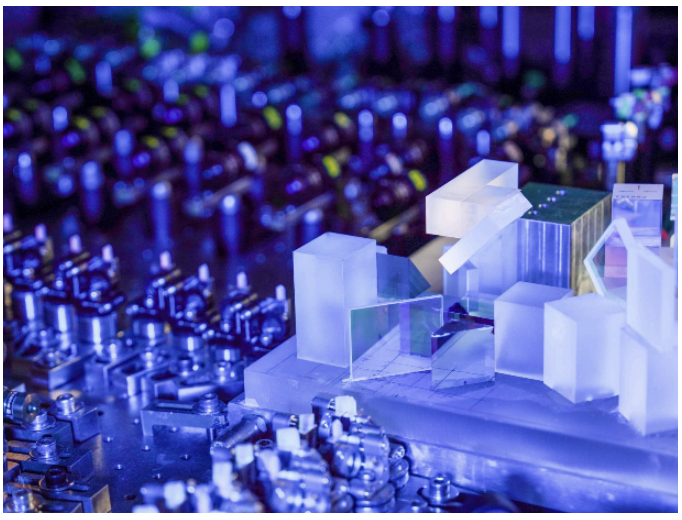
Chinese scientists develop "Jiuzhang 4.0," setting new world record in quantum computing

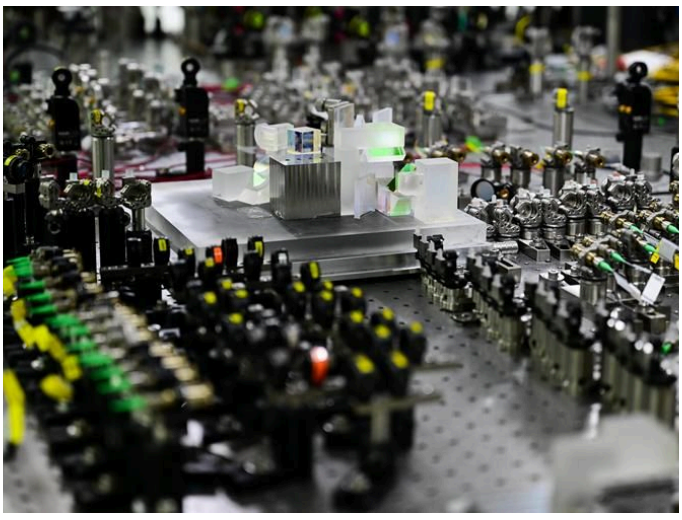
Chinese scientists have developed a programmable quantum computing prototype called "Jiuzhang 4.0" that has set a new world record for optical quantum information technology, according to a study published on Wednesday in the journal ***Nature***.

Led by the University of Science and Technology of China (USTC), the team used the prototype to solve the Gaussian boson sampling problem at a speed more than 10 to the 54th times that of the world's most powerful supercomputer, the study said.

Lu Chaoyang, a professor at the USTC, said the research team developed a high-efficiency optical parametric oscillator light source and a spatiotemporally hybrid-coded interferometer.

Lu noted that the results from "Jiuzhang 4.0" represent a major leap in the scale and complexity of low-loss photonic quantum processors, offering new possibilities for constructing "trillion-qubit-mode three-dimensional cluster states" and future "fault-tolerant optical quantum computing hardware."





RESEARCH

May. 22

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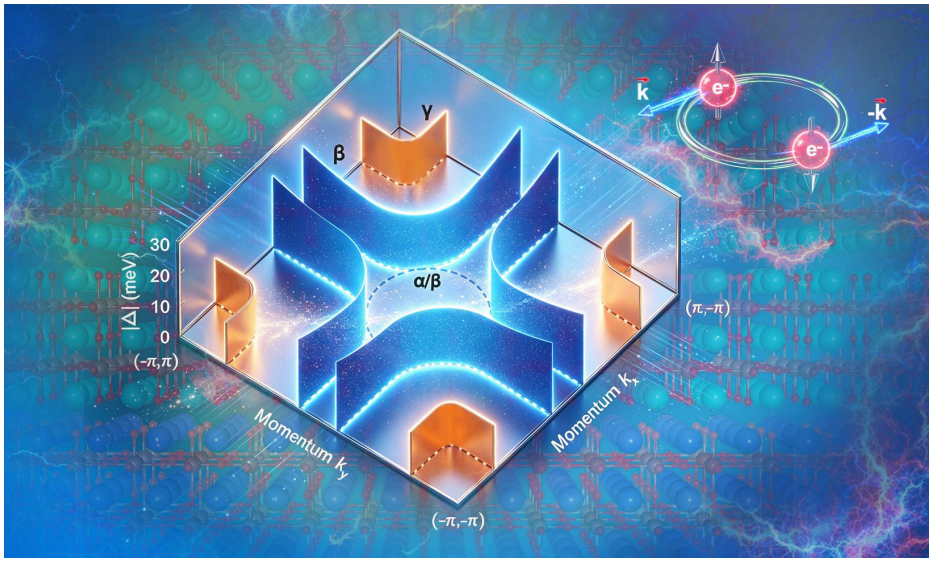
Chinese Scientists Discover Key Evidence for the Mechanism Behind Nickelate High-Temperature Superconductors

The mechanism of high-temperature (T_c) superconductivity is a key challenge in condensed matter physics. Recently, Chinese scientists made significant progress in the study of high-T_c nickelate superconductors.

For the first time, scientists observed a nodeless superconducting gap and discovered electron-boson coupling by measuring the electronic structures of Ruddlesden-Popper bilayer nickelate superconducting thin films. These results provide crucial evidence for two fundamental issues in the mechanism of high-T_c nickelates: "superconducting gap symmetry" and "superconducting pairing mechanism".

This study, conducted by a team led by Prof. HE Junfeng from the University of Science and Technology of China (USTC) of the Chinese Academy of Sciences, in collaboration with a team led by Prof. XUE Qikun and Prof. CHEN Zhuoyu from the Southern University of Science and Technology (SUSTech), was published in ***Science*** on May 21, 2026.

In this collaborative research, the SUSTech team led the efforts of thin film growth, and the USTC team led the measurements of the electronic structures of the thin films.



NEWS

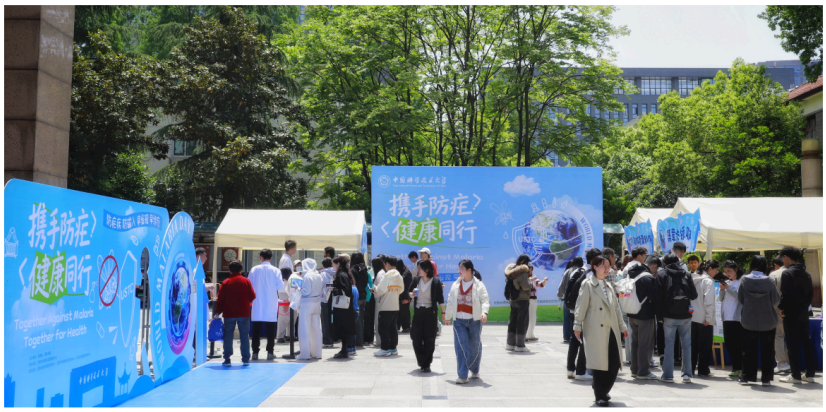
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World Malaria Day Themed Event

April 25 marks World Malaria Day. From April 20 to 26, USTC held a series of themed activities titled "Together Against Malaria, Together for Health," aimed to raise awareness of malaria prevention and promote a healthier campus environment. The activities were jointly organized by the USTC Hospital and the International College, with support from the Fangcao Volunteer Service Team.

At noon on April 24, a World Malaria Day themed event was held on the East Campus. As a highlight of the awareness activities, it featured interactive activities including DIY mosquito-repellent sachet making and malaria knowledge quizzes, attracting more than 300 faculty members and students.







This series of activities not only provided practical knowledge on disease prevention, but also encouraged faculty and students to take a proactive approach to their health and seek timely medical advice when needed, contributing to a safer and healthier campus environment.

NEWS

May. 01

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Fire Safety Training

To further enhance international students' awareness of fire safety and their emergency response capabilities, and to promote a shift from knowledge acquisition to practical competence, the International College, in collaboration with the Security and Campus Management Office, organized a series of fire safety education activities in April 2026. Through a combination of "online self-assessment, thematic lectures, and hands-on drills," the program effectively strengthened campus safety awareness and attracted enthusiastic participation from international students.









NEWS

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Mental Health Seminar



To better support the mental well-being of international students, the International College, in collaboration with the USTC Mental Health Education and Counseling Center, successfully held a mental health seminar on the afternoon of May 21 at Lecture Hall 307 of the International Building. The seminar was delivered by Ms. Li from the USTC Mental Health Education and Counseling Center and hosted by Ms. Peng from the International College.

The seminar provided care, encouragement, and meaningful guidance to students throughout their academic journey in China.



ALUMNI

Dr. Nasir Ullah



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Dr. Nasir Ullah currently serves as a researcher at the Australian Institute for Innovative Materials (AIIM), University of Wollongong, Australia. He holds a Doctor of Engineering in Materials Science and Engineering from the University of Science and Technology of China (USTC), where he completed his doctoral studies between 2018 and 2025, and a second PhD in Physics Science from the University of Wollongong.

Before pursuing his research career, Dr. Ullah served as a secondary school teacher in Pakistan, reflecting his long-standing commitment to education. His current research interests encompass Cold Spray Coatings, wear and corrosion resistance, and radiation-matter interactions, with a specific focus on biomedical applications—particularly the development of nanomaterials that function as ROS (Reactive Oxygen Species) scavengers. Dr. Ullah's interdisciplinary background in materials science and physics underscores his dedication to addressing complex engineering and biomedical challenges through innovative surface treatments and nanomaterial design.

ALUMNI

Shaped by Science and Culture: My PhD Journey in China

My doctoral journey at the University of Science and Technology of China (USTC) began in 2018, marking the start of one of the most transformative periods of my academic and personal life. As an international student pursuing advanced research far from home, I entered USTC with great ambition and curiosity, eager to grow within one of China’s leading scientific institutions.

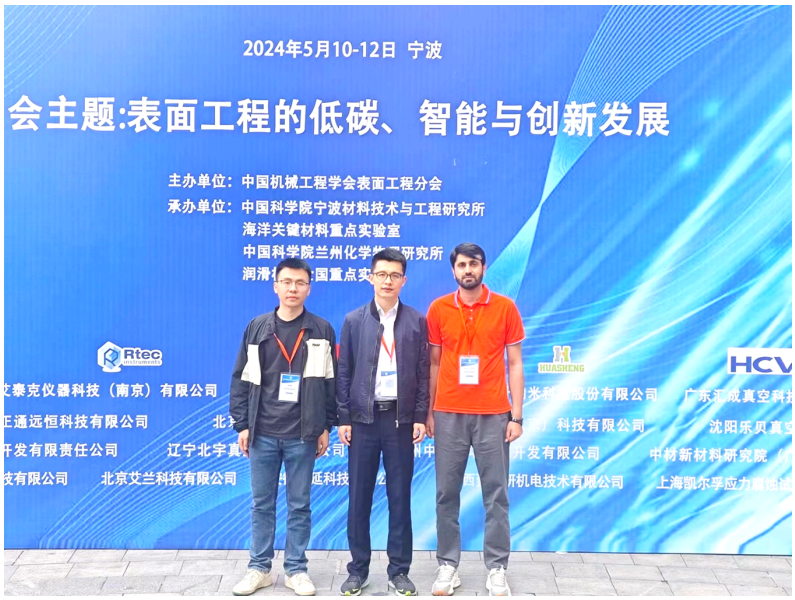




Like many students around the world, my academic trajectory was unexpectedly disrupted by the COVID-19 pandemic. The unprecedented global crisis brought significant challenges to both research progress and daily life. Laboratories closed temporarily, travel restrictions created uncertainty, and long periods of separation from academic environments tested not only my patience but also my resilience. Yet, rather than discouraging me, these difficulties ultimately became a source of motivation and reflection during the second phase of my doctoral studies.

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In 2023, after resuming my research activities, I rejoined my research group at the Institute of Metal Research (IMR) with renewed determination and a clearer sense of purpose. Returning to the laboratory after such a challenging period deepened my appreciation for scientific research and strengthened my commitment to academic excellence. Through perseverance, consistent effort, and the guidance of my supervisors and colleagues, I successfully completed my PhD in November 2025.



Throughout this journey, USTC provided an exceptional academic environment that played a pivotal role in shaping my development as a researcher. The university's state-of-the-art laboratory facilities, rigorous scientific culture, and intellectually stimulating atmosphere significantly enhanced my technical expertise and critical thinking skills. More importantly, the experience trained me to approach scientific problems with discipline, creativity, and persistence.







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Beyond academics, my years in China were also deeply enriching on a personal and cultural level. Living and studying in China allowed me to immerse myself in the country' s rich cultural heritage, diverse traditions, and remarkable culinary culture. During my time there, I had the opportunity to travel across both major metropolitan cities and rural communities, experiences that offered me valuable insights into the social and economic contrasts between urban and rural life. These experiences broadened my worldview and helped me better understand societal dynamics beyond the boundaries of academia.



Looking back, my years at USTC were not only about earning a degree; they were about growth, resilience, and transformation. The challenges I encountered strengthened my character, while the opportunities I received expanded both my academic and personal horizons.

Following my graduation, I joined the University of Wollongong, an opportunity that would not have been possible without the skills, resilience, and academic training I developed during my time at USTC. The university provided me not only with scientific knowledge, but also with the confidence and perseverance necessary to pursue an international academic career.

I remain deeply grateful to USTC for shaping my academic journey, supporting my growth as a researcher, and laying a strong foundation for my future career and aspirations.

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