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

NEWS LETTER 半年报

2023年1-6月 第十期
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初大平教授出席**第三届江苏发展大会**
Professor Daping Chu attended the 3rd Jiangsu Development Summit

中心合作项目在**《自然·通讯》**发表学术论文
CUNJC' S research project published an academic paper in Nature Communications

中心启动**中期考核评估**
Mid-term review commenced in CUNJC

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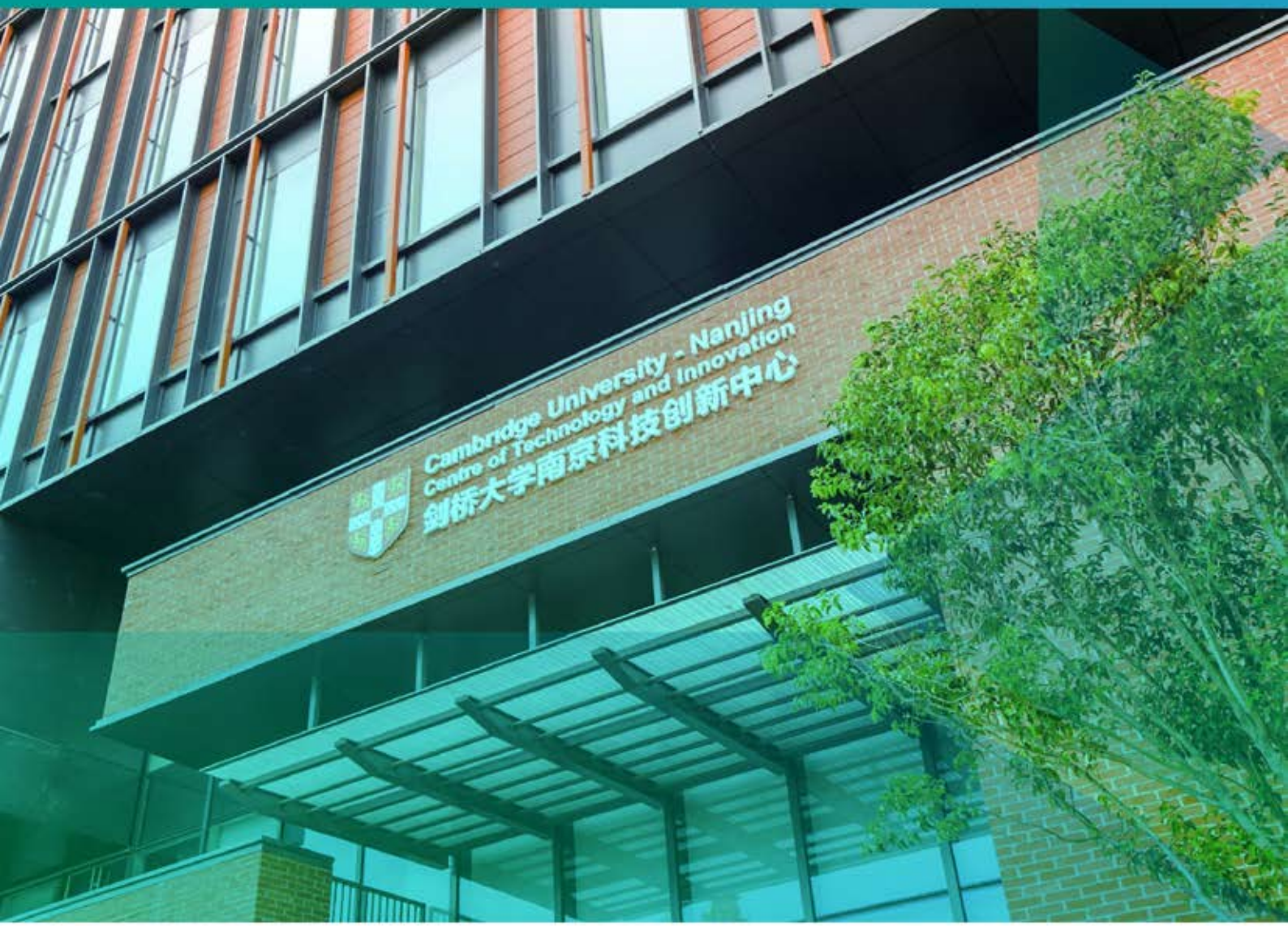


PREFACE
卷首语

Focalised on science and technology innovation and supported by numerous resources of University of Cambridge, in the first half of 2023, Cambridge University-Nanjing Centre of Technology and Innovation (the CUNJC), as the first overseas research institute established by Cambridge University, continued to focus on innovation research, innovation transformation, and innovation links, and has supported the steady development of ongoing research projects, published influential academic outputs, and produced multiple technical patents, surrounding the complete research and innovation value chain of "original basic research – original application innovation – technology development – commercialisation". CUNJC prioritised international collaboration and worked closely with domestic universities, research institutions, technology-based businesses, alumni associations, and other partners. CUNJC also organised or introduced distinctive Cambridge events like "Applying to Cambridge: 2024 Undergraduate Admission Event", "Cambridge Festival 2023", "Cambridge Undergraduate Open Days 2023", etc.. In addition, CUNJC is committed to playing a comprehensive role in supporting the development of Cambridge University in China.

HEADLINES
中心要闻

On 20 May, the 3rd Jiangsu Development Summit held in Nanjing with the theme of "Love Jiangsu and build a dream together". Before the conference, as an invited guest, Daping Chu, tenured professor of Cambridge University and Academic Director&CEO of CUNJC, was interviewed by several provincial and municipal media, and told reporters about Jiangsu' s development and technology innovation in his eyes.

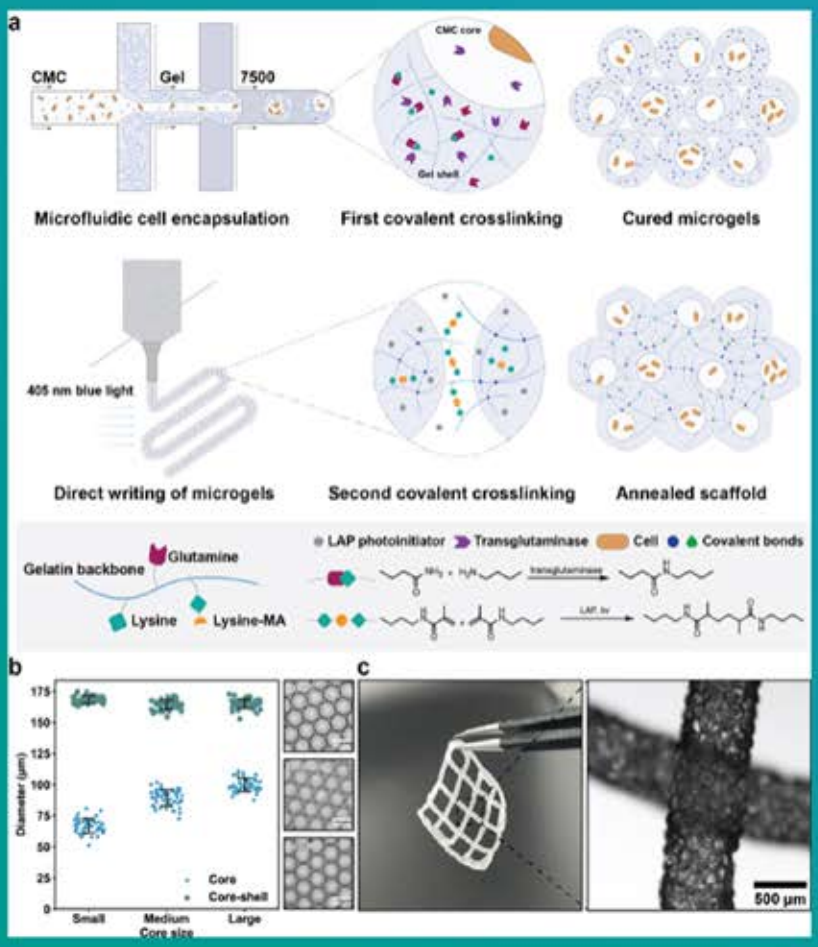
Article | Open Access | Published: 19 January 2023

Bioprinting microporous functional living materials from protein-based core-shell microgels

Yangteng Ou, Shixiang Cao, Yang Zhang, Hongjia Zhu, Chengzhi Guo, Wei Yan, Fengxue Xin, Weiliang Dong, Yanli Zhang, Masashi Narita, Ziyi Yu ✉ & Tuomas P. J. Knowles ✉

Nature Communications **14**, Article number: 322 (2023) | Cite this article

A novel kind of bioink has been invented by Professor Ziyi Yu of Nanjing Tech University, who is the Co-PI of "DropBioApp Engineering droplet-based microfluidic platform for biological application" project of CUNJC, and Professor Tuomas Knowles of Department of Chemistry of University of Cambridge. The ink consists of hydrogel microspheres and uses the aqueous two-phase system between the two biomaterials to form a core-shell structure that decouples the 3D printing of material from the cellular microenvironment .



The research was published on 19 January in the international prestigious journal Nature Communications under the title "Bioprinting microporous functional living materials from protein-based core-shell microgels". The first author is Teng Ouyang, a PhD candidate in the Department of Chemistry of the University of Cambridge and research assistant of the CUNJC, and Professor Ziyi Yu and Professor Tuomas Knowles are the corresponding authors. This academic paper is one of the joint research results of University of Cambridge, State Key Laboratory of Materials-oriented Chemical Engineering of Nanjing Tech University, and the "DropBioApp Engineering droplet-based microfluidic platform for biological application" project of CUNJC.

The University of Cambridge and Nanjing jointly commenced the mid-term review on CUNJC, to assess the past collaboration and accomplishments, in its fourth anniversary. As the carrier of the cooperation between these two parties, CUNJC has actively replied to the requests put forth by the evaluator, sorted out and provided numerous documents, and organised several on-site expert evaluation meeting. The mid-term review is currently under processing in a systematic manner.

RESEARCH AND COMMERCIALISATION
科研及产业化

On 3 January, Xi Yang joined the CUNJC' s "Study on the Mechanism and Control Strategy of Obesity Complications" project as an intern researcher. Researcher Xi Yang graduated from Soochow University with a Master of Science degree.

The "Study on the Mechanism and Control Strategy of Obesity Complications" project aims to determine the control mechanism of adipose tissue plasticity and function, to ensure the implementation of prevention strategies for metabolic complications associated with obesity, and to investigate the effects of obesity on the liver lipid network that results in fatty liver. The research results of this project will help to identify molecular targets required for therapeutic interventions and will serve as a new theoretical basis for identifying therapeutic strategies for obesity-related metabolic diseases, such as diabetes, fatty liver, and cardiometabolic complications based on the concepts of lipotoxicity and adipose tissue dysfunction.

On 28 March, Yu Shen joined the CUNJC as associate researcher in the project of "DropBioApp Engineering Droplet-based Microfluidic Platform for Biological Applications". Researcher Yu Shen graduated from Nanjing University with a PhD in Science.

This project is carried out in CUNJC and a microfluidic platform has been constructed, including the workstation for fabricating microfluidic devices, fluorescence detectors with microfluid sorting capabilities. Additionally, the research findings can be applied to microfluid creation, material synthesis, cell encapsulation, and fluorescence sorting, etc..

证书号第5682745号

发明专利证书

发明名称：一种测量液晶器件实际反射率的方法与装置

发 明 人：杨海宁;初大平

专 利 号：ZL 2020 1 0285756.0

专利申请日：2020年04月13日

专利权人：剑桥大学南京科技创新中心有限公司

证书号第6094056号

发明专利证书

发明名称：一种MMSE波束形成器、MMSE波束形成方法、计算机可读存储介质

发 明 人：阮义;理查德普拉格

专 利 号：ZL 2020 1 0288748.1

专利申请日：2020年04月13日

专利权人：剑桥大学南京科技创新中心有限公司

Two new invention patents were granted in the first half of the year, namely "A Method and Device for Measuring the Actual Reflectivity of Liquid Crystal Devices" by Professor Daping Chu's project team and "An MMSE Beamformer, a MMSE Beamforming Method, and a Computer-readable Storage Medium" by Professor Richard Prager's project team.

CUNJC will formally establish scientific cooperation with Nanjing University and Soochow University in the field of metabolic complications associated with obesity, based on a long-term academic exchange. CUNJC is negotiating with industrial enterprises on the license-out of multiple sets of intellectual property, and the implementation strategy will completely take into account the previous practices in China and UK and form CUNJC' s typical sample and practice model of IP license-out, which can support the rapid growth of industrial enterprises.

The incubation space at CUNJC has been officially put into use, and two applied research startups between the incubated enterprises have obtained 2-3 rounds of funding, and both are valued at hundreds of millions of Chinese yuan. CUNJC will keep improving the service scheme for incubation space and on track of those interested alumni businesses.

Based on the strength of Cambridge University' s scientific research, CUNJC starts off with the commercialisation-oriented applied research and engages in negotiations and connections with industrial partners, social institutions, etc. to explore new models, methods, and paths for scientific research and commercialisation. These include establishing continuous communication with China Bio, connecting Cambridge UK and some relevant parties intended for cooperation on preliminary negotiation and exchange, communicating with JSTI for cooperation on dual carbon technologies in China' s transportation and infrastructure, such as the development needs and planning of dual carbon technology; maintaining communication and cooperation with Jiangsu Industrial Technology Research Institution for two-way docking; communicating and collecting the industrial or clinical needs and cooperation intentions with personnel from enterprises and institutions such as Midea, BOE, Contemporary Amperex, Changzhou University and Nanjing Drum Tower Hospital.

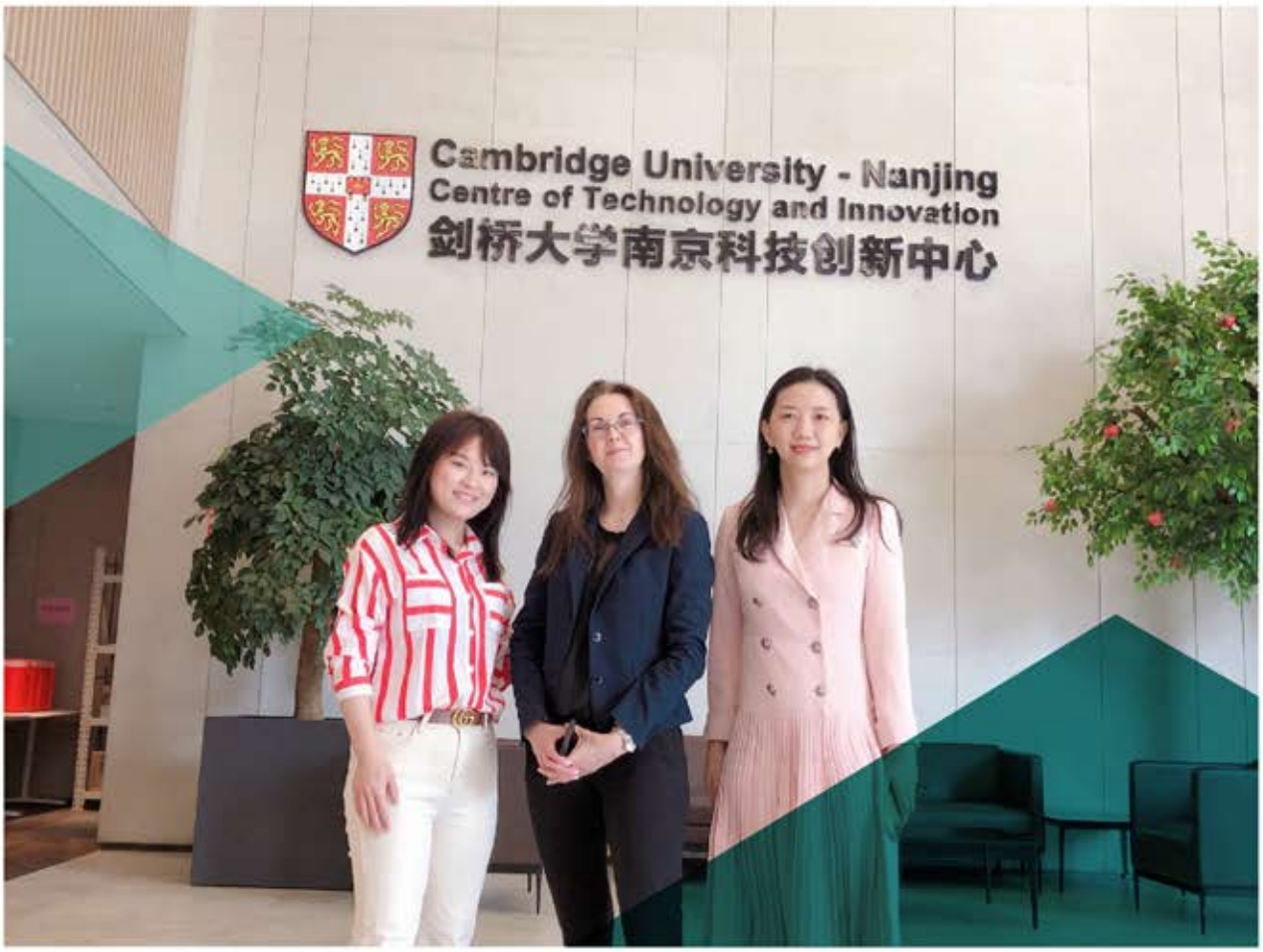
EVENTS AND EXCHANGE
活动与交流

UNIVERSITY OF CAMBRIDGE | CAMBRIDGE FESTIVAL

Cambridge Festival 2023, the University' s the most important public engagement event, runs from 17 March until 2 April, packs a hefty cultural punch through more than 360 in-person and online events (mostly free). The major topics of this year' s Cambridge Festival are power, society, health, environment and discovery, which will be explored through debates, talks, exhibitions, workshops, films, tours, performances, and book launches.

As the supporting platform for the development of Cambridge University in China and a research institute dedicated to science and technology innovation, CUNJC simultaneously released the "Cambridge Festival 2023" series during the Cambridge Festival to bridge the reader with the first-hand scientific information in Cambridge.

On 12 May, Ms. Clare Monaghan, Director of Alumni Engagement in Cambridge University Development and Alumni Relations Office visited CUNJC and attended the Cambridge Alumni Dinner. The leaders of the Beijing Oxbridge Alumni Association, Suzhou and Zhejiang Oxford Alumni Association, and Shanghai Cambridge Alumni Association interacted with Ms. Monaghan about the planning of alumni events, alumni development, and alumni businesses and expressed the expectations that the University would give alumni activities more support and attention. Ms. Monaghan and the alumni discussed their professional aspirations and objectives, as well as the general state of alumni in recent years.



In the afternoon of 14 April, as a supporting platform for the comprehensive development of the University of Cambridge in China, CUNJC worked with Cambridge Admissions Office, together with the Nanjing Overseas Collaborative Innovation Centre (Cambridge, UK) to hold the "Applying to Cambridge: 2024 Undergraduate Admission Event" in Nanjing, which was a great success.

The event not only attracted enthusiastic participants from several high schools in Nanjing, such as Nanjing Foreign Language School, High School Affiliated To Nanjing Normal University, Jinling High School, Nanjing International School, Nanjing Times Bilingual School, Nanjing Ambright School, Nanjing Yuhuatai High School, etc., but also harvested active registrations from students in the Yangtze River Delta and Beijing-Tianjin regions, such as WLSA Shanghai Academy, High School Affiliated to Renmin University of China, Suzhou High School, Changzhou WAS School, and Tianjin Yinghua Experimental School. Over 300 high school students, school counsellors, and parents participated in this admission event either in person or online.

Ms. Olivia Matthewson, Regional Manager East Asia in Cambridge Admissions Office, joined the event virtually and gave a thorough explanation of Cambridge's characteristics and the requirements for undergraduate applications. Upon the invitation by CUNJC, seven Cambridge alumni from five fields - Engineering, Computer Science, Natural Sciences, Economics, Humanities,Social Sciences and Political Science, joined the focus group discussion to answer questions for the students.

As a science and technology innovation platform featuring international cooperation, CUNJC maintains good communication and liaison with government authorities such as science and technology and foreign affairs, and actively links resources from all sides to support the construction of local innovation ecosystem:

On 25 February, CUNJC attended the city-wide innovation promotion meeting organised by Nanjing Science and Technology Bureau;

In March, CUNJC responded to the call from the Department of International Cooperation of the Ministry of Science and Technology to publicize the achievements of domestic science and technology innovation and cooperation;

On 19 April, CUNJC invited Qin Wang, Secretary of the Sub-party of Committee of Science and Technology of the Jiangsu Provincial Committee of the Chinese People' s Political Consultative Conference, to visit and provide constructive advice for the long-term strategic development planning of the Centre;

On 22 May, CUNJC visited the leaders of Jiangbei New Area Management Committee to present the most recent accomplishments and the upcoming work schedule.

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