MONTHLY REPORT

2025.07-09 University of Science and Technology of China

第10期



Abstract ◎ Research ◎ Activity ◎ Alumni

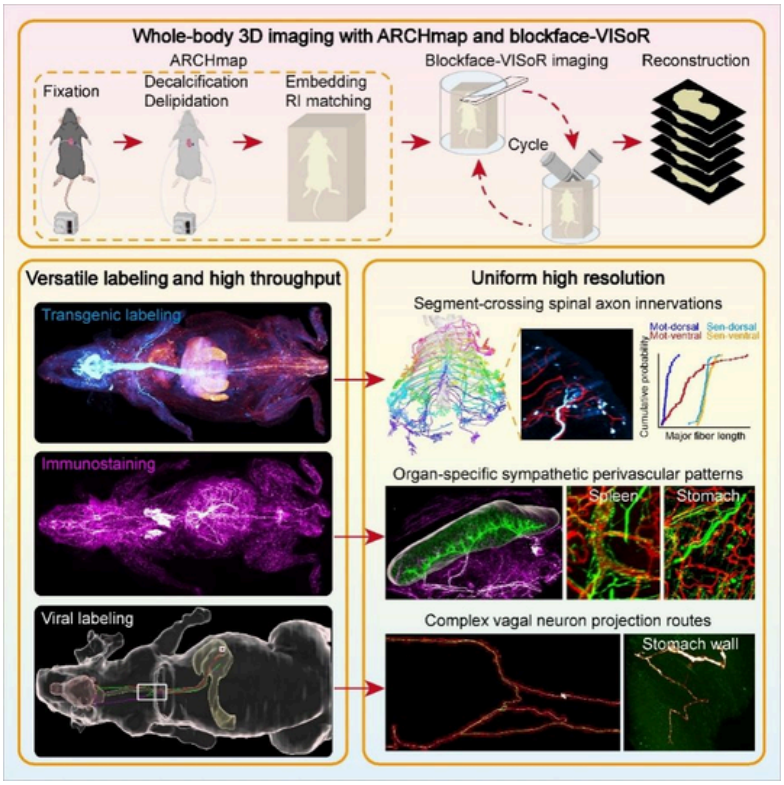
RESEARCH

Jul. 10

READ MORE

USTC Achieves Breakthrough in High-Definition Panoramic Imaging of Entire Mouse Body, Mapping Peripheral Nerves at Subcellular Resolution

A team led by Professors Guo-Qiang Bi and Pak-Ming Lau from the Hefei National Research Center for Physical Sciences at the Microscale and the Division of Life Sciences and Medicine at the University of Science and Technology of China (USTC), in collaboration with the Institute of Artificial Intelligence, Hefei Comprehensive National Science Center (IAI) and Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences (SIAT), has made a major breakthrough in the field of three-dimensional (3D) imaging of large-scale biological tissues.



They developed the world's fastest high-definition 3D imaging technology for the entire body of small animals at subcellular resolution, enabling efficient mapping of the fine architecture of the peripheral nervous system (PNS). The findings were published in *Cell* on July 10th (Beijing Time).

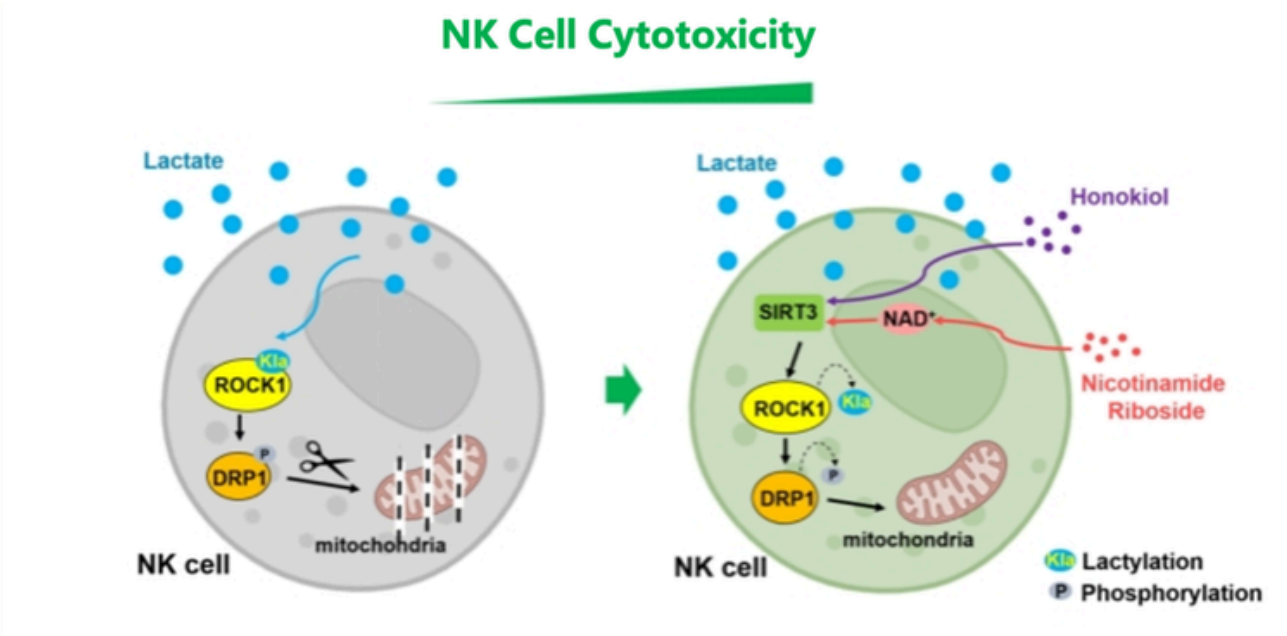
RESEARCH

Aug. 17

READ MORE

USTC Researchers Reveal a Mechanism to Overcome Tumor Microenvironment Suppression

A research team led by Prof. WANG Yi and WEI Haiming from the University of Science and Technology of China (USTC), in collaboration with Prof. DING Chen's team from Human Phenome Institute at Fudan University, has elucidated the role of lactate-induced lysine lactylation (Kla) in modulating Natural Killer (NK) cell anti-tumor responses within the tumor microenvironment (TME). The study was published in *Nature Immunology* on June 10.



This study, by uncovering a new mechanism through which Kla impairs NK cell function, offers a novel theoretical framework for restoring NK cell-mediated anti-tumor immunity in TME. It also provides a promising strategy to enhance the efficacy of NK cell-based immunotherapy.

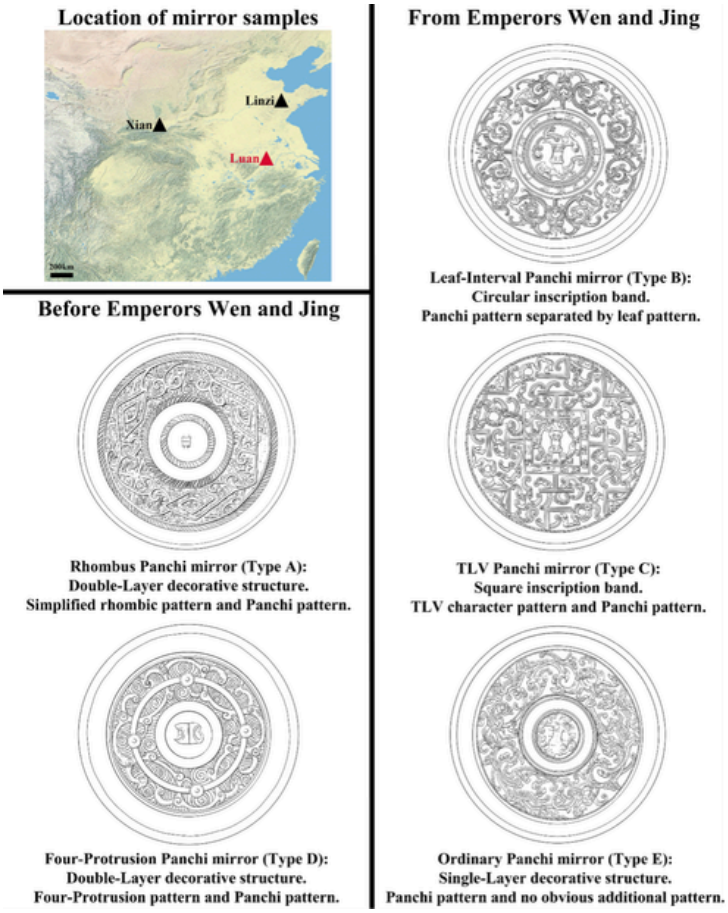
RESEARCH

Aug. 17

READ MORE

USTC Study Links Ancient Bronze Mirrors to Economic Prosperity of Early Han Dynasty

A new study by the University of Science and Technology of China's (USTC) Archaeometallurgy Laboratory reveals a compelling connection between ancient bronze mirror craftsmanship and the economic recovery during the "Reign of Wen and Jing" in the early Western Han Dynasty. Published in the *Journal of Archaeological Science*, the research offers rare insight into the political and economic dynamics of early Imperial China.



The study concludes that these favorable state policies directly stimulated industrial development, laying a strong foundation for the economic and military expansion under Emperor Wu. Ultimately, the research offers rare material evidence of how early Han governance influenced the trajectory of technological and economic progress in ancient China.

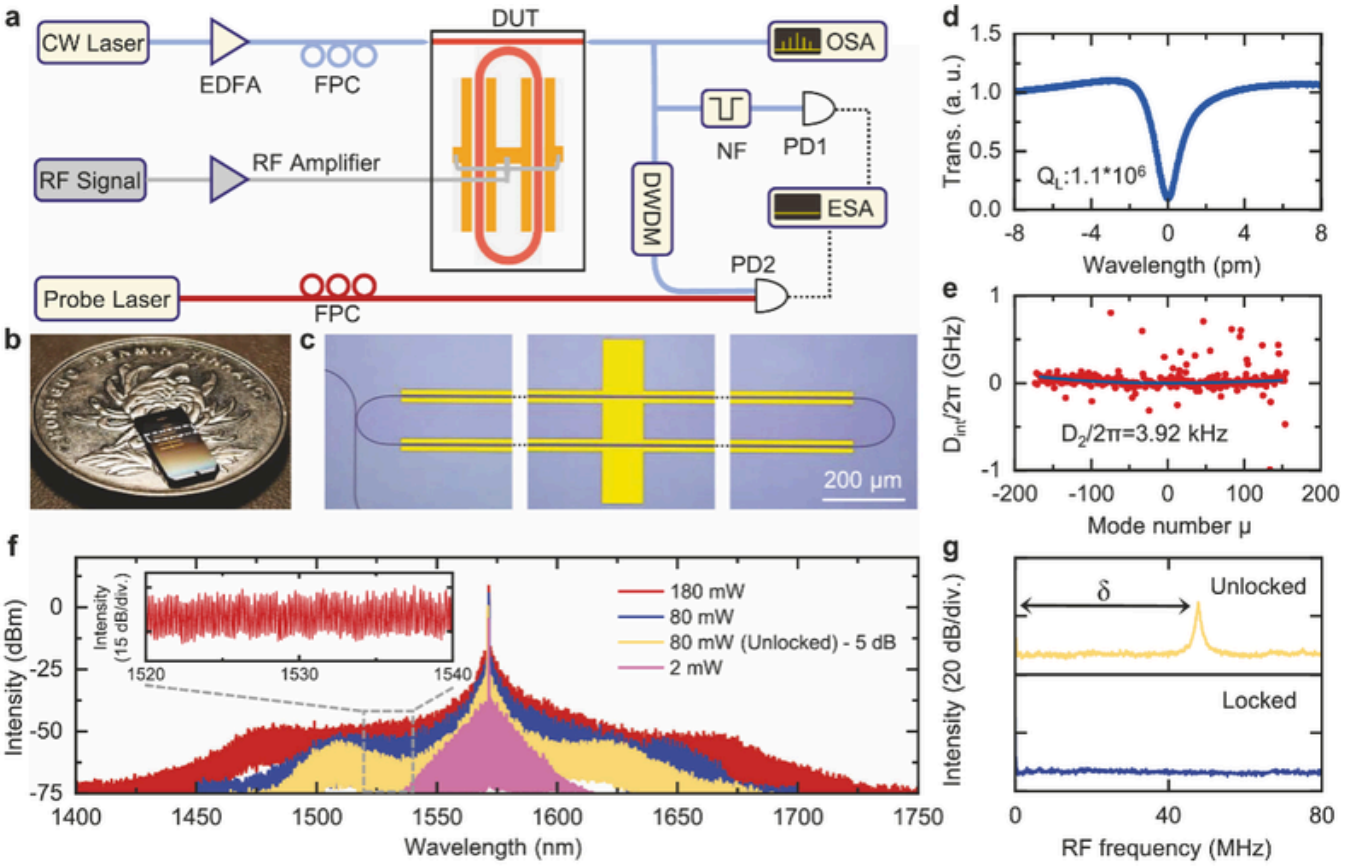
RESEARCH

Aug. 17

READ MORE

USTC Develops Self-Locking Broadband Raman-Electro-Optic Microcomb

A team led by Prof. DONG Chunhua from the University of Science and Technology of China (USTC), in collaboration with Prof. BO Fang's group from Nankai University, has successfully developed a self-locked Raman-electro-optic (REO) microcomb on a single lithium niobate chip. By synergistically harnessing the electro-optic (EO), Kerr, and Raman effects within one microresonator, the team achieved a microcomb with a spectral width exceeding 300 nm and a repetition rate of 26.03 GHz, without the need for external electronic feedback. The research was published in the *Nature Communications*.



ACTIVITY

Jul. 7–12

READ MORE

Explore China's Reform and Opening-up







From July 7–12, international students joined a 6-day experiential learning journey to explore China’s Reform and Opening-Up. Organized by the USTC International College, the program combined lectures, cultural immersion, and site visits across three key locations:

Hefei – Started with a lecture by Prof. Li and a documentary on how China’s reform began.

Xiaogang Village – Walked in the footsteps of rural reform pioneers and witnessed how red fingerprints changed a nation.

Shenzhen – Explored the story of China’s fastest-growing city through museums, urban innovation, and a visit to BYD Headquarters—complete with a test drive!

From past to present, from countryside to megacity, students deepened their understanding of China's transformation and future potential.

ACTIVITY

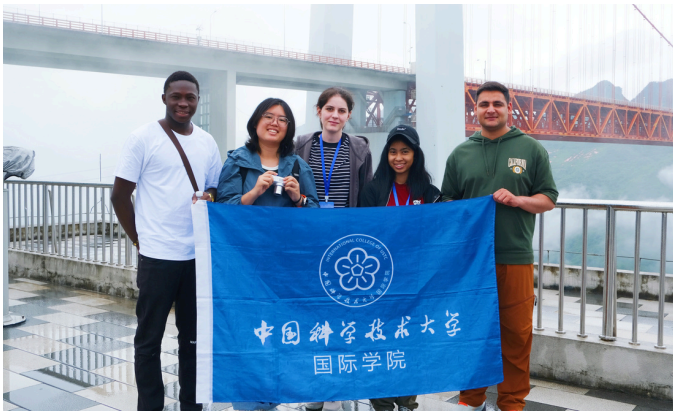
Jul.22-27

2025 Zhi&Xing Guizhou

From July 22 to July 27, five international students from USTC participated in the 2025 Zhi&Xing Guizhou · Cool City Liupanshui Silk Road Youth Exchange Programme. It was an unforgettable journey, full of cultural immersion, personal growth, and international friendship.













ACTIVITY

Sept.10 READ MORE

Nature Masterclass Lecture





On September 10, 2025, the International College hosted Dr. Jeffrey Robens, Head of Community Engagement at Nature Portfolio and Lead Instructor of Nature Masterclasses, for an expert lecture titled "Strategies for Successful Submission." The event was co-organized by the International College and the Foreign Students Association.

This event marked an important initiative by the International College to enhance academic support services and strengthen the training of research talents. It not only broadened students' academic perspectives but also provided practical support for their future research publications and career development.





ACTIVITY

Sept. 3–4 READ MORE

2025 Freshmen Registration

In golden September, the University of Science and Technology of China (USTC) proudly welcomed its vibrant Class of 2025 international freshmen.

From September 3 to 4, international freshmen completed registration procedures, including enrollment verification, document checks, and accommodation registration etc., successfully taking their first step in the USTC journey with the guidance of staff and volunteers.









ACTIVITY

Sept.10

READ MORE









Discovering USTC

On the afternoon of September 10, the FSA Life Department organized a campus tour. Led by volunteers, freshmen visited key facilities across East, West, and Middle Campuses, and explored the USTC History Museum. Through exhibits and historical displays, they gained insights into the university’ s academic heritage and development. The event not only familiarized students with the campus but also fostered a sense of belonging, marking the official start of their new chapter at USTC.

Campus Tour!

ACTIVITY

Sept. 11–12 READ MORE

2025 Orientation Lectures

From September 11 to 12, the International College held orientation lectures at the Lecture Hall of the Material Science Research Building on East Campus. Covering relevant laws and regulations, academic requirements, campus resources, daily life, health and safety, the sessions offered international freshmen essential knowledge and practical guidance for adapting smoothly to their study and life at USTC.



ACTIVITY

Sept.12

READ MORE

Welcome Ceremony 2025

On the morning of September 12, USTC held its 2025 Opening Ceremony. The event was filled with a vibrant atmosphere as university leaders encouraged students to explore knowledge with an open mind and pursue excellence with creativity. Alumni representatives shared personal growth stories, inspiring the new cohort to embrace challenges with confidence. Gathering together, Chinese and international freshmen alike felt the inclusiveness and vitality of USTC, strengthening their determination to chase academic dreams and personal growth.









Adventure is here

ACTIVITY

Sept.13

READ MORE

On September 13, the FSA Culture Department organized a city tour to help international freshmen explore the cultural richness of Hefei. Students visited the Anhui Art Museum and the landmark Swan Lake. Beyond sightseeing, the tour allowed students to experience local culture, interact with peers, and further integrate into life in Hefei with openness and confidence.

Hello Hefei 你好 合肥

Exploring Hefei Together









ALUMNI

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Computer Application Technology

PAKISTAN



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Muhammad Umar Farooq Qaisar (IEEE Member) received his B.S. degree from the International Islamic University, Islamabad, Pakistan, in 2012, and his M.S. degree in Computer Science and Technology from the University of Science and Technology of China in 2017. He earned his Ph.D. in Computer Science and Technology from the University of Science and Technology of China in 2022. He was a postdoctoral fellow at the School of System Design and Intelligent Manufacturing, Southern University of Science and Technology, from 2022 to 2024. He then served as an Associate Professor in the School of Computer Science at Northwestern Polytechnical University from 2024 to 2025. He is currently an Associate Professor at the Hangzhou International Innovation Institute, Beihang University. His main research interests include IoT, WSN, SDN, VANETs, ISAC, UAVs, and communication security.

ALUMNI

1.Could you briefly introduce your current role and research focus?

I am currently an Associate Professor at the Hangzhou International Innovation Institute, Beihang University. My research focuses on wireless communication and network systems, particularly in areas such as the Internet of Things (IoT), Wireless Sensor Networks (WSNs), Wireless Rechargeable Sensor Networks (WRSNs), Vehicular Ad Hoc Networks (VANETs), Software-Defined Networking (SDN), Integrated Sensing and Communications (ISAC), and Unmanned Aerial Vehicles (UAVs). My work aims to enhance the efficiency, reliability, and security of these technologies in modern communication systems.

2. What are some of the most memorable learning or campus life experiences you had at USTC?

One standout memory was presenting my first major research paper at the IEEE International Conference on Mobility, Sensing, and Networking (IEEE MSN), organized by the School of Computer Science and Technology in 2016. The encouragement I received from faculty and peers significantly boosted my confidence and inspired me to pursue more impactful and high-quality research. Moreover, the friendships I built with labmates from diverse backgrounds made my time at USTC not only academically enriching but also deeply meaningful on a personal level.

3. How has your time at USTC positively influenced your professional development?

My time at USTC laid a strong foundation for both my academic and professional development. The rigorous training in research methodologies, critical thinking, and problem-solving equipped me with the necessary skills to tackle complex challenges in wireless communication systems. USTC’s high academic standards, particularly within the School of Computer Science and Technology, and its global outlook helped me develop a strong research ethic and the confidence to contribute meaningfully to international scientific communities. One of the most transformative aspects of my journey was the mentorship I received from Professor Xingfu Wang and Professor Ammar Hawbani. Their guidance significantly sharpened my research capabilities and shaped my professional outlook. Moreover, the professional networks I built during my time at USTC have led to valuable collaborations and opened doors to a wide range of international opportunities.

4. Was there any particular teacher or course at USTC that had a profound impact on you?

Two mentors at USTC fundamentally shaped my academic journey: Professor Xingfu Wang and Professor Ammar Hawbani. Their guidance helped shape my research approach, combining thorough analysis with creative thinking. Both professors led our research group, demonstrating exceptional leadership skills and positive energy while making significant contributions to the research community.

ALUMNI

5. What has it been like transitioning from a student to a university professor? What have been your key takeaways in teaching or research?

Transitioning from a PhD student at USTC to an Associate Professor at Northwestern Polytechnical University and subsequently at the Hangzhou International Innovation Institute, Beihang University, has been both challenging and deeply rewarding. Moving from conducting research under supervision to leading independent projects required significant mindset shifts. Suddenly, I was responsible not only for my own work, but also for designing research directions (such as our ISAC-assisted WRSN studies), mentoring students, and teaching undergraduate and graduate courses. My postdoctoral position at SUSTech served as a crucial bridge during this evolution, allowing me to develop leadership skills within a supportive research environment before taking on full faculty responsibilities.

My Key Takeaways in Teaching and Research

Central to my teaching approach is transforming complex technical concepts into relatable, real-world applications while empowering students to take the lead. This philosophy extends beyond the classroom. My Springer monograph, Empowering IoT: Reliability, Network Management, Sensing, and Probabilistic Charging in Wireless Sensor Networks (published July 2025), synthesizes key advancements in IoT efficiency and reliability. Though developed independently, its insights directly inform how I mentor graduate researchers to solve concrete network challenges.

Research excellence demands interdisciplinary synthesis and intentional collaboration. My work integrates Software-Defined Networking with Wireless Sensor Networks (SDN-WSN) and Integrated Sensing and Communications with Wireless Rechargeable Sensor Networks (ISAC-WRSN), addressing critical energy and reliability trade-offs, as demonstrated in publications in IEEE Transactions on Mobile Computing (2022, 2024) and ACM MobiCom (2024). Through international partnerships spanning Europe, China, and Pakistan, we accelerate innovation supported by peer-reviewed journals and major conferences.

ALUMNI

6.What are your views on the future of computer application technologies? Any advice for current students?

The Future of Computer Application Technologies

Computer technologies of the future will develop into deeply linked systems that anticipate and adjust to human needs, going beyond distinct tools. The real revolution will occur in convergence, even though IoT and network developments will continue to play a crucial role in enabling everything from industrial sensors that anticipate equipment failures to smart cities with self-optimizing traffic flows. AI is going to impact education (adaptive learning platforms), healthcare (e.g., AI identifying health conditions from scans), and sustainability (algorithms reducing the waste of energy in supply chains). While ethical AI frameworks guarantee that these advancements empower rather than exclude, quantum computing may open the door to solutions in material science or climate modeling. Importantly, IoT and networks will act as the nervous system of this evolution: billions of linked devices collecting data in real time, combined with extremely reliable 5G/6G networks, will allow for smooth communication between humans, machinery, and environments. It is not only "smart"; the future is human-centered, sustainable, and automatically responsive.

Advice for Current Students

Acquire a solid understanding of systems design, data structures, and algorithms, these are essential foundations for progress in distributed systems, networking, and AI. Code every day: contribute to open-source projects, solve problems on platforms like LeetCode, or create your own tools (e.g., a lightweight OS scheduler or a network packet analyzer). Focus deeply on mastering a few core computer science concepts rather than touching lightly on many areas. Incorporate best practices, such as clean architecture, thorough testing, and version control (Git), into every project. When addressing real-world problems (such as optimizing data transmission from IoT devices), always mathematically validate your solutions. Remember, complexity analysis is an engineering discipline, not just an academic exercise.

ALUMNI

7.How do you usually stay connected with USTC? What are your expectations for the alumni network and the university?

I stay connected to USTC through ongoing mentorship from professors and engagement through research collaborations, student mentorship, and support for student-led initiatives. As an alumnus, I envision a dynamic network that:

1)Creates mentorship bridges between senior and young graduates,

2)Facilitates joint grant proposals,

3)Spotlights alumni-led breakthroughs to inspire current students.

8.Lastly, is there anything you would like to say to USTC and fellow alumni around the world?

To USTC: Your belief in cross-cultural education (exemplified by my journey from Pakistan to China) reshapes futures.

To alumni: Our strength lies in unity. Let’s create a “knowledge without borders” ecosystem, funding joint labs, spotlighting student voices, and turning research breakthroughs into global public goods. Together, we honor USTC by lighting paths for those who follow.

SHARE YOUR STORY!

WHAT YOU CAN SHARE

including but not limited to

- CAREER & RESEARCH
- LIFE AFTER USTC
- ENTREPRENEURIAL VENTURES
- CROSS-CULTURAL EXPERIENCES
- MEMORABLE USTC MOMENTS

FORMATS

- ARTICLES OR ESSAYS
- PHOTO STORIES
- SHORT VIDEOS
- INTERVIEWS

SUBMIT NOW!

intlalumni@ustc.edu.cn

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