Cambridge University - Nanjing
Centre of Technology and Innovation
剑桥大学南京科技创新中心

- 剑桥大学和江北新区正式签署中心二期《合作备忘录》

  University of Cambridge and Nanjing Jiangbei New Area Formally Signed a Memorandum of Understanding for the Second Phrase of CUNJC

- 中心召开项目委员会首次项目批准会议

  CUNJC Held the First Project Committee Project Approval Meeting

- 中心与剑桥大学招生办公室共同主办“直通剑桥——2026级本科生招生说明会”

  CUNJC and Cambridge Admission Office Held the“Applying to Cambridge: Admission Event for 2026 Undergraduate Study”

半年报→

NEWS LETTER

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PREFACE / 卷首语

Technological and industrial innovation are the fundamental pathways to developing new quality productive forces. To promote its integration in a solid and coordinated way, CUNJC—Cambridge University' s strategic platform in China—has remained committed to bridging research and commercialisation. Grounded in local industry demand, backed by Cambridge' s world-leading scientific capacity and been resolute in promoting the commercialisation of scientific research, the Centre places high priority on the application of research outputs, building a fully connected chain and covering the entire process.

With the signing of the Memorandum of Understanding for the Second Phrase of CUNJC between the University of Cambridge and the Nanjing Jiangbei New Area in January 2025, the Centre has entered a new stage of development. By continuously providing high-quality scientific outputs, CUNJC aims to intensify research and development toward commercialisation, focus on practical problem-solving, and develop in all dimensions—including research project implementation, external activities and exchanges, commercialisation exploration, and talent development. This all-round effort is driving the convergence of the innovation, industrial, and talent chains, and forging a mutually reinforcing ecosystem where science empowers industry, and industry, in turn, energises science.

University of Cambridge and Nanjing Jiangbei New Area Formally Signed a Memorandum of Understanding for the Second Phrase of CUNJC

On January 27, the University of Cambridge and Nanjing Jiangbei New Area formally signed the Memorandum of Understanding for the Second Phrase of CUNJC. This milestone agreement follows multiple rounds of consultation based on a thorough review of the Centre' s trajectory and achievements since its establishment. The MoU introduces new governance mechanisms, including the Project Committee, to ensure sustainable progress in research and commercialisation. It will serve as the guiding document for the Centre' s next phase of comprehensive development.

CUNJC Held the First Project Committee Project Approval Meeting

Following the official establishment of the Project Committee, new project approvals have been carried out in an orderly manner.

On April 2, CUNJC held a preparatory discussion with representatives from the University of Cambridge, Nanjing Jiangbei New Area, Jiangsu Industrial Technology Research Institute, and internal staff to preliminarily confirm the application process, proposal templates, and operational framework of the Project Committee.

On June 18, the Project Committee convened its first formal project approval meeting for the second phase. The meeting evaluated and approved submitted project proposals. The Project Committee is jointly formed by the Chinese and British cooperating parties, with members from both sides including the University of Cambridge, Technology and Innovation Bureau of Nanjing Jiangbei New Area, the Industrial Technology Research and Innovation Park of Nanjing Jiangbei New Area and Jiangsu Industrial Technology Research Institute. In addition, relevant personnel from the Office of Translational Research and Strategic Partnerships Office of Cambridge University, Jiangsu Industrial Technology Research Institute, Technology and Innovation Bureau of Nanjing Jiangbei New Area, the Industrial Technology Research and Innovation Park of Nanjing Jiangbei New Area, and the Centre also attended the meeting.

The Scene of the Project Approval Meeting

In alignment with the commercialisation expectations and requirements of its research projects, CUNJC assists Cambridge Project Investigators (PIs) during the preparation period by providing insights into the characteristics of the Chinese market and analysing industry trends and current conditions. Leveraging its extensive industrial resources accumulated through long-term engagement with local enterprises, and grounded in real application scenarios, CUNJC provides PIs with well-matched corporate contacts. The Centre actively builds bridges between research and industry to facilitate meaningful collaboration.

CUNJC and Cambridge Admissions Office held “Applying to Cambridge” Admission Event for 2026 Undergraduate Study

Later of April 14, CUNJC, Cambridge Admissions Office, and the Nanjing Overseas Collaborative Innovation Center (Cambridge, UK) jointly held the “Applying to Cambridge” Admission Event for 2026 Undergraduate Study.

During the event, Dr. Luis Perez, East Asia Regional Manager from the Cambridge Admissions Office, provided guidance on application essentials. Prof. Daping Chu, tenured chair professor at the University of Cambridge and Academic Director and CEO of CUNJC, offered earnest advice to young students, encouraging the young generation to boldly sail in the brand-new academia.

The Scene of “Applying to Cambridge” Admission Event

The Scene of the Special Session Exclusively for Guidance Counsellors from International High Schools

Photo of the Gathering

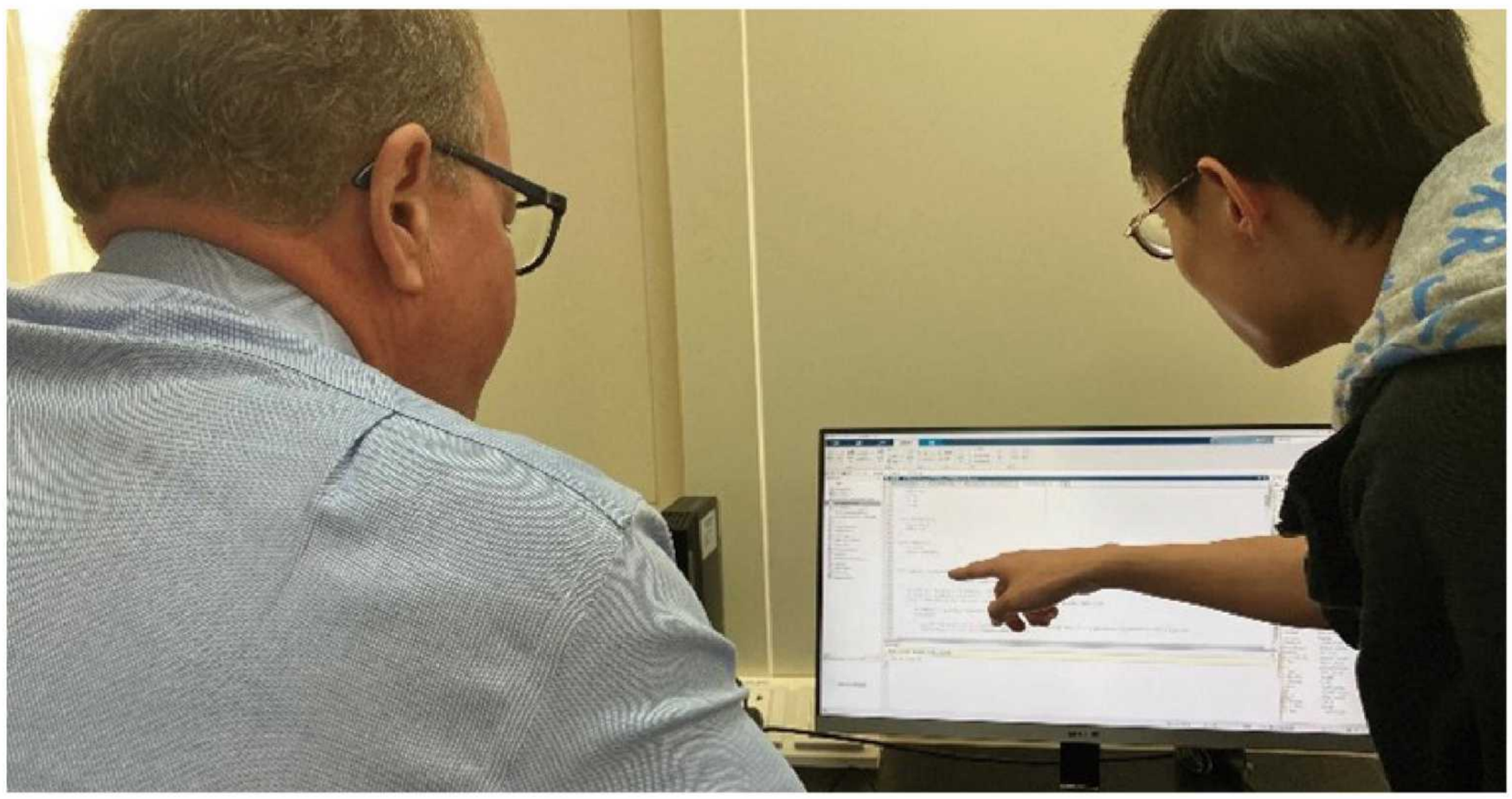
The Cambridge Undergraduate Study Admission Event for the first half of the year went a step further by introducing a special session exclusively for guidance counsellors from international high schools. Delivered directly by the Cambridge admissions officer, the session was designed to equip counsellors with the tools to better support their students, clarify common misconceptions, and navigate the application process more effectively. Attending counsellors unanimously praised the session as highly informative and practical.

On the evening of April 14, a “Gathering for Postgraduate Offer-holders of Cambridge” was held at the Centre’ s Library. In a relaxing and enjoyable atmosphere, alumni Zhang Hongliang from St. Catharine’ s College (Class of 2008) and Xu Chao from Hughes Hall (Class of 2022) joined Dr. Perez to engage in warm conversations with prospective postgraduate students, sharing insights into life at Cambridge.

CUNJC Research Teams Expanded

In January 2025, Professor Li Zhang, Deputy Director of Nanjing Brain Hospital, joined CUNJC' s ultrasound project team. Leveraging her extensive experience in medical diagnostics, she guided and coordinated the application of the photoacoustic microscopy prototype in physiological slice detection, particularly in brain and neural tissues.

In April 2025, Zhenzhe Han, a PhD candidate at the University of Cambridge, joined the ultrasound team as an intern researcher. Under the supervision of the PI and other senior members, he contributed to image and data analysis related to physiological slice studies.



The Ultrasound Project Intern Researcher Presenting the Project to Cambridge Vistor

CUNJC Strengthens Talent Evaluation Efforts in Research Projects

In April 2025, leveraging its project teams as platforms, CUNJC actively recommended two internationally trained PhD researchers for the national-level overseas talent programme. The Centre provided full support in helping them prepare three applications aligned with programme requirements, aiming to deepen the integration of talent with research projects and inject fresh momentum into scientific development.

B82 Vol. 64, No. 7 / 1 March 2025 / *Applied Optics* Research Article

applied optics

Digital holographic illumination using a single phase-only computer-generated hologram

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This research investigates approaches for optimizing a single phase-only computer-generated hologram (CGH) for digital holographic illumination, with a focus on reducing color dispersion and improving perceived image quality. It explores coherence, speckles, and the impact of hologram sizes on the performance of digital holographic illumination. The influence of multi-wavelength light sources and their coherence characteristics is analyzed, addressing trade-offs between the speckle contrast and image sharpness. Additionally, the role of liquid crystal on the silicon (LCoS) spatial light modulator (SLM) size in balancing resolution and noise reduction is explored. The findings establish a foundation for advancing digital holographic illumination systems, offering scalable solutions for applications in smart lighting and energy-efficient displays.

https://doi.org/10.1364/AO.545288

Project Paper

CUNJC Research Projects Yield Steady Academic Output and Maintain Robust External Collaboration

On January 16, 2025, Professor Daping Chu, the PI of **"Holographic interferometer for 3D surface profiling"** and Dr. Yuanbo Deng, the Project PI team member, published a paper titled "Digital holographic illumination using a single phase-only computer-generated hologram" in the journal Applied Optics.

RESEARCH AND COMMERCIALISATION

/ 科研与产业化

The Collaborations Built by Prof. Vidal-Puig with Multiple Universities and Enterprises in China

Professor Antonio Vidal-Puig, the PI of **“Obesity associated metabolic complications: Pathogenic mechanisms, diagnostic biomarkers and therapeutic targets”**, has established collaborations with Fudan University and Fuyao University of Science and Technology on talent development and life and health sciences. He also serves as a strategic scientific advisor to Zhejiang Hisun Pharmaceutical and, together with Co-PI Professor Dejing Pan, visited the Prince Felipe Research Centre in Valencia, Spain, to explore opportunities for international cooperation and training.

Group-Photo of the Visit to Spain

RESEARCH AND COMMERCIALISATION

/ 科研与产业化


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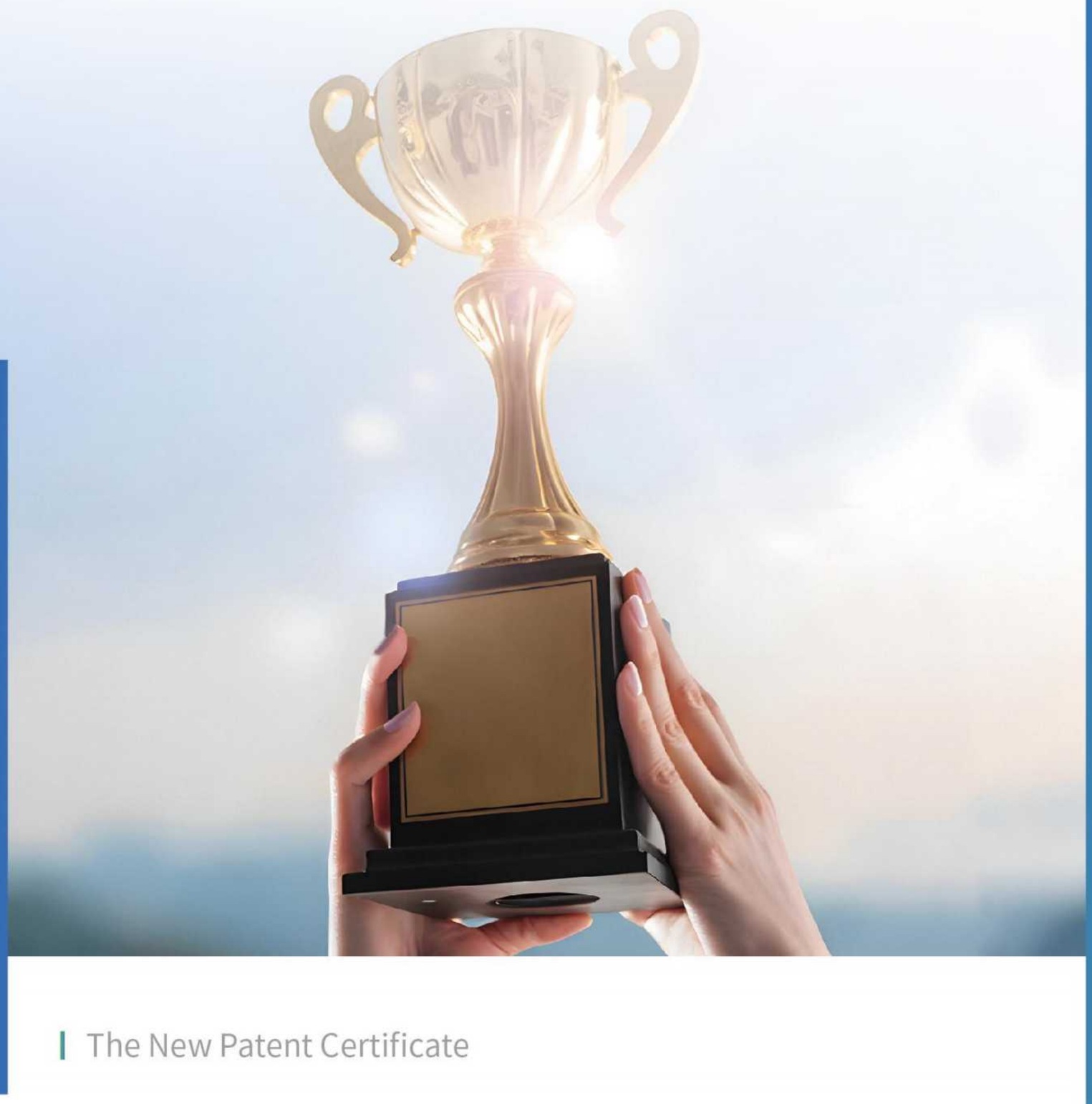

The New Patent Certificate

New Patents Granted and Filed for CUNJC Projects

In the first half of 2025, CUNJC was granted one new invention patent and filed two new patent applications. One patent—jointly filed with Nanjing University under the **“Obesity associated metabolic complications: Pathogenic mechanisms, diagnostic biomarkers and therapeutic targets”** project—was granted. Additional applications were filed under the **“DropBioApp Engineering droplet-based microfluidic platform for biological applications”** and “Holographic interferometer for 3D surface profiling” projects. To date, CUNJC has obtained 8 domestic invention patents and has 6 invention patents under application. It is also actively expanding its global IP strategy, with one U.S. patent application in progress.

RESEARCH AND COMMERCIALISATION
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Key Milestones of Ongoing Projects Achieved as Planned

The **"Multi-modality and Hybrid 3-D Ultrasound/Photoacoustic Imaging System"** project has successfully developed a prototype of the photoacoustic microscope. Given its promising application prospects, the Centre has been actively engaging with potential industrial partners to explore commercialisation opportunities. The project has already entered into collaboration with Nanjing Brain Hospital to jointly study its use in physiological slice analysis, particularly in brain and nerve tissues.

Project Members Showing the Functions of the Prototype

(2) The **"Obesity associated metabolic complications: Pathogenic mechanisms, diagnostic biomarkers and therapeutic targets - The Metabolically Healthy Obesity (MHO) paradox in China"** project has made progress in several areas including mouse model development and analysis, reagent studies, and the integration of AI with biomedical research. The project team has engaged in extensive academic and scientific exchanges with pharmaceutical companies, universities, and research institutions.

RESEARCH AND COMMERCIALISATION

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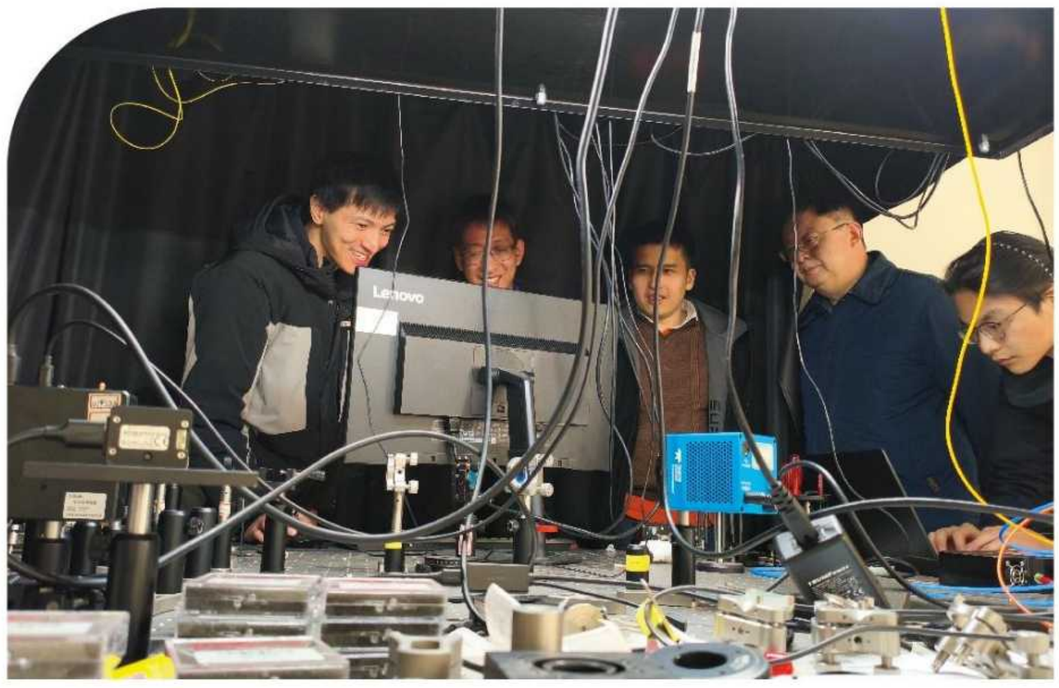
Project Members Fabricating Chips in the Clean Room

(3) The **"DropBioApp Engineering droplet-based microfluidic platform for biological applications"** project has initiated the design and validation of microfluidic chip structures. The project team has reached a preliminary agreement with Nanjing University to collaborate on applied technology development in the fields of microfluidics and exosome research.

(4) The **"Holographic interferometer for 3D surface profiling"** project has completed its scheduled tasks and has further initiated commercialisation efforts based on miniaturised spectral measurement technology. The project team also participated in the 2023 "Startup Jiangsu" Innovation Competition and received accolades. The project was successfully concluded in 2025.



Project Members Showing and Discussing about the Sample Machine

RESEARCH AND COMMERCIALISATION

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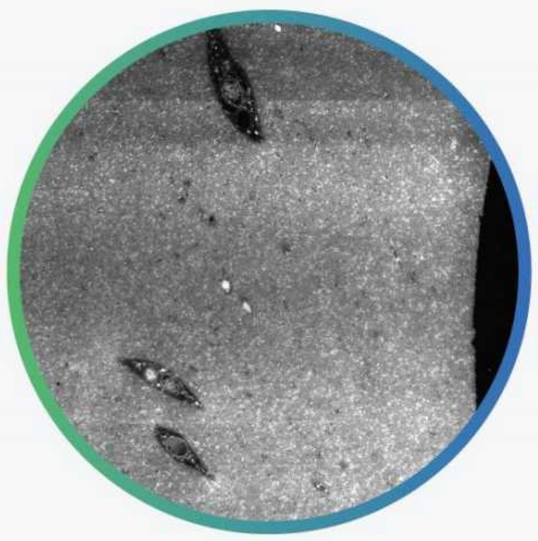
Ongoing Projects at CUNJC Continue to Make Progress of Commercialisation Exploration

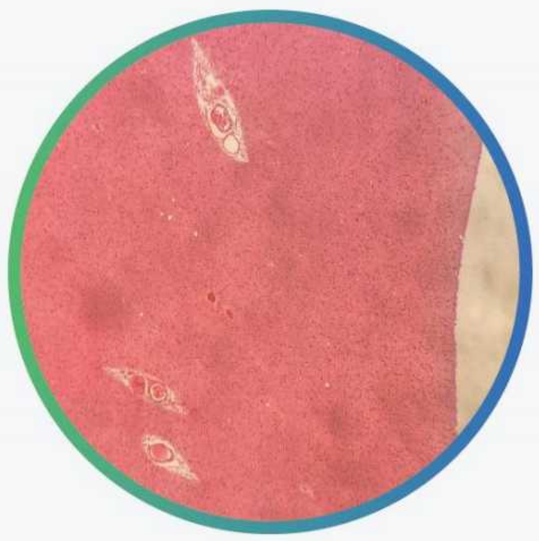
"Good technology" is technology that can be put to use. With a focus on applied research and the integration of industry-research-university, CUNJC steadily advances the commercialisation of its ongoing projects. By anchoring work in specific application scenarios and expanding technology transfer pathways, the Centre aims to ensure sustainable progress. Its support team actively connect with industry and research partners, broadening resource channels to provide strong support for research and further collaboration, and share common development with partners.

(1) The **"Multi-modality and Hybrid 3-D Ultrasound/Photoacoustic Imaging System"** project continues its joint efforts with Nanjing Brain Hospital to assess the feasibility of using the photoacoustic microscope for detecting physiological slices (e.g., brain and nerve tissues). The team has been investigating existing technologies and real-world clinical needs to explore how the prototype may fit into hospital settings—supporting the further clarification for the direction of commercialisation exploration.

A comparison between photoacoustic imaging and the current gold standard for pathological analysis—Hematoxylin and Eosin (HE) staining—at the same brain slice location: revealed nearly identical results.

Photoacoustic Imaging





HE Staining

Experimental verification has confirmed that the imaging results are nearly identical to the gold standard of pathological analysis, HE staining results.

Advantages: Photoacoustic imaging is a label-free technique that eliminates the complex and time-consuming staining process required in conventional pathological analysis. It allows for rapid digital imaging, which facilitates intraoperative decision-making, digital archiving, and remote consultations.

(2) The **"Obesity associated metabolic complications: Pathogenic mechanisms, diagnostic biomarkers and therapeutic targets"** project is steadily advancing the commercialisation of its transfection reagents. It also seeks to expand into nonalcoholic steatohepatitis (NASH)-related research through potential technical collaborations, aiming to identify viable commercialisation routes for its interim research achievements.

(3) The **"DropBioApp Engineering droplet-based microfluidic platform for biological applications"** project is refining its nanoformulation platform for biomedical applications and preparing for scientific and industrial collaborations that align with its commercialisation trajectory.

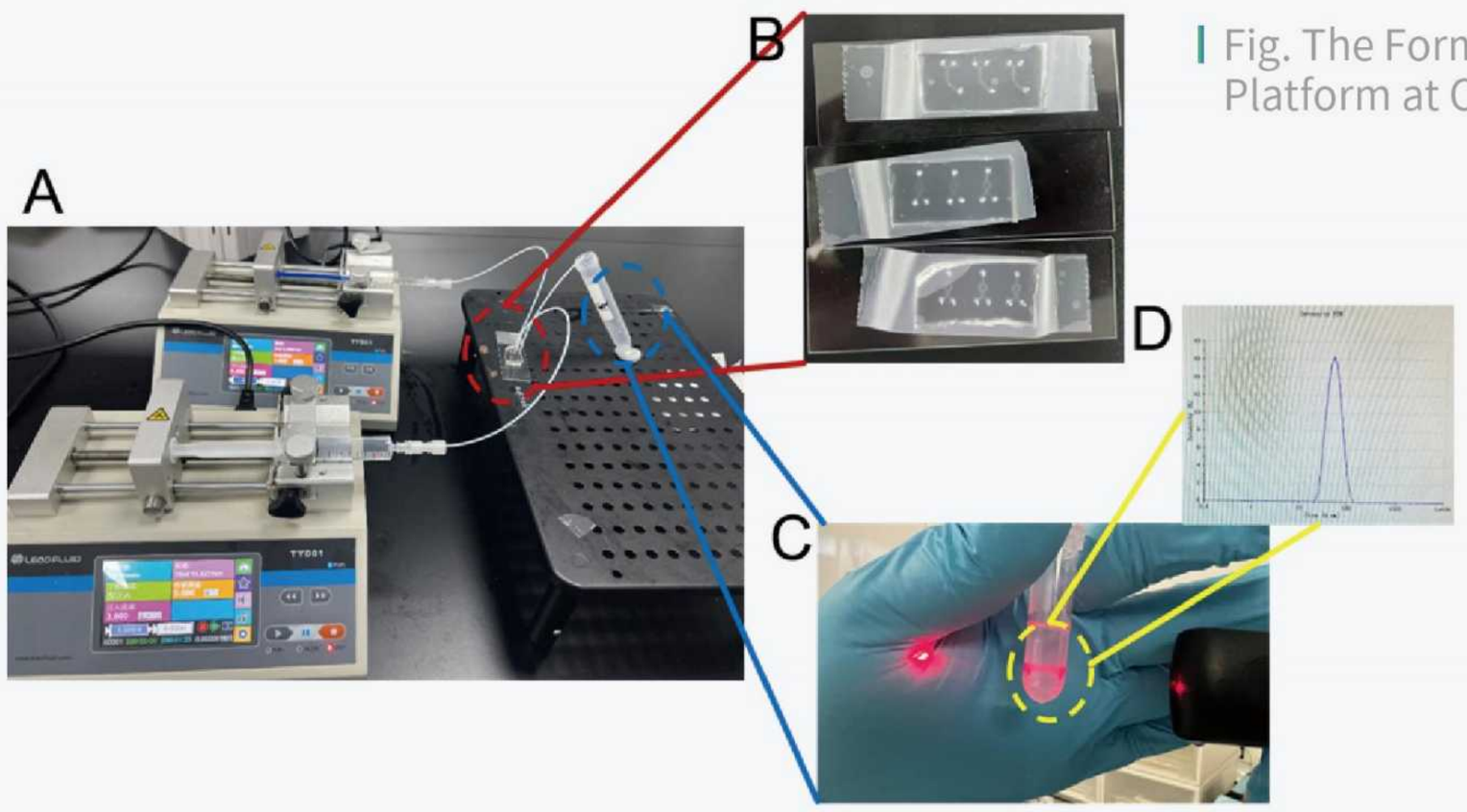


Fig. The Formulation Experiment Platform at CUNJC.

A, The microfluidic equipment for small-scale formulation research;
B, the microfluidic chips created through soft lithography and PDMS molding;
C, "Tyndall effect" observed in nano-formulation;
D, the size and PDI (polydispersity index)of nano-formulation tested by dynamic light scattering

(4) Building on project outcomes such as miniaturised spectral measurement technologies and a working prototype, the **"Holographic interferometer for 3D surface profiling"** project will proceed with engineering validation. The team plans to deepen its collaboration with Southeast University to jointly advance product development based on practical application scenarios.

RESEARCH AND COMMERCIALISATION

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CUNJC Strengthens Multi-dimensional Platforms for Applied Research and Technology Transfer

Establishment and Operation of CUNJC Project Committee for the Second Phase

Following the newly signed Memorandum of Understanding between the University of Cambridge and Jiangbei New Area, CUNJC has fully launched its second phase development. All members of the new Project Committee have been appointed and are actively engaged in operations.

Cooperation and Coordination for Project Approval

The Centre keeps maintaining active cooperation and coordination with partners including Jiangsu Industrial Technology Research Institute, Technology and Innovation Bureau and the Industrial Technology Research and Innovation Park of Nanjing Jiangbei New Area to support project approval.

Expanding Institutional Collaborations

Following further discussions with Jiangsu Industrial Technology Research Institute, the Centre reached a preliminary consensus to broaden collaboration—covering Cambridge student internships in China, enhanced project-based academic exchange, and opportunities for horizontal collaboration and proof-of-concept trials.

Strengthening Partnerships with Universities and Research Institutes

CUNJC projects maintain close research ties with institutions such as Nanjing University, Southeast University, Soochow University, and Nanjing Tech University. Based on ongoing progress, each project is also expanding its partnerships in specific technical domains. For instance, the “Multi-modality and Hybrid 3-D Ultrasound/Photoacoustic Imaging System” project signed a research collaboration agreement with Nanjing Brain Hospital to explore its prototype in physiological slice analysis and is also in discussions with Northern Jiangsu People’ s Hospital. Meanwhile, the “DropBioApp Engineering droplet-based microfluidic platform for biological applications” project has initiated in-depth technical collaboration with a research team from Nanjing University.

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CUNJC Incubated Startups Thrive

Nanjing EPIC Power Technology Co., Ltd.

The company continues to focus on high-power power module technologies. In the first half of 2025, it secured funding exceeding RMB 100 million and was honoured with the “Win-Win Growth Enterprise” Award by Jiangbei New Area Industrial Technology Research Innovation Park in 2024.

Nanjing Yudashan New Energy Technology Co., Ltd.

Focusing on EV charging and discharging systems, the company has completed the design of its core algorithm models. It is collaborating with “Star Charge” to build testing scenarios that support the practical implementation of smart energy scheduling solutions.

Nanjing Fuheng New Energy Technology Co., Ltd.

The company has reached cooperation agreements with multiple platform enterprises to deliver integrated new energy solutions for buildings. Its offerings span building-integrated photovoltaics (BIPV), intelligent charging networks, and multi-scenario energy-saving schemes—accelerating the scaled deployment of green buildings.

Nanjing Yuanmeng Technology Culture Technology Co., Ltd.

Partnering with top research institutes and leading enterprises in China, the company has built a science visualisation product system that offers innovative services for science communication and the integration of academia, industry, and research.

Nanjing Reavis Technology Co., Ltd.

Having achieved its phased incubation goals, Reavis has successfully relocated and entered a new stage of development. In June, the company established a joint innovation lab with Geely Auto, marking a new era of deep collaboration in smart cockpit core display technologies. This partnership advances head-up display (HUD) systems from cutting-edge applications to mainstream adoption. Reavis CEO Dr. Yuanbo Deng (PhD, University of Cambridge; alumnus of Cambridge Impulse Programme) and Chief Scientist Prof. Daping Chu (Tenured Chair Professor at Cambridge; CUNJC Academic Director and CEO) jointly attended the unveiling ceremony of the Geely-Reavis Joint Innovation Laboratory.

The Scene of the Unveiling Ceremony

CUNJC Launched a Series of Popular Science Activities of the 2025 Cambridge Festival

The 2025 Cambridge Festival, the University’ s most important public engagement event, was launched on March 19 for a 17-day celebration. Centred around four themes—Environment, Health, Society, and Discovery—the Festival featured a vibrant array of talks, debates, demonstrations, exhibitions, tours, performances, workshops and interactive events. Most events were open to the public free of charge.

As one of the largest of its kind in the UK, the Cambridge Festival is a vibrant, multidisciplinary event that showcases the best of Cambridge's world-class research, innovation, and creativity. Committed to making cutting-edge knowledge accessible to the public, spanning a diverse range of topics—from science, technology, health, arts, humanities and social sciences—the Festival invites participants of all ages to explore ideas, engage with experts, ignite their curiosity whilst debating some of the world’ s biggest questions, and celebrate the power of collaboration and community.

As Cambridge’ s innovation platform in China, CUNJC launched a concurrent thematic science communication series to coincide with the 2025 Festival—offering readers a direct bridge to real-time scientific updates and insights from Cambridge.

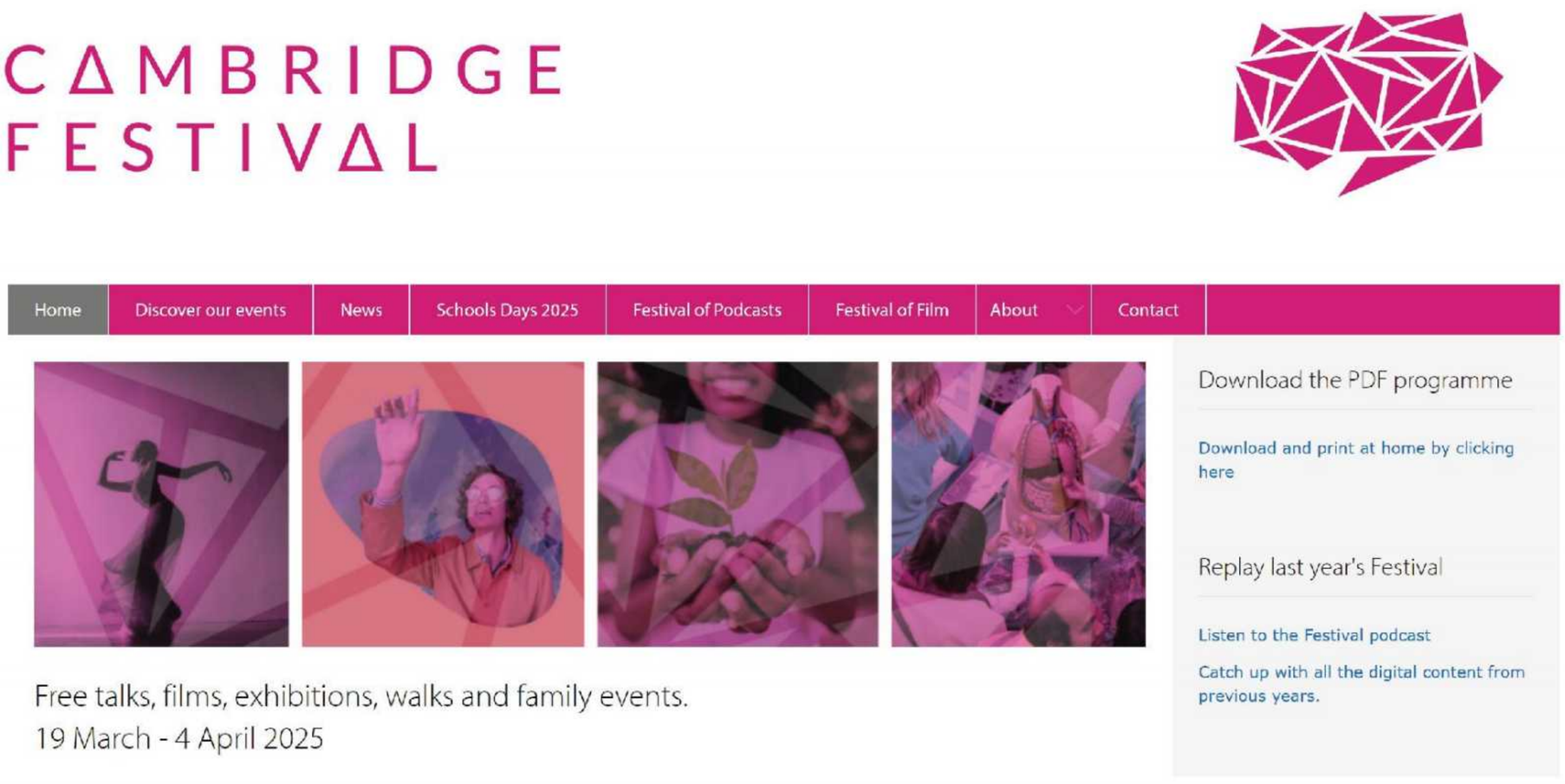

Photo from the Website Page of the 2025 Cambridge Festival

EVENTS AND EXCHANGE
/ 活动与交流

Zhao Yan, Vice Governor of Jiangsu Province, and the Delegation Visited CUNJC for Investigation and Exchange

On the morning of May 21, Jiangsu Province Vice Governor Zhao Yan visited Cambridge University Nanjing Centre of Technology and Innovation (CUNJC) for investigation and exchange, accompanied by Wang Yuanhua, Deputy Director of the Nanjing Municipal Bureau of Science and Technology, and Ni Zhigang, Director of Technology and Innovation Bureau of Nanjing Jiangbei New Area. Vice Governor Zhao toured the exhibition hall and the Centre' s incubated company, EPIC Technology Co., Ltd. He also held a video conversation with Professor Daping Chu, CUNJC' s Academic Director and CEO, to learn about the Centre' s latest developments. He expressed the hope that CUNJC would be elevated into a joint provincial-municipal platform, leveraging its location in Jiangbei New Area, and that collaboration in science and technology between Cambridge and the local region could be expanded both in depth and breadth.

Li Chunmei, Director of the Talent Office of Jiangbei New Area Party & Mass Work Department, Visited CUNJC

On February 12, Director Li Chunmei and her team of Nanjing Jiangbei New Area Party & Mass Work Department visited the Centre to learn about its talent development structure and shared information on local talent support policies and relevant programme application procedures in Jiangbei New Area.

Li Chunmei Discussing about Talent Policies with CUNJC Staff

EVENTS AND EXCHANGE
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Leaders from Jiangsu Provincial Department of Science and Technology and Nanjing Municipal Bureau of Science and Technology Visited for Talks

On February 25, a delegation from the Jiangsu Provincial Department of Science and Technology and the Nanjing Municipal Bureau of Science and Technology visited the Centre. Key visiting officials included Guo Hong, Director of the Department of International Cooperation at the Jiangsu Provincial Department of Science and Technology, and Yin Jie, Deputy Director of the Nanjing Municipal Bureau of Science and Technology. Professor Daping Chu, on behalf of the Centre, hosted the visit and gave a detailed briefing on the vision and mission of the joint initiative between the University of Cambridge and Nanjing, the Centre' s development achievements to date, and its plans for the next phase. The provincial and municipal leaders spoke highly of CUNJC' s development model and accomplishments, and expressed hopes that the Centre would continue to serve as a vital bridge linking Cambridge with both Nanjing and Jiangsu Province in scientific and technological cooperation.

The Scene of the Meeting with the Leaders from the Jiangsu Provincial Department of Science and Technology and the Nanjing Municipal Bureau of Science and Technology

Kan Suli, General Manager of the National University Biomedical Technology Transfer Centre (Jiangsu, Nanjing), Visited CUNJC

On May 28, Kan Suli, General Manager of the National University Biomedical Technology Transfer Centre (Jiangsu, Nanjing), visited CUNJC along with representatives from the International Cooperation Department of the Nanjing Municipal Bureau of Science and Technology and the Technology and Innovation Bureau of Nanjing Jiangbei New Area. The delegation engaged in a business exchange and dialogue with Professor Daping Chu, exploring future cooperation intentions and models, with the aim of advancing collaboration between Chinese universities and the University of Cambridge in the field of technology transfer and commercialisation.

EVENTS AND EXCHANGE

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CUNJC Deepens Engagement with China’ s Top Universities

In the first half of 2025, CUNJC actively expanded and deepened its strategic engagement with China’ s top universities. Centred on pragmatic discussions around talent exchange and training mechanisms, these engagements focused on topics such as innovation in technology transfer pathways, joint cultivation of high-level international talent, and alignment with Cambridge’ s premium academic resources. CUNJC carried out a series of fruitful interactions with key institutions including: the International Innovation and Transformation School and Shenzhen Institute of Shandong University; the Office of International Affairs and multiple schools at Nanjing University (School of Electronic Science and Engineering, Business School, School of Engineering Management, School of Computer Science, and School of Artificial Intelligence); the Office of International Cooperation and School of Economics at Southeast University; the School of Economics at Zhejiang University; and the Office of International Cooperation and Exchange at Fudan University. These collaborations further enriched the Centre’ s efforts to align with global science and education resources, and fully embodied its commitment to jointly building an open, efficient international talent development ecosystem in partnership with China’ s top academic institutions.

Representatives from the Office of International Affairs and the School of Electronic Science and Engineering, Nanjing University Visiting CUNJC

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