澳大新語 **UMagazine**

不惑 新航
揚帆追夢
SET SAIL ANEW ON
THE RUBY JUBILEE

1981
-
2021

40

揚帆追夢
—— 澳門大學40週年

Set Sail for New Horizons on
the 40th Anniversary

本期附《澳門大學年度簡報2019/2020》
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UMagazine《澳大新語》

FSC

校長致辭

2021年，是澳門大學成員翹首以盼的不惑校慶之年。

澳大創校40年以來，在社會各界的鼎力支持、師生職員的奮鬥下砥礪前行，銳意進取，已發展成為一所中西多元融合的國際化綜合性大學，為澳門高等教育的發展貢獻重要的力量。

今天的澳大，秉承「仁、義、禮、知、信」優良校訓傳統，致力孕育具有創新思維、家國情懷、國際視野、全球競爭力和世界擔當的優秀人才。40載化雨春風，桃李芬香，我們已培養了近60,000名校友，遍及世界各地，在各自專業領域克盡己責，成為推動社會建設和發展的中流砥柱。

在中央政府和澳門特區政府的關懷和支持下，澳大辦學規模不斷擴展。位於橫琴島的新校園在2013年啟用後，引入住宿式書院系統，實踐全人教育；延攬更多來自世界各地的優秀教研人員，學術研究突飛猛進，果實纍纍。

因應社會發展及市場需求，澳大不斷完善學科建設和規劃研究佈局。近年形成「3+3+3+3」為骨幹的研究戰略佈局，鼓勵跨學科合作，推動科技成果轉化。澳大一支全方位的專業學術團隊在過去40年，為社會提供各類技術顧問、諮詢和培訓，傾力以知識和研究造福社群。

不惑新航，揚帆追夢！站在新的歷史起點，機遇與挑戰並存。澳大將善用「一國兩制」的制度優勢，全力配合國家和澳門特區的發展部署，並以「立足澳門、共建灣區、融入國家，走向世界」為宗旨，加強與世界及全國夥伴高校的合作，攜手共進，共同推動高等教育事業的發展。我相信，澳大未來將會發展得更好，為人類福祉作出更大的貢獻。

宋永華 Yonghua Song

The year 2021 is the 40th anniversary of the University of Macau (UM) to which all university members have been eagerly looking forward.

With the local community's tremendous support, and the hard work of faculty, students, and staff over the past four decades, UM has progressed in leaps and bounds and has developed into a comprehensive international university with a multicultural campus blending Chinese and Western influences. It is now a major force in the promotion of higher education development in Macao.

Upholding the five virtues listed in the university motto, namely humanity, integrity, propriety, wisdom, and sincerity, today's UM is committed to producing creative and socially responsible graduates with a global mindset and international competitiveness who also love China and Macao. In the past 40 years, the university has nurtured nearly 60,000 graduates, who are now serving as pillars in their respective fields around the world to contribute to the development of society.

Thanks to the support of both the central government and the Macao Special Administrative Region (SAR) government, UM continues to expand in terms of faculty size and student numbers. The university implemented a residential college system for whole-person education when the new campus on Hengqin island became operational in 2013. In addition, UM spares no effort to recruit high-calibre scholars from around the world, which has led to a growing number of research projects at the university with influential results.

To address social development needs and market demands, UM has actively enhanced its academic structure and research design. In recent years, the university has formulated a '3+3+3+3' strategic research blueprint to encourage interdisciplinary collaboration and promote technology transfer. In addition, UM's faculty team has provided technical consultancy and professional training in various fields over the years to benefit the community through research and the dissemination of knowledge.

'Set sail anew on the ruby jubilee', the slogan for celebrating this special year, implies that UM is ushering in a new era. Although opportunities always come with challenges, the university will build on its strengths by taking advantage of the 'One Country, Two Systems' policy to provide full support for the development of China and the Macao SAR. Having positioned itself as a university of Macao and for Macao, UM will actively participate in the development of the Guangdong-Hong Kong-Macao Greater Bay Area, align with national development strategies, strive to become more international, and continue to strengthen collaboration with partner universities in China and abroad to promote higher education development. I believe that in the future, UM will make new progress and greater contributions to humanity.

目錄
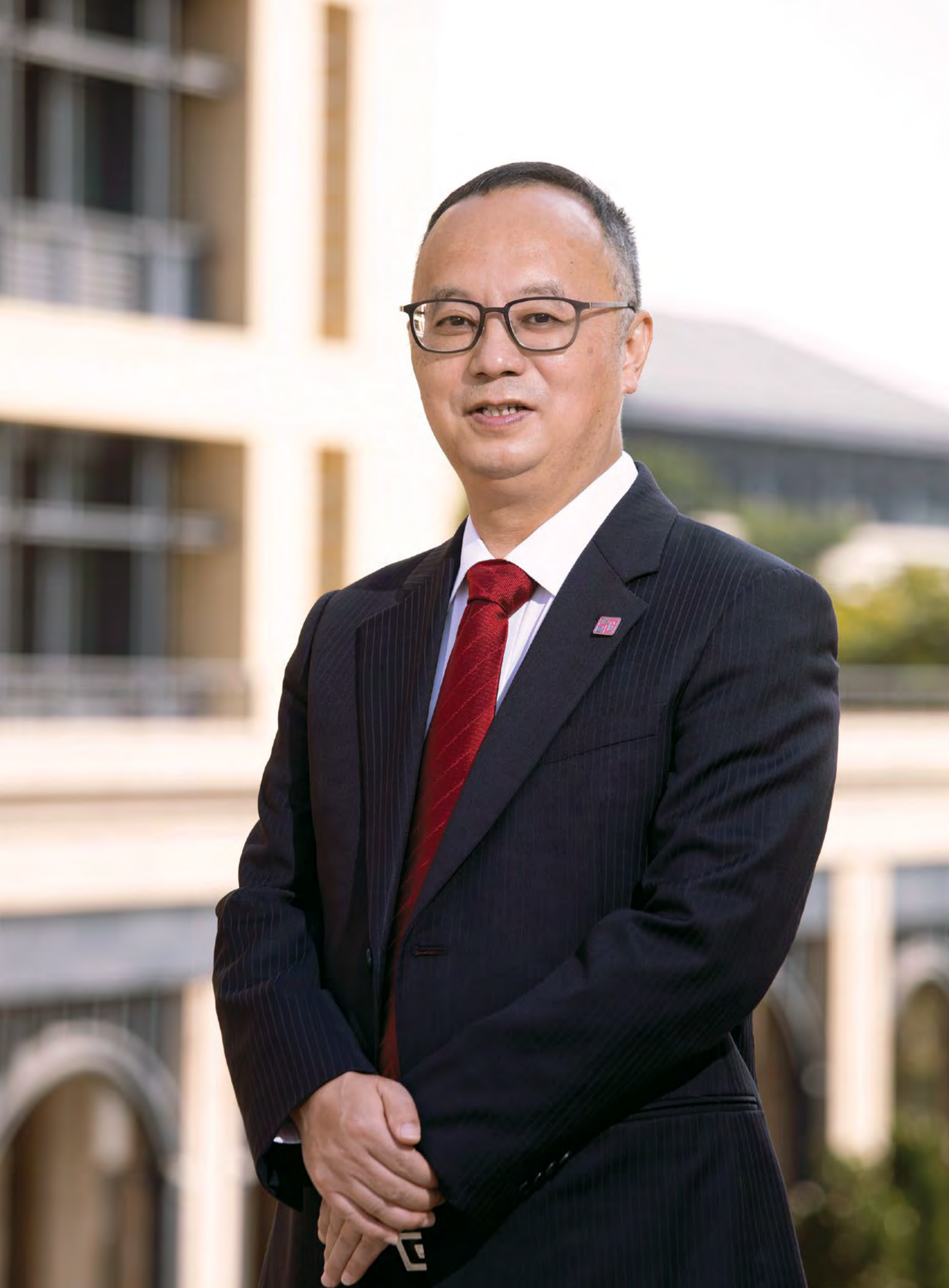
CONTENTS

澳門大學40週年校慶特刊
The 40th Anniversary Special Edition

揚帆追夢 — 澳門大學40週年
SET SAIL FOR NEW HORIZONS ON THE 40TH ANNIVERSARY

40 1981-2021
不惑新航
揚帆追夢
SET SAIL ANEW ON
THE RUBY JUBILEE

澳門大學　孫圖書館

培育人才貢獻社會
Four Decades, For Education

文/張愛華、葉浩男、盛惠怡、鄭家宜・圖/編輯部，部分由受訪者提供

English Translation / Ruby Chen・Photo / Editorial Board, with some provided by the interviewees

澳門大學（澳大）創校40載，砥礪奮進，見證了澳門社會翻天覆地的轉變，從一所小型的社區大學發展成為世界排名前350、亞洲大學排名37的國際化綜合性大學，歷年培養近60,000名畢業生，分佈各行各業，對推動澳門社會的發展作出了不可估量的貢獻。

When the University of Macau (UM) was founded 40 years ago, it was just a small local college. Today, it is a comprehensive international university, ranked among the top 350 in the world, and No 37 in Asia. While undergoing a complete transformation over the past four decades, the university has also witnessed a sea change in society. The rapid social and economic development has led to an increased demand for talent, and as the leading public university in Macao, UM has dedicated itself to nurturing outstanding graduates to meet that need. Over the years, UM has graduated nearly 60,000 students, who have gone on to become contributing members of society in different parts of the world.

東亞大學的創立，標誌著澳門現代高等教育的開始。
The establishment of UEA signalled the beginning of modern higher education in Macao

澳門首間現代大學

1594年，澳門第一所高校——聖保祿學院成立，開啟了區內西式高等教育的先河。聖保祿學院於1835年被燒毀後未有復建。直至百多年後，私立東亞大學在1981年成立，澳門的高等教育史才得以延續。

1981年3月，Ricci Island West 有限公司獲澳葡政府批租土地後，黃景強、胡百熙和吳毓璘創辦了澳門首間現代大學——私立東亞大學，亦即澳門大學前身。三位創辦人不約而同認為，只有培養人才，城市才能真正發展，因此要創建澳門第一間現代化大學。當時何賢、崔德祺、馬萬祺及何鴻燊等社會賢達都紛紛支持，成為東亞大學校董，此外還有多位東南亞僑領投入資金支持。

The First Modern University in Macao

In 1594, the first higher education institution in Macao, St Paul's College, was established, ushering in a new era of Western-style higher education in the region. In 1835, the college was destroyed in a fire, with no reconstruction of the building ever attempted. It was not until 1981 that the private University of East Asia (UEA) was founded, restoring higher education in the city that had been interrupted for more than a century.

In March 1981, three gentlemen, namely Wong King Keung, Edward Woo Pak Hay, and Peter Eng Yuk Lun, established UEA, the first modern university in Macao and the predecessor of the University of Macau, on a piece of land leased by the local government to Ricci Island West. The three co-founders believed that only by nurturing talent could the city realise sustainable development. Many prominent community members, including Ho Yin, Chui Tak Kei, Ma Man Kei, and Stanley Ho, supported the new university by serving on the University Council. Many Chinese community leaders from Southeast Asia also contributed funds.

創校校長薛壽生教授在東亞大學成立典禮上致辭

Founding Rector Prof Hsueh Shou Sheng gives a speech at the inauguration ceremony of UEA

（左起）薛壽生教授、黃景強博士、吳毓璘博士、饒宗頤教授、羅慷烈教授、胡百熙博士於《東亞大學創建記》立碑典禮合影

(From left) Prof Hsueh Shou Sheng, Dr Wong King Keung, Dr Peter Eng Yuk Lun, Prof Jao Tsung I, Prof Lo Hong Lit, and Dr Edward Woo Pak Hay at a ceremony to unveil the tablet with the inscription of a summary of the founding of UEA

上世紀90年代，澳大為澳門過渡期培養急需的人才

In the 1990s, UM nurtured many talent urgently needed during the transitional period leading up to Macao's handover

東亞大學早期的學生除了來自澳門，還有很多來自香港和外地。
In addition to Macao, the early students of UEA came from Hong Kong and overseas.

東亞大學的創立，標誌著澳門現代高等教育的開始。薛壽生教授獲委任為創校校長，將國際化作為辦學定位，以英語作為主要教學語言。建校初期，大學按英式教育制度設有本科學院、預科學院和持續教育學院，早期學生大部分來自香港和外地。

培養過渡期急需的人才

1999年澳門政權交接前的過渡期，澳葡政府急需解決公務員本地化、法律本地化、確立中文的官方語言地位三大問題，於是通過大學培養有關的本地人才。

澳葡政府在1988年通過澳門基金會收購東亞大學重組。大學其後陸續設立文學院、工商管理學院、社會科學學院、科技學院和教育學院。1989年，科技課程和教育課程設立，培養本地科技人才和加強本地中、小、幼教師的培訓。大學還開設法律課程和公共行政課程。1990年，大學將本科三年制改為四年制，並將本科學院重組。1991年成

The establishment of UEA signalled the beginning of modern higher education in Macao. Prof Hsueh Shou Sheng was appointed the founding rector of the university, and English was designated the main teaching language. At the time, UEA followed the British academic system and was comprised of a University College, a College of Foundation Studies, and a Continuing Education College. The majority of the students came from Hong Kong and overseas.

Nurturing Talent Urgently Needed for the Transitional Period

During the transitional period leading up to Macao's handover, the Portuguese government of Macao was faced with three urgent issues, namely filling civil servant positions with local Macanese or Chinese citizens, making local laws compatible with the new circumstances of Macao, and establishing Chinese as one of the official languages of Macao. None of these could be accomplished without well-educated university graduates.

In 1988, the government acquired UEA through the Macao Foundation and restructured the university, with the university's School of Arts, Faculty of Business Administration (FBA), Faculty of Social Sciences (FSS),

在澳門回歸前後，澳大已成為本地學生的最佳選擇。
UM became the first choice of local students around the time of Macao's handover to China

立法學院。至1999年澳門政權交接前夕，澳大已有全日制學生2,865人，其中539人為碩士和博士研究生。

培養本地法律人才

澳大不遺餘力培養中葡雙語法律人才，包括在1996年開辦首屆中文法律課程，2003年開辦法學碩士學位－歐盟法、國際法及比較法（英文）課程，讓澳門、內地、香港等地的學生攻讀。2014年起，大學開辦五年制的法學士學位課程（中葡雙語授課），培養中葡雙語法律人才。法學院成立以來，為澳門培育了大批法律人才，畢業生有3,220名。目前，澳門多數司法官都是從澳大法學院畢業或曾在法學院進修。大部分華人法官、檢察官和律師都是澳大法學院的畢業生。

立法會議員、律師黃顯輝是澳大在1988年開辦的第一屆

Faculty of Science and Technology (FST), and Faculty of Education (FED) established one after another over the following years. In 1989, programmes in science and technology and education were launched, with the former designed to nurture science and technology professionals and the latter aimed at strengthening the training of teachers in local secondary and primary schools and kindergartens. Programmes in law and public administrations were also created. In 1990, undergraduate programmes changed from a three-year system to a four-year system and the University College was restructured. In 1991, the Faculty of Law (FLL) was established. Before Macao's handover, there were 2,865 full-time students at UM, including 539 master's and doctoral students.

黃顯輝 Vong Hin Fai

Nurturing Legal Talent for Macao

UM has done a lot of work in cultivating bilingual legal talent. In 1996, it launched the first Chinese language law programme. In 2003, it launched the Master of Law in European Union Law, International Law and Comparative Law (English language),

科技學院工程課程成立典禮
The Inauguration Ceremony of FST's engineering programmes

法學士課程學生，當時澳門完全沒有華人律師、法官、檢察官，他於是報讀了這個以葡語授課的法律課程：「當時因歷史給予的機會可以發展事業，為澳門回歸祖國參與相關的工作。澳大對於澳門法律人才的培養做了大量關鍵的工作。」

培養本土工程師

社會進步需要不同專業的人才。科技學院創院以來，為澳門工程界和科技界培養大批精英。澳大的工程學在泰晤士高等教育世界大學學科排名前150。

在澳門電力股份有限公司（澳電），不少澳大畢業生成為了重要技術崗位的工程師或負責人。1993年畢業於電機電子工程系的鄭德信，學士畢業繼續攻讀至博士，現為澳電的高級工程師，他說：「澳大提供了很好的學習平台、師資及學術環境，同時澳電亦提

鄭德信 Cheang Tak Son

which targeted students from Macao, mainland China, Hong Kong, and overseas. In 2014, it launched a five-year bachelor's degree programme in law (conducted in Chinese and Portuguese). Ever since its founding, FLL has produced a large number of legal professionals for Macao. Most of the current judicial officers in Macao either graduated from or studied courses in FLL. The majority of Chinese judges, prosecutors, and lawyers in Macao are FLL graduates.

Vong Hin Fai, a lawyer and a Legislative Assembly member, was among the first to graduate from FLL. At the time, there was an acute shortage of Chinese lawyers, judges, and prosecutors in Macao, so Vong decided to apply to the Portuguese language law programme. Looking back, Vong says: 'We were given the historic opportunity to develop our careers and contribute to the smooth handover of Macao to the motherland.'

Nurturing Local Engineers

Change propels progress, and talent is the driving force for change. Since its founding, FST has produced many outstanding engineers and scientists for Macao. The faculty is now ranked among the top 150 in engineering in the Times Higher Education World University Rankings by subject.

供一個良好而安全的工作環境及實踐機會，使我的工作事半功倍，並成為一名融合學術、技術及研究專長的工程師。」

為教育界輸送人才

在澳門過渡期，另一任務是提高私立中小學教師的質素，中小學教師的培訓成為澳葡當局優先工作。1990年，教育學院開辦中學教師培訓四年制本科課程，在1993年至1999年培養了逾1,000名學生。該院至今培養了學士、碩士和博士生逾3,000人。不少澳門中小學校校長、教師等教育工作者都是澳大教育學院的畢業生。

林劍如 Lam Kim U

澳門協同特殊教育學校校長林劍如是教育學院首屆畢業生，她說：「在澳大，教授的引領和指導、新的教育理論及技巧對我一直受用無窮。」這批畢業生在畢業後學以致用，積極為澳門貢獻專業力量。1999年畢業於教育學院中文教育專業的何詠詩現時是澳門浸信中學中文科教師。她坦言，澳大「走出去、請進來」的教育模式讓她拓寬國際視野，獲益匪淺，「大學時我受到教授們的啟發，當自己投身教育事業時，亦勇於嘗試創新的教學方式。」另一位同樣服務澳門教育界的科技學院和教育學院畢業生陳敬濂，於2012年成為澳大首位教育學博士。他經過10多年的努力，在培正中學從一名數學教師晉升為副校長。他說：「在澳大接受本科和研究生教育，讓我明白教育的真正意義——要當每一名學生的明燈。」

Many graduates of UM's engineering programmes now hold important technical or managerial positions at major companies in Macao, such as Companhia de Electricidade de Macau (CEM), the only electric power utility company in Macao. Cheang Tak Son graduated from the Department of Electrical and Electronic Engineering in 1993, and went on to complete his master's and doctoral degrees at UM. He is now a senior engineer at CEM. He says, 'UM provides a very good learning platform, teachers, and academic environment. CEM provides an excellent and safe working environment in which I can put my knowledge into practice and achieve more with less. It has also helped me grow into a well-rounded engineer.'

何詠詩在2019年獲全國最美教師獎
Ho Weng Si receives a best teacher award in China in 2019

陳敬濂 (中) 與學生分享心得
Chan Keng Lim (middle) shares experiences with his students

培養中葡雙語人才

在澳門獨特的歷史、文化、語言及地理環境下，澳大在傳播葡萄牙語言和文化，以及培養具專業葡語能力的雙語或多語人才方面可謂責無旁貸。大學早1981年創校時，已通過文學院開辦葡語科目，1990年更成立葡文系，該系目前已是葡萄牙和巴西以外最大的葡語學術單位，培養中葡雙語人才。

1999年澳門回歸前，在華人為主的本地社會中，除了土生葡人，只有極少數華人通曉葡語，大多從事教育或在政府擔任翻譯。澳門回歸後，隨著特區政府對培養中葡雙語人才日益重視，報讀葡文系的學生也與日俱增，而近年中國和葡語國家的貿易迅速增長，葡語地位更見重要。培養更多熟悉葡語的專業人才，早已是澳門可持續發展的重要策略。培養中葡雙語人才既要滿足澳門發展所需，也要服務國家對外

Training Future Teachers for Macao

Another mission during the transitional period was to improve the quality of teachers at private secondary and primary schools, because quality pre-university education would provide the youth with a head start and help enhance overall education quality in Macao, which could in turn have a positive impact on Macao's development after the handover. It is against this background that UM took a series of initiatives. In 1990, FED launched a four-year undergraduate programme to train secondary school teachers. Between 1993 and 1999, the faculty graduated more than 1,000 students. Since its founding, the faculty has graduated more than 3,000 students. Many principals and teachers in secondary and primary schools in Macao are FED graduates.

Lam Kim U, principal of the Concordia School for Special Education in Macao, was among the first to graduate from FED. She says: 'The guidance of the professors and the new education theories and skills I learned at UM have been infinitely useful to me.' Ho Weng Si, who graduated from the Chinese language education programme in 1999, is currently a Chinese

澳大在澳門過渡期擔當起培養中葡雙語人才的重任
UM took up the responsibility of nurturing Chinese-Portuguese bilingual talent during the transitional period leading up to Macao's handover

合作。2009年葡文系畢業的葉進洲現今長居於葡語國家安哥拉，與朋友在當地合資創業。畢業那年，他獲邀至安哥拉的公司當翻譯，當時不是所有人都看好他到非洲工作。葉進洲說：「因為我在澳大讀葡語、精通葡語，很快贏得了公司信賴。我還利用語言優勢，不斷在當地積累經驗和人脈，有助拓展業務。」

葉進洲 António Ip

培養社科人才

社會科學學院一直與澳門社會的發展緊密聯繫，致力培養有創新意識和社會責任感的學生，其畢業生分佈於各行各業，有些甚至走上創業之路，以其所學和研究服務社會。

1995年畢業於英文傳意課程（傳播系前身）的校友張榮顯，畢業後留校任教13年後，於2009年成立澳門首間研究諮詢機構，現時已是互聯網研究及大數據創業先鋒及實踐者。張榮顯說：「大學時期的課程培養了創新的思維，參加學生組織的活動，也有助我後來帶領團隊；10多年教學及研究經驗的積累，對創業創新起到關鍵的作用。今日，我的公司尤其是在互聯網研究和大數據分析方面，基本上成為引用參考的權威來源。」

張榮顯 Angus Cheong

teacher at Macau Baptist College. She says UM's education model broadened her horizons and benefited her greatly. 'What I have learned from UM professors inspired me to be creative in my own teaching when I became a teacher,' she says. Chan Keng Lim, a graduate of FST and FED, became UM's first PhD graduate in education in 2012. After graduation, he became a mathematics teacher at Pui Ching Middle School Macau and was eventually promoted to the position of vice principal. He says: 'The undergraduate and postgraduate education I received at UM taught me the true meaning of education, which is to light the way for the students.'

Nurturing Chinese-Portuguese Bilingual Talent

Because of Macao's unique history, geographic environment, and cultural and linguistic heritage, the responsibility of nurturing multilingual professionals, particularly those proficient in Portuguese, naturally falls on UM, the leading public comprehensive university in the city. The university launched Portuguese language programmes as early as 1981, when it was just founded. In 1990, the Department of Portuguese was established. After 30 years of development, it is now the largest Portuguese teaching institution outside of Portugal and Brazil.

Before the city's handover in 1999, only Macanese and a handful of Chinese spoke the Portuguese language, and those fluent in the two official languages mostly worked in education or government departments as translators. However, after the handover and the founding of the Macao Special Administrative Region (SAR), the SAR government became increasingly aware of the importance of nurturing bilingual talent. As a result, the number of students applying to translation programmes increased steadily. In recent years, with bilateral trade between China and Portuguese-speaking countries developing rapidly, the Portuguese language has grown increasingly important, and nurturing Portuguese-speaking professionals has become an important strategy for promoting the sustainable development of Macao. António Ip, an alumnus of UM's Department of Portuguese, currently lives in Angola, where he and his friends operate a catering business.

劉少榮（左二）2018年獲澳大頒授榮譽博士學位
Anthony Lau (2nd from left) was conferred an honorary doctorate by UM in 2018

培養工商管理人才

工商管理學院經過30多年發展，為澳門培養了眾多工商業人才，教研成就卓越，更是澳門首所獲得國際商學院聯合會認證、工商管理碩士協會認證的商學院，也是歐洲管理發展基金會正式會員，擁有完善的人才培養體系，培育了超過一萬名畢業生，遍佈世界各地，當中不乏社會中流砥柱，如澳門特區政府官員、立法會議員、高等院校校長、傑出企業家等。

太平洋航空控股有限公司集團創辦人及主席劉少榮1990年獲工商管理碩士學位，他表示在澳大的求學經歷，為他開拓事業打下強心針。另一位在1992年取得會計及金融學士學位的繆子美，現時位居富達基金（香港）有限公司亞洲股票投資總監，她說：「當時大學的課程旨於培養國際通才，課程有助我們發展領導才能。」

繆子美 Victoria Mio

After graduation from UM, he was offered a job as a translator at a company in Angola. While his family and friends were not exactly thrilled about the prospect of him working in an African country, Ip accepted the offer because his eyes were set on bigger goals. 'My proficiency in Portuguese, thanks to UM's quality education, quickly earned me the trust of the company. I used my language skills to my advantage to build a social network in Angola, which helped tremendously when I decided to start my own business,' he says.

Nurturing Social Sciences Talent

FSS is dedicated to nurturing innovative and socially responsible graduates, and its development is closely linked to the development of the Macao society. FSS graduates are distributed across different industries, and some of them have even started their own businesses to give back to society.

Angus Cheong, a UM alumnus who graduated from the English communication programme (the predecessor of the Department of Communication) in 1995, taught at the university for 13 years after graduation. In 2009, he founded Macao's first research consultancy, which is now a leader in internet research and big data analysis. 'The education I received at UM

不同年代有不一樣的人才輩出。2000年畢業於工商管理學院的周可祺，2020年獲英國皇家特許學會之一的英國倫敦銀行與金融學院頒授會士名銜，他表示在澳大的四年學習，為其專業發展奠定了紮實的根基。

擴生源邁向新的發展階段

1999年，澳門回歸祖國，進入新的發展階段。澳大在完成配合過渡期培養人才使命後，增加學科、優化校園設施、提升師資質素和強化研究實力，並推動設置一系列新的學士和碩士課程、調低學費及提供獎學金和財政支援，學生質素不斷提升。

東亞大學創校初期，學生主要來自香港，到了澳門回歸前後，澳大學生已轉為大部分來自本地。對本地高中生來說，澳大曾經並非首選。隨著教研質素提升，加上在2000年及2001年學費下調，澳大成為本地學生的最佳選擇。對招收內地學生時，錄取要求也從高考的二本線提高到一本線。

高水平的大學不能只培養本科生，還要孕育研究生（碩士和博士），為社會輸送高層次人才。澳大從1993年秋起著力招收碩士生，由一個專業增至六個專業，廣受社會歡迎。至1999年，大學已有

周可祺 Danny Chau

20個碩士學位課程，擁有400名碩士生，以及過百名碩士畢業生。澳大不久更開始招收博士生，1997年首名博士生畢業。1999年澳門回歸至今，澳大培養了45,092名各類人才，推動澳門社會經濟發展，貢獻殊深。

helped me develop an innovative mindset. Participating in the activities organised by student organisations honed my leadership skills, which was very useful when I started my own company,' says Cheong. 'More than a decade's experience in teaching and research also played a crucial role in innovation and entrepreneurship. Today, my company has become an authoritative source of data, especially for those whose job involves internet research and big data analysis.'

Nurturing Future Business Leaders

Through 30 years of development, FBA has nurtured many graduates for the local business community. FBA was the first business school in Macao to be accredited by the Association to Advance Collegiate Schools of Business (AACSB) and the Association of MBAs (AMBA). It is also a full member of the European Foundation for Management Development (EFMD). It has a well-developed talent training system and offers programmes at undergraduate, master's, and doctoral levels. Over the years, FBA has graduated more than 10,000 students, who have found employment in different parts of the world. Some of them have become community pillars, serving as government officials, Legislative Assembly members, university heads, and entrepreneurs.

Anthony Lau, founder and chairman of Pacific Air Holdings Limited, obtained his master's degree in business administration from UM in 1990. He credits UM with boosting his confidence about expanding his business. Victoria Mio, director of Asian equities at FIL Investment Management (Hong Kong) Limited, received a bachelor's degree in accounting and finance from UM in 1992. According to her, at the time, UM's courses were designed to nurture internationally competitive generalists, with a focus on leadership skills.

Another alumnus, Danny Chau, graduated from FBA in 2000. In 2020, he was awarded a fellowship by the London Institute of Banking & Finance, one of the institutes in the United Kingdom that has gained a royal charter. He is grateful to UM for the quality education which helped lay a solid foundation for his career development.

澳大新校園興建前的鳥瞰圖（攝於2009年）
A panoramic view of the UM new campus before its construction, in 2009

「四位一體」創新教育模式

澳大多年來在特區政府支持下優化軟硬件，完善人才培養策略，提升競爭力。2009年，在中央政府和澳門特區政府支持下，全國人大常委會通過《全國人民代表大會常務委員會關於授權澳門特別行政區對設在橫琴島的澳門大學新校區實施管轄的決定》，同年澳大新校園奠基。新校園項目體現國家對澳門人才培養的重視，也為澳大帶來了千載難逢的機遇。

胡致遠發明的飛行摩托
The flying motorcycle developed by Huber Hu

Entering a New Stage of Student Enrollment

After the handover and the establishment of the Special Administrative Region, Macao entered a new era, and so did UM. With the transitional period now coming to an end, the university was faced with an urgent need to adjust its mission to suit the new circumstances. The university accomplished this goal by introducing new disciplines, improving campus facilities, enhancing the quality of the faculty team and their research capacity, launching a series of new bachelor's and master's programmes, reducing tuition fees, and providing scholarships and financial aid. The result of these reforms has been a steady increase in both the quantity and quality of students.

During the early days after UEA's founding, most of the students came from Hong Kong. But after Macao's handover, Macao replaced Hong Kong to become the most important source of students for the university. With the steady increase in the quality of teaching and research and the reduction of tuition fees in 2000 and 2001, UM gradually became the favourite choice of local students. Later, the university also raised admission standards for mainland applicants, requiring applicants to reach the admission marks set by first-tier, instead of second-tier, universities in mainland China.

2014年12月20日，國家主席習近平到澳大考察，期間與書院學生討論中華文化。
On 20 December 2014, President Xi Jinping had a discussion about Chinese culture with students in a residential college during his visit to UM.

新校園於2013年11月5日啟用後，澳大從氹仔舊校園一所走讀式的社區型大學逐步提升為書院制綜合型大學，推行融合專業、通識、研習和社群教育的「四位一體」教育模式。澳大現設10所住宿式書院，是亞洲最具規模的住宿式書院系統，書院與學院制度相輔相成，從多方位培養人才。科技學院博士生胡致遠在本科階段住進書院，利用書院創設的實驗環境研發出無人機和電磁炮，他說：「書院對學生的支持，有助學生拓展課餘特長。」

多措施培養高端人才

人才對於澳門邁向產業多樣化舉足輕重。澳大在2015年推出「澳大濠江人才計劃」，至今招攬了一批高層次科研人才，包括來自一流高校的博士生和博士後研究員。

近年，澳大因應社會發展及市場需求不斷完善學科建設，重視人才培養在社會的可應用性，例如在2019年增設工

An outstanding university should provide quality education at both undergraduate and postgraduate levels, for society needs different types of talent. That is why in 1993, UM increased the number of master's programmes from one to six, which was greeted with an enthusiastic response. By 1999, the university already offered master's programmes in 20 major areas, with 400 master's students enrolled, and over 100 graduates with a master's degree. Soon, the university began doctoral admission and graduated the first doctoral student in 1997. Since 1999, UM has produced 45,092 graduates, who have made significant contributions to social and economic development in Macao.

An Innovative '4-in-1' Model of Education

Over the years, with the support of the Macao SAR government, UM has constantly improved its 'hardware' and 'software', including talent development strategies, in order to enhance its competitiveness. In 2009, with the support of the central and Macao SAR governments, the Standing Committee of the National People's Congress adopted a bill that proposed authorising the Macao SAR to exercise jurisdiction over UM's new

學院 Faculties	研究機構 Institutes
人文學院 Faculty of Arts and Humanities	人文社科高等研究院 Institute of Advanced Studies in Humanities and Social Sciences
工商管理學院 Faculty of Business Administration	應用物理及材料工程研究院 Institute of Applied Physics and Materials Engineering
教育學院 Faculty of Education	中華醫藥研究院 Institute of Chinese Medical Sciences
健康科學學院 Faculty of Health Sciences	協同創新研究院 Institute of Collaborative Innovation
法學院 Faculty of Law	微電子研究院 Institute of Microelectronics
科技學院 Faculty of Science and Technology	澳門研究中心 Centre for Macau Studies
社會科學學院 Faculty of Social Sciences	亞太經濟與管理研究所 Asia-Pacific Academy of Economics and Management
榮譽學院 Honours College	

書院
Colleges

曹光彪書院 Chao Kuang Piu College	呂志和書院 Lui Che Woo College
鄭裕彤書院 Cheng Yu Tung College	馬萬祺羅柏心書院 Ma Man Kei and Lo Pak Sam College
張崑崙書院 Cheong Kun Lun College	滿珍紀念書院 Moon Chun Memorial College
蔡繼有書院 Choi Kai Yau College	紹邦書院 Shiu Pong College
霍英東珍禧書院 Henry Fok Pearl Jubilee College	何鴻燊東亞書院 Stanley Ho East Asia College

澳大現設的學院、研究機構和書院
Faculties, institutes and colleges at UM

campus on Hengqin Island. A groundbreaking ceremony for the new campus was held later in the same year. The approval of the new campus brought unprecedented opportunities for UM. It also shows that the central government attaches great importance to higher education development in Macao.

On 5 November 2013, the new campus became operational, providing UM with more space to implement its unique '4-in-1' education model that consists of discipline-specific education, general education, research and internship education, and peer and community education. On the new campus, UM established Asia's largest residential college (RC) system, which comprises ten colleges. The RCs and the faculties work in concert to help students achieve well-rounded development. Huber Hu, a doctoral student in FST, moved into an RC during his undergraduate years. In the RC's laboratory, he successfully developed unmanned aerial vehicles and electromagnetic guns. He says, 'The RC's support helps students develop extracurricular interests.'

A Multi-pronged Approach to Nurturing High-level Talent

Human capital plays a pivotal role in Macao's effort to diversify its economy. To support this endeavour, UM launched the UM Macao Talent Programme in 2015, which has attracted a number of high-quality researchers, some of whom are doctoral students and postdoctoral fellows from world-class universities.

商管理博士課程、高級管理人員工商管理碩士課程、數據科學碩士學位課程。並正積極籌備新的應用型公共行政學博士學位課程、教育博士學位課程、微電子碩士學位課程、金融科技碩士學位課程，旨在培養相關領域的高層次人才。

在「3+3+3+3」的新科研佈局下，澳大積極推動跨學科、跨領域的創新人才培養。2019年已開辦數據科學碩士學位課程，培養大數據領域的新型專業人才。未來還將繼續推動與清華大

澳大在2015年推出「澳大濠江人才計劃」，引進高層次科研人才。
UM launched the UM Macao Talent Programme in 2015 to attract outstanding researchers

學等一流學府成立的聯合博士後培養項目，冀為社會培養更多優秀人才。

「不惑新航，揚帆追夢！」經過40年淬礪奮發，澳大正進入前所未有的發展時期。展望未來，校長宋永華教授說：「澳大要為澳門多元產業發展培育更多高水平的創新人才，為澳門經濟適度多元發展貢獻應有的力量；同時也要培養具有家國情懷、國際視野、全球競爭力和世界擔當四大核心素養的人才，以建設澳門，服務國家，貢獻人類！」

掃二維碼
觀看「揚帆追夢－澳門大學40年」短片
Scan the QR code for the video 'Set Sail for New Horizons on UM's 40th Anniversary'

In recent years, the university has been improving its curriculum based on the changing needs of the fast-developing society in order to produce graduates who can make a meaningful contribution to society. In 2019, the university launched a doctoral programme in business administration, a master's programme in business administration for senior executives, and a master's programme in data science. It is now actively preparing for the launch of several other new programmes, including a doctoral programme in applied public administration, a doctoral programme in education, a master's programme in microelectronics, and a master's programme in financial technology. In addition, with a '3+3+3+3' new research blueprint in place, the university actively trains multidisciplinary talent. In 2019, UM launched a master's programme in data science to nurture big data talent. In the future, UM will continue to launch joint post-doctoral training programmes with Tsinghua University and other world-class universities.

As the anniversary slogan, 'Set sail anew on the ruby jubilee', implies: UM is on the threshold of a new era. Looking ahead, UM Rector Yonghua Song says: 'We want to nurture innovative, high-calibre graduates to support economic diversification in Macao. But equally important, we want to produce graduates with a love for their homelands, a global mindset, international competitiveness, and a sense of social responsibility. We hope our graduates can use their talents and strengths to develop Macao, serve the country, and contribute to humanity. '

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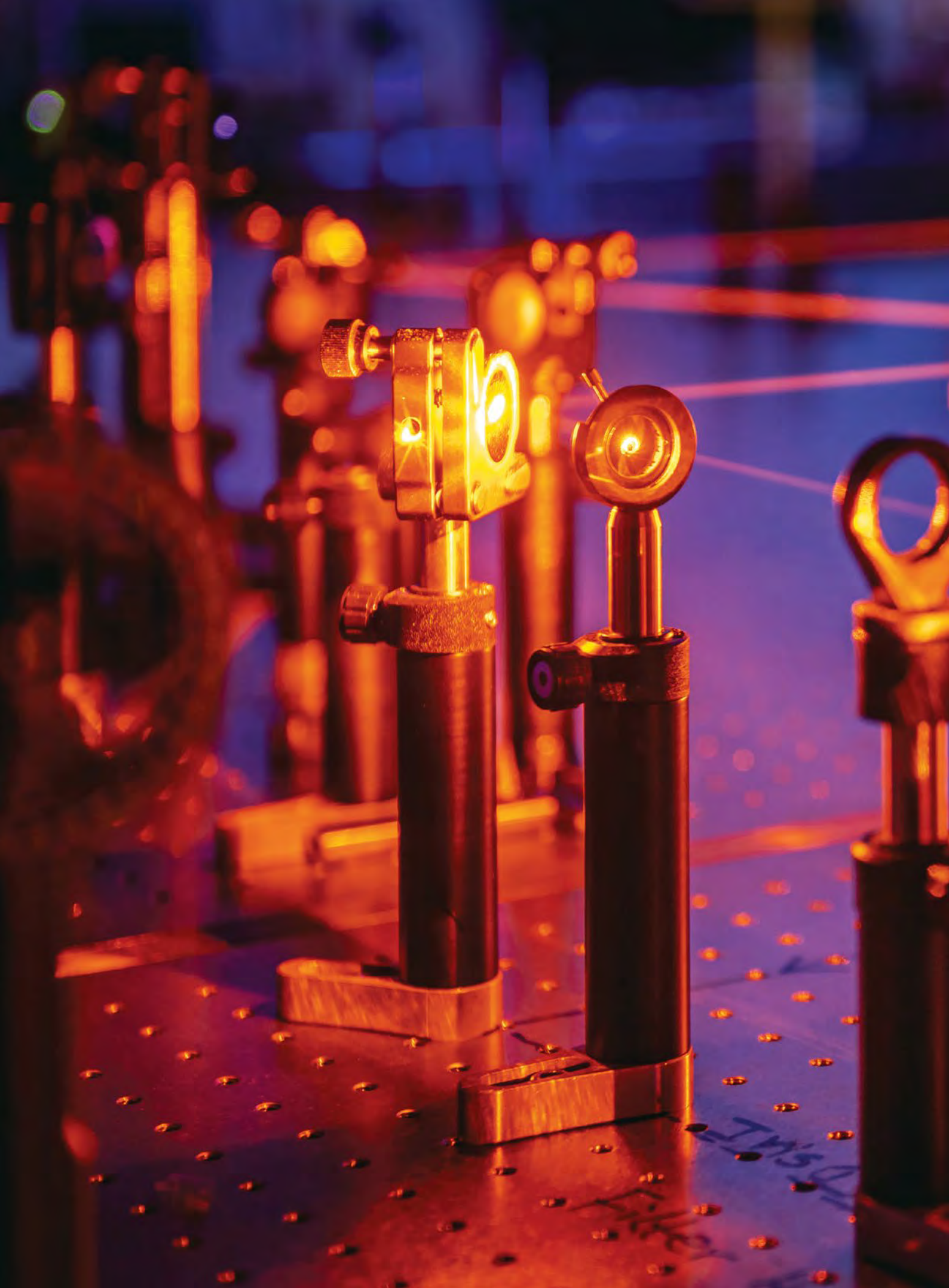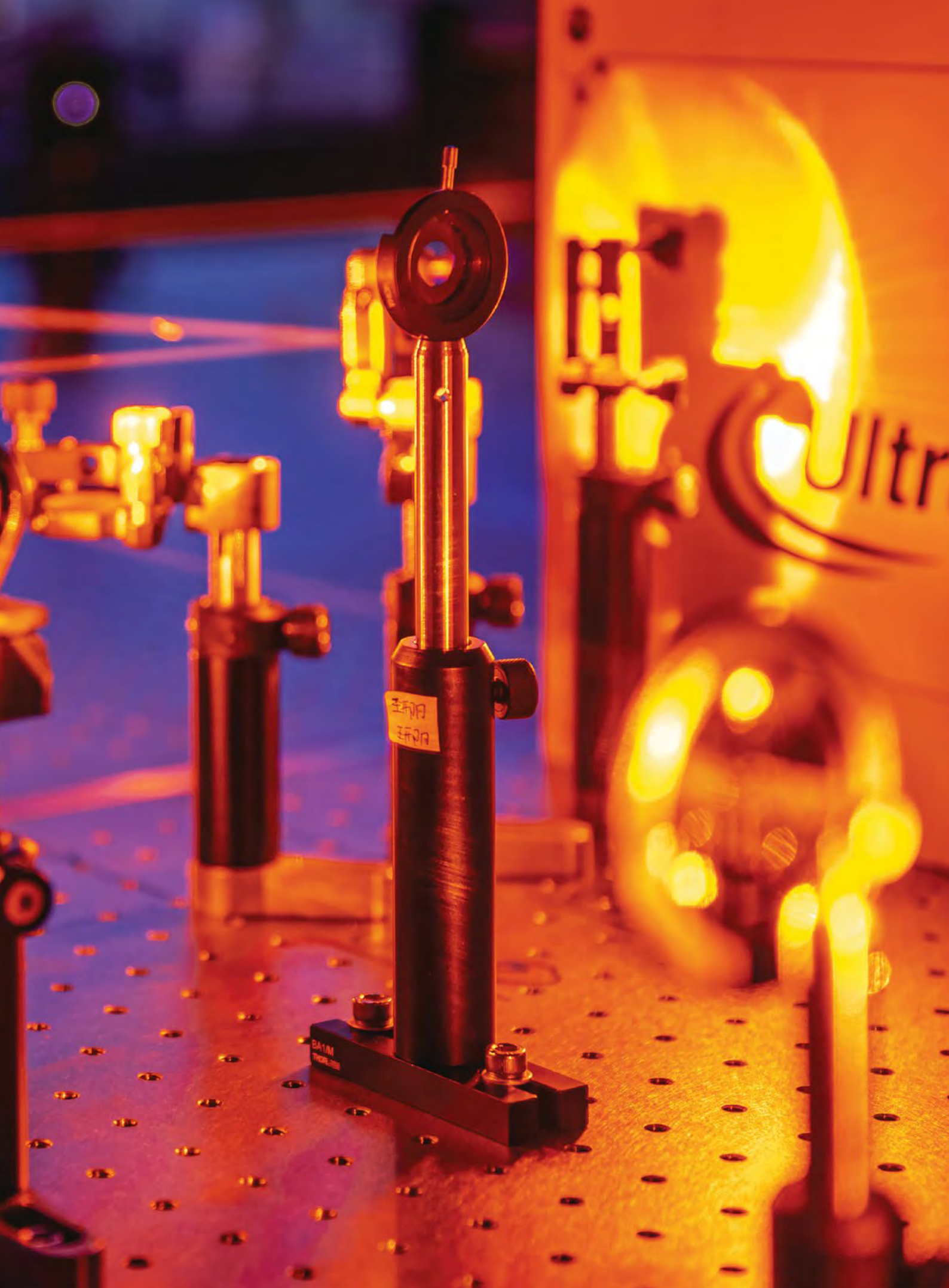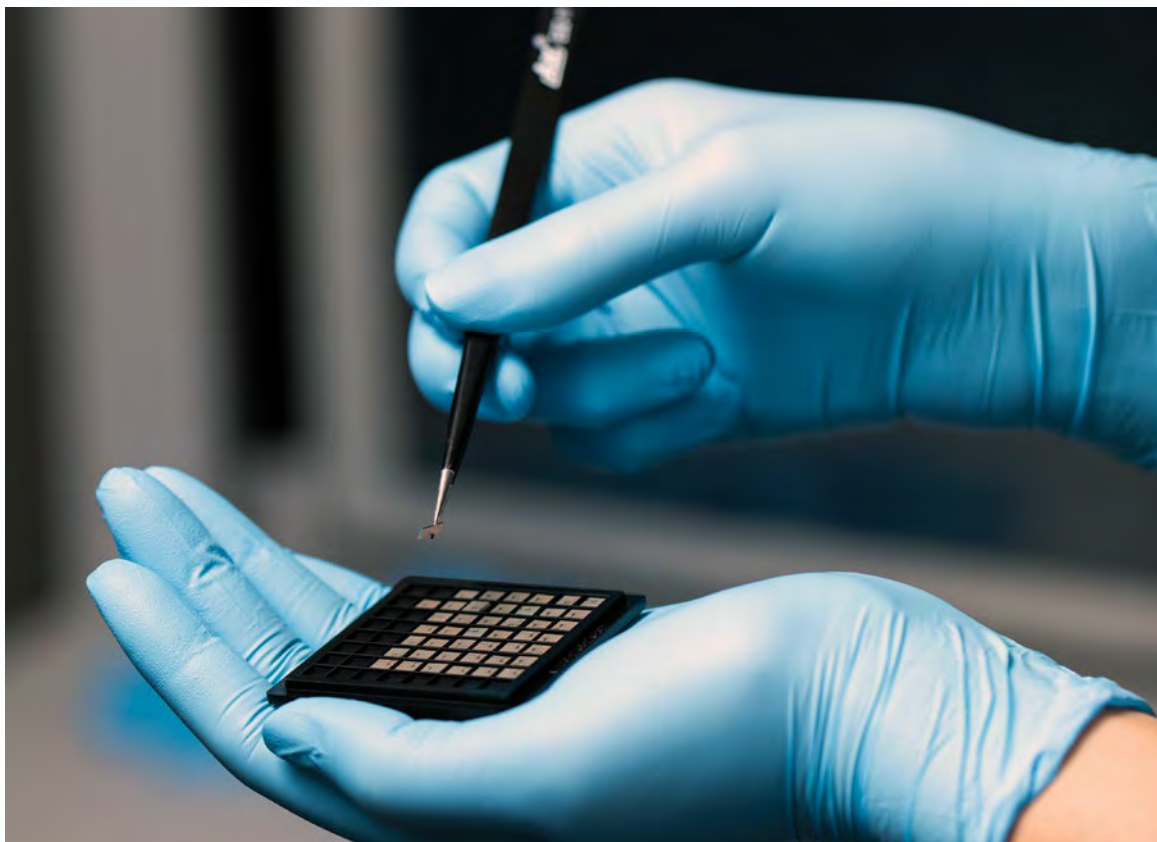
推動科技成果轉化
Promoting Technology Transfer

文/葉浩男・圖/編輯部，部分由受訪者提供
English Translation / Ruby Chen & Anthony Sou・Photo / Editorial Board & some provided by the interviewees

澳門大學成立以來的科研故事，是澳門過去數十年科技發展的重要寫照。由一無所有到初見成果、從不斷突破到走向產業化，一代代澳大人不懈研發嶄新科技，並致力將它們轉化為改善人們生活的產品和服務。

The development of scientific research at the University of Macau (UM) since its founding is a mirror of technological advances in Macao over the past decade. Starting from scratch, generations of UM researchers have worked tirelessly to develop new technologies and transform them into products and services that improve people's lives.

成果走向市場

近年，許多澳大團隊正與粵港澳大灣區各地的機構和企業合作，將科技成果推向市場。智慧城市、微電子和先進材料領域的一批較成熟的研究項目將透過珠海澳大科技研究院在橫琴新區建立的產學研示範基地，開展成果產業化研究和工作。

在橫琴產學研基地，一批科技成果正在對接當地政府和企業資源積極開展商業化過程，其中包括數字型微流控檢測芯片快速檢測套裝「病毒獵手」；利用水泥緩釋出納米顆粒複合而成的特種水凝膠，可以作為中間原料製成吸水膨脹劑，可望應用到農田保水、沙漠治理等方面，團隊正跟內地的企業合作把產品推出市場；有助破損皮膚組織再生，以杜仲研製出的敷料藥物「金創藥」，團隊已在澳大創科有限公司規範引導下成立公司。

Commercialisation of Research Results

In recent years, UM researchers have been working with institutions and companies in the Guangdong-Hong Kong-Macao Greater Bay Area to commercialise their research results. Well-developed research projects from UM, particularly those in the fields of smart city technology, microelectronics, and advanced materials, will be incubated at a centre for industry-academia collaboration in Hengqin New Area established through the Zhuhai UM Science and Technology Research Institute.

At the Hengqin centre, a number of research results are being commercialised through local government and companies. These include 'Virus Hunter', a digital-microfluidic-chip-based system for rapid virus detection; special hydrogels made of cement-derived nanoparticles that can be used as intermediate raw materials to make water-absorbing swelling agents and have the potential to be applied in farmland water retention and desert management; and 'Golden Wound Dressing', a product based on special sugar molecules from the bark of Eucommia ulmoides (commonly known

澳門大學—華發集團聯合實驗室揭牌儀式暨珠海澳大科技研究院啟用儀式

The inauguration ceremony for the UM-Huafa Group Joint Laboratory and Zhuhai UM Science & Technology Research Institute

澳大與澳門發展及質量研究所向非洲兩所大學捐贈呼吸機原型
The ventilator prototypes that UM and the Institute for the Development and Quality, Macau, jointly donated to two African universities

特種水凝膠可以作為中間原料製成吸水膨脹劑
Special hydrogels can be used as intermediate raw materials to make water-absorbing swelling agents

3D打印杜仲創傷敷料
3D-printed wound dressing that contains sugar molecules derived from the hardy rubber tree

as hardy rubber tree) that can help damaged skin tissue regenerate. The 'Golden Wound Dressing' team has established a company under the guidance of UMTec Limited.

Some UM-developed technologies have even found applications overseas. For example, during the 2020 COVID-19 pandemic, the university and the Institute for the Development and Quality, Macau, donated ventilator prototypes to universities in Angola and Mozambique, to help medical professionals in these two countries treat respiratory diseases.

澳大的科技成果也轉移到世界不同角落、造福各界。例如在2020年新冠肺炎疫情期間，大學與澳門發展及質量研究所將其研發的呼吸機原型贈予安哥拉和莫桑比克的大學，協助兩國醫療人員治療和舒緩呼吸系統疾病。

科研從零開始

今日碩果纍纍，實在得來不易。正如澳大校長宋永華教授指出：「澳門科技發展起步晚、技術相對差，體量小，但澳大在中醫藥質量、智慧城市、微電子芯片設計、城市物聯網、先進材料、精準醫學等方面還是取得了可喜成績。」

1989年，澳大前身東亞大學的教學委員會設立研究委員會，象徵大學的研究工作正式開始。1993年，大學設立科研基金，同年科技學院的科學和技術研究中心開始運作，推出15項研究和發展計劃。當時澳大科研雖然剛剛起步，但已經和其他院校積極合作，例如在1995年與清華大學、北京大學、中國科學院轄下的研究所等開展了一系列科研項目。同年，由微電子專家、現任澳大副校長馬許願教授帶領的團隊採用互補式金屬氧化物半導體技術研發出首款芯片「UMChip」，並在國際研討會公佈，是澳大科研的重大突破。

全球首部中葡電子辭典「中葡通」
PCT, the world's first Chinese-Portuguese electronic dictionary

澳大憑「電度表脈衝轉換器」在1999獲得第一個科技專利
UM received its first patent in 1999 for the watt-hour metre pulse converter

Starting from Scratch

For a university that started scientific research from scratch, these are hard-won achievements. As UM Rector Yonghua Song points out: 'Macao started relatively late in science and technology development, lagging behind in both quality and scale. However, UM has achieved pleasing results in various fields, including Chinese medical sciences, smart city technology, microelectronic chip design, internet of things, advanced materials, and precision medicine. '

In 1989, the Teaching Committee of the University of East Asia, the predecessor of UM, established a Research Committee, signalling the official start of the university's research work. In 1993, the university established a scientific research fund. In the same year, the Science and Technology Research Centre under the Faculty of Science and Technology became operational and launched 15 research and development plans. Although UM was still in its infancy in research development at the time, it was already actively working with other institutions on scientific research projects. In 1995, UM launched a series of research projects with Tsinghua University, Peking University, and research institutes under the Chinese Academy of Sciences. In the same year, a team led by Prof Rui Martins, a microelectronics expert and a vice rector of UM, developed the first chip, 'UMChip', using complementary metal-oxide-semiconductor technology, and launched it at an international seminar. It was a major breakthrough in the university's research efforts.

澳大在1999年發佈中葡通
In 1999, UM launches PCT, the world's first Chinese-Portuguese bilingual audio dictionary.

到了1999年澳門回歸祖國時，澳大已有一些科技成果，包括全球首部中葡電子辭典「中葡通」和「電度表脈衝轉換器」，後者在同年12月獲中國國家知識產權局授予專利權，是澳大首個科技發明專利。至2020年底，澳大已有近100項發明專利，數量是10年前的10倍，遍及生物醫學、中醫藥、計算機科學、電氣電子、機械、微電子、微流控等領域。

回歸以來飛躍發展

澳大科研發展離不開澳門政權移交後特區政府對科技創新的大力投入。另一方面，澳大2014年全面遷至位於橫琴島的現校園，科研環境和設施大為躍升，也為其科技成果轉化締造堅實的新基礎。

2004年，澳門科學技術發展基金成立，歷年來支持澳大大量科研項目，當中不少甚具產業化潛力。2011年，澳

By the time Macao returned to the motherland in 1999, UM had already developed the world's first Chinese-Portuguese electronic dictionary 'PCT', and a watt-hour metre pulse converter. The latter earned UM a patent from China National Intellectual Property Administration in December of the same year, which is the university's first-ever patent. By the end of 2020, the number of patents held by UM had increased ten times to nearly 100, covering such fields as biomedicine, traditional Chinese medicine, computer science, electrical and electronics engineering, machinery, microelectronics, and microfluidics.

Rapid Development since the Handover

The rapid progress of scientific research at UM would not have been possible without the Macao government's heavy investment in technological innovation after the city's handover. In 2014, UM moved to the current campus on Hengqin Island. The improved scientific research environment and facilities on the new campus laid a solid new foundation for technology transfer.


澳大在2020年澳門科學技術獎囊括近七成獎項
UM wins nearly 70 per cent of the Macao Science and Technology Awards in 2020

門特區政府設立三類科學技術獎，分別為自然科學獎、技術發明獎、科技進步獎。在2012年舉行的首屆頒獎禮中，澳大獲九項科學技術獎，以及19名博士及碩士研究生獲得「研究生科技研發獎」，為本澳高等院校獲獎數量之冠。其中，澳大成員獲頒六項技術發明獎中的四項，該技術發明獎是授予「運用科學技術知識發明出具有市場價值的新產品、新技術或新工藝的人士」。截至2020年底，歷屆頒發的28項技術發明獎中有20項由澳大學者奪得，足見澳大科研的市場潛力。

微電子科研成果

澳大在2003年成立模擬與混合信號超大規模集成電路實驗室，2010年升格為國家重點實驗室，成為澳門第一個工程學領域的國家重點實驗室，由澳大副校長馬許願教授出任創始主任，目前該

In 2004, the Macao Special Administrative Region (SAR) government established the Science and Technology Development Fund. Over the years, the fund has supported a large number of scientific research projects from UM, many of which have great industrialisation potential. In 2011, the SAR government established three types of science and technology award, namely the Natural Science Award, the Technological Invention Award, and the Science and Technology Progress Award. In the first award ceremony held in 2012, UM won nine Science and Technology Awards and 19 Scientific and Technological R&D Awards for Postgraduates, eclipsing all other higher education institutions in Macao. Of the six recipients of the Technological Invention Award, which aims to recognise 'individuals who use scientific and technological knowledge to invent new products, new technologies, or new processes with market value', four were from UM. By the end of 2020, 20 out of the 28 Technological Invention Awards presented in the previous years were won by UM scholars, which shows the market potential of UM's scientific research.
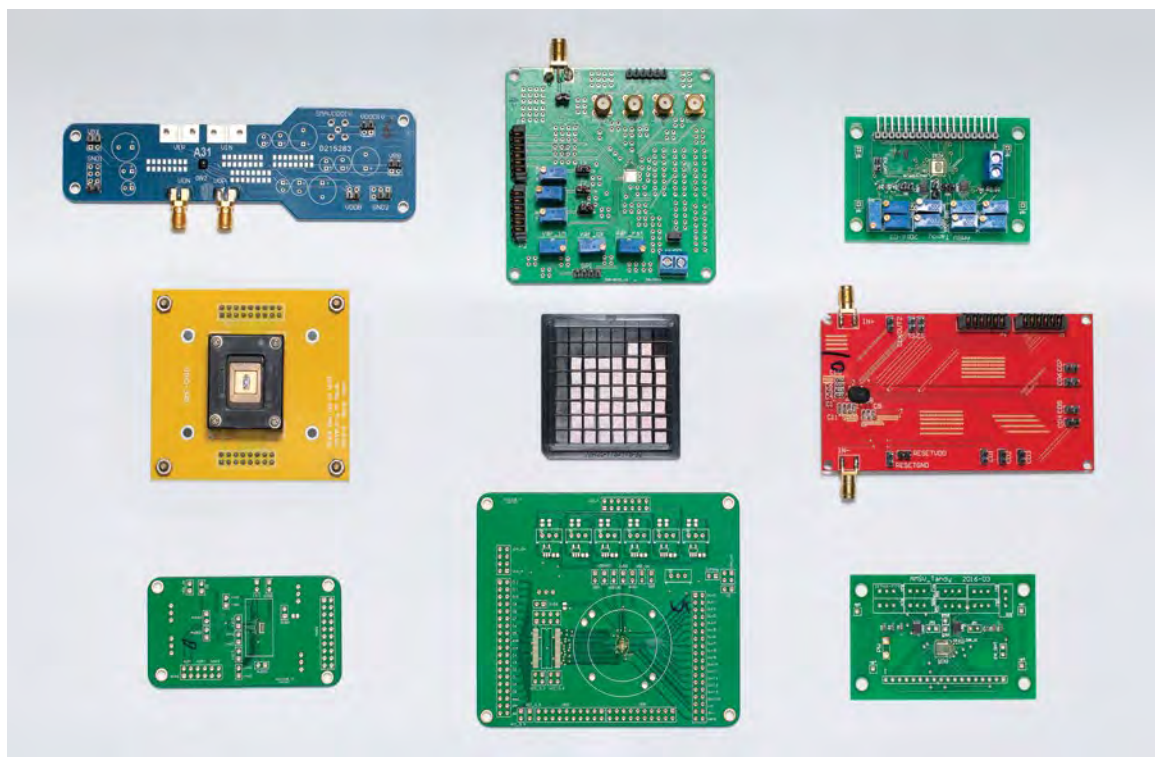
澳大研發的多代芯片
Different versions of UMChips

數字型微流控檢測芯片快速檢測套裝「病毒獵手」
Virus Hunter, a digital-microfluidic-chip-based system for rapid virus detection

基於微流控技術的斑馬魚篩選系統
A zebrafish screening system based on microfluidic technology

團隊的微電子研究成果已達國際一流。在2019年國際固態電路研討會上，來自該實驗室的芯片論文發表量達全球第二，僅次於Intel（英特爾）。

微電子研究團隊為澳大開創了多個第一次。2001年，澳大參與創辦了澳門第一間集成電路設計研發公司——希迪亞微電子（澳門）有限公司（現為新思科技）。2009年，現任微電子研究院副院長麥沛然教授為主力的團隊憑「用於多制式接收器的雙階段頻道選取技術」，為澳大取得首項在美國註冊的科技專利。2011年，實驗室的三位學者余成斌、麥沛然、冼世榮更藉「高性能模擬與混合信號集成電路技術的設計與開發」這一芯片設計項目，獲頒2011年度國家科學技術進步獎二等獎，是首次有澳門科研人員獲此國家級獎項。三人均從小在澳門接受教育，並在澳大獲博士

Microelectronics Research

The Analog and Mixed-Signal VLSI Laboratory was established in 2003. When it was elevated to the status of a state key laboratory in 2010, it became Macao's first state key laboratory in the field of engineering, with UM Vice Rector Prof Rui Martins serving as its founding director. Today, the laboratory is a global leader in microelectronics research. At the 2019 International Solid-State Circuits Conference, the number of chip-related papers published by the laboratory ranked No 2 in the world, second only to Intel.

The microelectronics research team has created a notable record of 'firsts' for UM. In 2001, UM participated in the founding of Chipidea, Macao's first integrated circuit company and the predecessor of the current Synopsys. In 2009, a team led by Prof Mak Pui In, the current associate director of the university's Institute of Microelectronics, obtained UM's first patent from the United States for a project titled 'Two-Step Channel Selection for Wireless

澳大已完成美國藥典及歐洲藥典等10多項中藥標準

UM has completed more than ten Chinese medicine standards, including those in the *US Pharmacopeia* and the *European Pharmacopeia*.

學位，證明澳門人在澳門也能創出前沿的科技成果。

近年，微電子研究團隊的成員在大學支持下成立企業，將科技成果產業化。其中，2018年成立的迪奇孚瑞生物科技有限公司是澳大首間衍生公司，由澳大學者和畢業生組成，在2020年新冠病毒肺炎爆發初期，該公司運用澳大的芯片專利技術，推出數字型微流控檢測芯片快速檢測套裝「病毒獵手」，可於30分鐘內完成病毒檢測。

中醫藥科研成果

中醫藥是澳大科研另一亮點。澳大的中醫藥研究團隊開發了不少創新藥物、健康產品，以及參與制訂歐盟和美國藥典中藥標準，為中醫藥走進國際市場創造有利條件。澳大在2002年成立中華醫藥研究所（現稱中華醫藥研究院）。

Transmitter Front-Ends'. In 2011, Prof Mak, along with two other faculty members of the laboratory, namely Prof U Seng Pan and Prof Sin Sai Weng, received a second prize of the State Scientific and Technological Progress Award, for their project on the design and development of high-performance analogue and mixed-signal integrated circuit technology. It was the first time that researchers from Macao received this prestigious national award. The fact that the three recipients were all educated in Macao, and received doctoral degrees from UM, made the good news even more encouraging for the local scientific community.

In recent years, the microelectronics research team has established several companies to facilitate technology transfer. Digifluidic, a biotechnology company established in 2018, was the first company for this purpose, with UM scholars and alumni as the core members. After the novel coronavirus outbreak in 2020, the company used a UM-patented technology to successfully develop a digital-microfluidic-chip-based system called 'Virus Hunter', which can complete the virus detection process within 30 minutes.

澳大獲國家批准於2011年設立模擬與混合信號超大規模集成電路國家重點實驗室及中藥質量研究國家重點實驗室

In 2011, UM receives approval from the central government to establish two state key laboratories, namely the State Key Laboratory of Analog and Mixed-Signal VLSI, and the State Key Laboratory of Quality Research in Chinese Medicine.

在研究院時任院長王一濤教授率領的澳門中醫藥學者團隊努力下,中藥質量研究國家重點實驗室在2011年揭牌,是全國首個中醫藥領域的國家重點實驗室。2012年,澳大與美國藥典委員會就中藥標準聯合實驗室簽署協議,成為全球首間與該委員會建立中藥質量標準開發合作實驗室的高等院校。目前,澳大已完成美國藥典及歐洲藥典等10多項中藥標準。

澳大的中醫藥研究在本地、全國和國際場合屢獲殊榮。2016年,澳大與北京協和醫學院—清華大學醫學部等完成的「中草藥DNA條形碼物種鑑定體系」獲得國家科學技術進步獎二等獎。2019年,澳大研發的「創新中藥系列產品」和「基於微流控技術的斑馬魚篩選系統」在第47屆日內瓦國際發明展獲頒「發明金獎」,前者包括中藥固液膠囊和新型顆粒劑兩個系列共六個產品,是澳門首個獲此殊榮的「現代中藥」創新產品。

Achievements in Chinese Medical Sciences

Chinese medical sciences is another research area in which UM has achieved impressive results. For instance, the university has developed many innovative drugs and health products, and has participated in the development of pharmacopoeial conventions for Chinese medicine in Europe and the United States, creating favourable conditions for Chinese medicine to enter the international market. In 2002, UM established the Institute of Chinese Medical Sciences (ICMS). With the joint effort of a team of Chinese medicine scholars in Macao, led by Prof Wang Yitao, then director of ICMS, the State Key Laboratory of Quality Research in Chinese Medicine (SKL-QRCM) was officially inaugurated in 2011 and became the first state key laboratory of Chinese medicine in China. In 2012, UM signed an agreement with the United States Pharmacopeial Convention for the establishment of a joint laboratory. It was the first time that the organisation collaborated with a higher education institution in establishing quality standards for Chinese medicine. So far, UM has completed more than ten Chinese medicine standards, including those in the *US Pharmacopeia* and the *European Pharmacopeia*.

澳門首台自動駕駛巴士在澳大校園啟用
Macao's first autonomous bus becomes operational on the UM campus

近年，澳大更聯合北京大學天然藥物及仿生藥物國家重點實驗室和粵澳合作中醫藥科技產業園，共同建立「中華醫藥創新科技轉移平台」。在粵港澳大灣區發展機遇下，澳大通過打造橫琴產學研示範基地以及聯動粵澳合作中醫藥科技產業園，推動中醫藥研發在橫琴的佈局和發展，並努力與大灣區知名藥企推進經典名方與配方顆粒的研發、註冊和產業轉化，合力推動中醫藥標準化與國際化。

智慧城市物聯網科研成果

澳大在智慧城市物聯網方面的科研也日趨成熟，2010年澳大教授和內地專家組成團隊，開展「物聯網基礎理論及設計方法研究」項目，獲國家重點基礎研究發展計劃（973計劃）立項和資助。2018年，澳大獲國家科學技術部批准設立智慧城市物聯網國家重點實驗室，由現任校長、國際知名電力系統專家宋永華教授出任主任。

UM has won numerous local, national, and international awards for its achievements in Chinese medicine research. In 2016, a research project using DNA barcoding technology to identify the species of medicinal plants, conducted by UM, Peking Union Medical College, and several other institutions, received a second prize of the State Scientific and Technological Progress Award. In 2019, two inventions developed by a group of researchers from the SKL-QRCM—one is a series of innovative Chinese herbal products and the other is a zebrafish screening system based on microfluidic technology—won gold awards at the 47th International Exhibition of Inventions of Geneva. The former project included six products in two forms: solid-liquid capsule form and granule form. It was the first time that a modern Chinese herbal product from Macao won this award.

In collaboration with Peking University's State Key Laboratory of Natural and Biomimetic Drugs and the Traditional Chinese Medicine Science and Technology Industrial Park jointly established by Guangdong and Macao (the Industrial Park), UM has established a platform for the commercialisation of new technologies in Chinese medicine. Seizing the opportunities brought

創新創業中心獲批為「國家級眾創空間」

The Centre for Innovation and Entrepreneurship receives approval to join China's national system of co-working space

澳大獲國家批准於2018年設立第三個國家重點實驗室：智慧城市物聯網國家重點實驗室

In 2018, UM receives approval from the central government to establish its third state key laboratory, namely the State Key Laboratory of Internet of Things for Smart City.

實驗室成立兩年來，開拓了不少緊扣澳門所需的科研，其中包括由實驗室主導、眾多企業和機構合力開展的「協同智能驅動的無人駕駛關鍵技術與平台」，2020年澳門首台自動駕駛巴士在澳大校園啟用，用以收集行駛數據作分析，為自動車輛將來在澳門的公共道路行駛做好準備。宋永華說：「開發自動駕駛車輛技術已趨向世界性潮流，澳大會以具影響力和創新的重點研究成果轉化，為澳門乃至大灣區的智慧城市的大眾運輸寫下新的篇章。」

完善智慧產權管理及支援創企

近年，澳大積極進一步推動科研成果轉化為有實際作用的產品和服務，其中一步是建立完整的智慧產權管理制度。2018年，澳大成立研究服務及知識轉移辦公室。此外，由澳大全資擁有的澳大創科有限公司在2019年改組，目前專門負責澳大智慧財產權的管理和產業化。

澳大亦著力鼓勵與科研相關的創業。2017年設立創新創業中心，2018年迎來首批創業團隊入駐孵化，這些團隊大部分均涉及科技成果的轉化。2019年初，在澳大發展基金會支持下，首批20支入駐團隊獲頒起步資

高性能鋅－空氣電池
High-performance zinc-air batteries

about by the rapid development of the Guangdong-Hong Kong-Macao Greater Bay Area, the university has actively promoted Chinese medicine research and development (R&D) in Hengqin by establishing a centre for industry-academia collaboration in the area and working with the Industrial Park.UM also collaborates with well-known pharmaceutical companies in the Greater Bay Area to promote R&D, registration, and industrialisation of granules based on classic formulas in traditional Chinese medicine, in order to promote the standardisation and internationalisation of Chinese medicine.

Achievements in Smart City Development and Internet of Things

In the field of internet of things for smart city development, UM has also made great progress. In 2010, a team of UM professors and mainland experts initiated a project titled 'The Study of the Fundamental Theories and Design Methodologies on the Internet of Things'. The project was approved and funded by the Ministry of Science and Technology of China under the '973 Programme' (also known as the National Basic Research Programme). In 2018, UM received approval from the Ministry of Science and Technology to establish the State Key Laboratory of Internet of Things for Smart City. The laboratory is headed by Prof Yonghua Song, current rector of UM and an internationally renowned expert in power systems.

Since its establishment, the laboratory of internet of things has carried out a series of research projects that aim to address some of the pressing needs of Macao. One of the projects is titled 'Key Technologies and Platforms for Collaborative Intelligence-driven Autonomous Vehicles', which was jointly conducted with companies and institutions outside the university. The project bore fruit in 2020, with the first autonomous bus in Macao becoming operational on UM's campus on a trial basis. During this period, data will be collected for analysis in preparation for future testing on public roads in Macao. 'Developing autonomous vehicle technologies has become a global trend,' says Prof Song. 'UM will write a new chapter in public transport for smart city development in Macao and the Greater Bay Area by commercialising key research results that are impactful and innovative.'

（由上至下）徐仁和教授及潘全威教授團隊、許冠南教授團隊、劉子銘教授團隊。

(Top to buttom) Prof Xu Renhe and Prof Poon Chuen Wai's teams, Prof Hui Kwun Nam and his team, Prof Liu Tzu-Ming and his team

Perfecting Intellectual Property Management and Supporting Tech Startups

A key step to transforming research results into useful products and services is establishing a sound intellectual property management system. In 2018, UM established the Research Services and Knowledge Transfer Office. In addition, UM has a wholly-owned subsidiary, UMTec Limited, which was restructured in 2019, to take care of the management and commercialisation of the university's intellectual property.

UM also supports research-based startups. In 2017, the university established the Centre for Innovation and Entrepreneurship (CIE). In 2018, the centre welcomed the first batch of entrepreneurial teams, most of which were in the process of commercialising the university's research results. In early 2019, with the support of the University of Macau Development Foundation, CIE awarded initial funds to the first 20 entrepreneurial teams incubated in the centre, two of which deserve special mention. One is led by Prof Xu Renhe in the Faculty of Health Sciences (FHS), and has developed a technology that enables storage of stem cells at room temperature. The other, led by Prof Poon Chuen Wai in the same faculty, works on a series of innovative protein molecule detection products and services for clinical and research applications. The two teams have won numerous awards at regional and international competitions for their projects, and have even been approached by interested investors. Currently, they are discussing the possibility of collaboration with medical institutions in the Greater Bay Area.

Other notable examples of successful incubation through CIE include two teams, led by Prof Hui Kwun Nam in the Institute of Applied Physics and Materials Engineering, and Prof Liu Tzu-Ming in FHS, respectively. With CIE's support, Prof Hui, along with some postgraduate students and alumni, established Olaite Energy Technology Company Limited (Companhia de Tecnologia de Energia Olaite, Limitada), which specialises in developing safer and environmentally friendly batteries with a higher energy density. The other company, co-founded by Prof Liu Tzu-Ming and his team, is named 'Catydid'. The company has developed a blood fluorometre that allows medical professionals to measure the fluorescence in the blood samples to help detect serious illnesses, such as sepsis, shock, kidney failure, and heart failure, at an early stage.

助。在首批入駐創新創業中心的孵化團隊中，健康科學學院徐仁和教授帶領的「幹細胞常溫運輸系統」團隊和健康科學學院潘全威教授帶領的「對向臨床和研究市場的新一代蛋白質分子檢測產品和服務」團隊，在多個國際性和地區性的創業大賽中屢獲獎項及投資人青睞，正與粵港澳大灣區內的醫療機構探討落地合作。

應用物理及材料工程研究院的許冠南教授和研究生及畢業生組成的團隊先後通過創新創業中心成立澳萊特能源科技有限公司，希望不斷研發更安全、高能和環保的新型電池。另一位健康科學學院副教授劉子銘和團隊通過創新創業中心共同創辦名為「看透你Catydid」的科技企業。該公司成員開發的血液螢光儀，可以讓醫療人員看透血液裏面的螢光，有助及早發現敗血症、休克、腎衰竭、心臟衰竭等重症。劉教授預計2021年把這台機器先做一、兩台原型機，經醫院試驗確認安全性後，再於橫琴的產業園作技術轉化。

澳大形成了結合科技和人文的「3+3+3+3」為骨幹的研究戰略佈局
UM has formulated a '3+3+3+3' research strategic research blueprint to encourage interdisciplinary collaboration

Prof Liu hopes to build one or two prototypes in 2021, and then proceed to technology transfer in the industrial park in Hengqin after the safety of the machine has been assessed in clinical trials.

新佈局助研究發展

澳大注重學術研究和科技創新，在科學和人文社科領域取得了重大的貢獻。根據國際論文資料庫ISI Web of Science顯示，高端科研期刊論文發表數目由2007年的77篇增至2020年的2,025篇，2020年澳大論文獲引用超過42,292次。

澳大形成結合科技和人文的「3+3+3+3」為骨幹的新研究戰略佈局，鼓勵跨學科合作，打破學科壁壘。在研究策略部署下，澳大部分應用研究已具備較好的市場應用前景，開始邁向市場實踐和產業化階段。當前澳門經濟急需轉型，科技發展更見重要，澳大作為澳門唯一的綜合性公立大學，全力推動科技成果轉化，促進澳門產業多元化的發展。

New Research Blueprint

UM attaches great importance to academic research and technological innovation, and has made significant contributions to the fields of science and humanities. According to statistics from the ISI Web of Science, the number of UM papers published in prestigious scientific journals increased from 77 in 2007 to 2,025 in 2020, with more than 42,292 citations in 2020.

The university has formulated a '3+3+3+3' strategic research blueprint to encourage interdisciplinary collaboration. Under this new blueprint, some research results at UM already show great promise for industrialisation. Currently, Macao's industrial structure is in urgent need of transformation and upgrading, which makes scientific and technological development ever more important. As the only comprehensive public university in Macao, UM is committed to transforming scientific and technological progress into increased productivity in order to promote economic diversification in the city.

提供多元社會服務

Providing Various Services to Society

文/張愛華、林祖兒、林嘉敏、葉浩男・圖/編輯部，部分由受訪者提供
English Translation / Anthony Sou・Photo / Editorial Board, with some provided by the interviewees

大學除了致力培養人才、推動學術研究，服務社會也是重要的使命。澳門大學創校40年以來，利用大學全方位的專業學術團隊，參與本土研究，積極發揮智庫角色，為政府和社會機構培訓人才，並為本地社區提供學術及技術的諮詢、顧問和研發服務，造福社群。

In addition to nurturing talent and pursuing academic research, the University of Macau (UM) is also committed to serving the local community. Since its establishment 40 years ago, UM has spared no effort to create benefits for the community. It actively participates in local research projects, plays an active role as a think tank, offers training courses for government departments and social organisations, and provides academic and technical consultancy, as well as research and development (R&D) services to the local community.

研究澳門為政府出謀獻策

成立於1987年的澳大澳門研究中心（CMS）一直以「立足澳門，研究社會，為澳門發展服務」為宗旨。在澳門1999年政權移交前的1980、90年代，CMS擔當社會智庫的角色，與社會領袖和行業精英為澳門回歸進程中澳門面對的挑戰出謀劃策，成為過渡期的重要學術力量。CMS至今已形成一支以澳門問題研究為中心的多學科、跨領域學術隊伍，探討重大課題，開啟「澳門學」的新征程。

澳門回歸後，CMS繼續根據澳門經濟和社會發展所需，開展各類研究項目，包括構建「澳門經濟數據庫」、編輯大型學術期刊《澳門研究》，以及廣泛開展學術交流與合作。CMS主任、傳播系副教授林玉鳳說：「澳門社會不斷發展，CMS的研究議題也有所轉變。」例如，CMS在2020年開展了大量預測和研究，包括澳門最新宏觀經濟預測、探討施政報告、澳門城市總規劃系列座談會等。2020年新冠肺炎爆發波及全球，CMS參與了一項橫跨16個國家的合作計劃，瞭解各地政府對新冠肺炎的應對和民眾的反饋等，這些數據可供澳門特區政府參考。

林玉鳳教授 Prof Agnes Lam

持續培訓提升業界人士競爭力

在1981年創校之初，東亞大學已設立校外進修學院（College of Extension Studies），根據市場和社會的需求開設各種專業培訓，包括語言、管理和計算機方面的課程等，形式靈活多

澳門研究中心舉辦系列座談會探討城市總體規劃
CMS holds a seminar to discuss Macao's urban development master plan

Devising Strategies for the Government via Macao Studies

Founded in 1987, the Centre for Macau Studies (CMS) at UM is committed to serving Macao through study of the local community. In the 1980s and 1990s, before Macao's handover to China, CMS worked as a social think tank with community leaders and professionals from all walks of life to devise strategies for the problems and challenges facing the city during the transitional period leading up to the handover, becoming one of the important academic forces at this important moment of history. Over the years, the centre has formed a multidisciplinary team to study key issues in Macao and carry out major projects to push the boundaries of Macaology.

After the handover, CMS continued to respond to the needs of Macao's economic and social development through research projects and academic activities. The centre has created the Macao Economic Database, published the *Journal of Macau Studies*, and launched various academic exchange and collaboration activities. 'As Macao's society has evolved, the studies conducted by CMS scholars have also changed,' says Agnes Lam, director of CMS and an associate professor in the Department of Communication. For example, in 2020,

樣，學員多為利用業餘時間進修的在職人士。1991年，東亞大學更名為澳門大學。新的《大學章程》頒佈後，澳大於1992年底成立校外課程及特別計劃中心，旨在推廣延續教育。澳大的成人教育更從1998年起迅速發展。

2006年，澳大將校外課程及特別計劃中心更名為持續進修中心（CCE），通過提供持續教育，開辦文化、職業培訓和各類兼讀的非學位課程等，提升就業人士的競爭力。CCE主任劉丁己教授表示，該中心是澳大對外非學位課程的主要窗口，為大眾提供優質的培訓課程及教學服務支援。僅2018至2020年間，就有超過6,000人次在該中心修畢各類課程。

近年，因應澳門及粵港澳大灣區整體的發展所需，CCE增設金融數據分析、建築安全、大數據、機電工程、工料測量、蒙特梭利幼兒教學、托兒

CMS carried out a lot of work in data forecasting, which resulted in the macroeconomic forecast for Macao. The centre also held seminars on major social issues, including the chief executive's policy address and Macao's urban development master plan. In addition, the centre participated in a collaborative project with 16 countries to study the responses of governments around the world to COVID-19, as well as the feedback of the public. The data will serve as a basis for policymaking for the Macao Special Administrative Region (SAR) government.

Offering Training to Boost the Competitiveness of Industry Practitioners

The University of East Asia (UEA), the predecessor of UM, established the College of Extension Studies in 1981 to provide professional training courses in various subjects, including language, management, and computing, in order to meet market demands and the needs of society. Because of their flexibility and diversity, the courses attracted a lot of working people who used their spare time to enhance their skills. In 1991, UEA was renamed

持續進修中心舉行工料測量專業文憑課程畢業典禮。圖中前排右五為澳大持續進修中心主任劉丁己教授。

The graduation ceremony for the professional diploma course in quantity surveying offered by CCE. CCE Director Matthew Liu Ting Chi is in the front row, 5th from right in the photo.

「中小企業營商培訓課程」受在職人士歡迎
SME training courses are well received by working people

the University of Macau. After its new Charter was promulgated, the university established the Centre for Continuing Education and Special Programmes in late 1992, with the aim of promoting continuing education, and since 1998, adult education has developed rapidly at UM.

In 2006, the centre was renamed the Centre for Continuing Education (CCE), with the mission to offer continuing education, cultural and vocational training, and part-time non-degree programmes to boost the competitiveness of Macao's workforce. According to Matthew Liu Ting Chi, director of CCE, the centre is the main window for UM to provide non-degree programmes to individuals in the community. It is committed to providing quality courses and education services to the public. In the three years from 2018 to 2020 alone, over 6,000 enrollments in and completion of CCE courses were recorded.

In recent years, in response to the development needs of Macao and the Guangdong-Hong

行政長官賀一誠（右三）主持公共行政培訓中心揭幕儀式
Chief Executive Ho Iat Seng (3rd from right) unveils the plaque of the Public Administration Training Centre

所幼兒導師培訓等多類課程，還舉辦大灣區政府高端培訓團和跨境學生交流團。2020年4至7月，CCE推出「中小企業營商培訓課程」，在嚴格遵守防疫措施的前提下，在疫情期間為任職於本地中小企業的人士提供免費進修。

助政府人才梯隊建設

澳大2020年成立公共行政培訓中心，澳門行政長官賀一誠在公共行政培訓中心啟用儀式暨首屆公務人員領導力培訓班開課典禮上跟學員談話時表示，對首屆公務人員領導力培訓班寄予厚望，期望持續開辦培訓課程，助力特區政府人才的梯隊建設。

公共行政培訓中心主任、法學院教授稅兵表示，「公務人員領導力培訓

Kong-Macao Greater Bay Area, CCE has developed courses in a wide variety of subjects, including financial data analysis, construction safety, big data, electromechanical engineering, quantity surveying, Montessori education, and training for early childhood trainers in nurseries. In addition to regular courses, the centre has also offered training for senior civil servants from cities in the Greater Bay Area and organised cross-border student exchange trips. During the epidemic period from April to July 2020, CCE launched courses to provide free training opportunities for owners and employees of small- and medium-sized enterprises (SMEs) in Macao under strict compliance with epidemic prevention measures.

稅兵教授 Prof Shui Bing

行政長官賀一誠（右一）對首屆公務人員領導力培訓班寄予厚望

Chief Executive Ho Iat Seng (1st from right) has high expectations for participants in the inaugural leadership training course for civil servants

班」採用脫產培訓方式，「有別於以往碎片化的公務員培訓形式，相關培訓因應澳門目前改革及發展的方向，側重跨部門合作及電子政務，希望培養創新型的實務人才，為公共部門提供改革的決策和方案。」

博彩研究助政府制訂相關政策

2003年成立的澳大博彩研究所（ISCG）是澳門首個開展關於博彩研究的學術機構，提供政策建議、開辦專業培訓課程，並與政府部門和社會機構在澳門推廣「負責任博彩」。ISCG所長、工商管理學院教授馮家超是澳大專注博彩研究的第一人，他說：「回歸初期，沒有人想過開展澳門的博彩研究，

Offering Leadership Training Course to Help Build the Government's Talent Pipeline

In 2020, UM established the Public Administration Training Centre under CCE. At the opening ceremony for the centre and the inaugural leadership training course designed for local civil servants, Chief Executive Ho Iat Seng expressed his high expectations for course participants as well as his hope that the training course would continue to be offered to help build the talent pipeline of the SAR government.

Shui Bing, director of the Public Administration Training Centre and a professor in the Faculty of Law (FLL), says that the course provides off-the-job training for civil servants: 'This course differs from the previous fragmented training for public workers and focuses on inter-departmental

馮家超教授
Prof Davis Fong Ka Chio

由社會工作局、博彩監察協調局和澳大博彩研究所共同研發的負責任博彩資訊站

A Responsible Gambling Kiosk jointly developed by the Social Welfare Bureau, the Gaming Inspection and Coordination Bureau, and ISCG.

博彩研究所與各學院跨學科合作研究成癮機制與預防
ISCG works with various faculties to study the mechanisms that underlie addiction and addiction prevention

政府和高等院校都沒有關於博彩的研究或數據。但經過我們多年努力，在政府的信任和支持下，ISCG的研究及數據已能為政府制訂政策時提供參考。」

ISCG還開辦「賭場管理文憑」課程及「博彩管理高級文憑」，為博彩從業員及有意投身博彩業的人士提供培訓，推動博彩業管理專業化和增強從業員的競爭力。目前，ISCG還與澳大各學院合作，開展關於成癮機制與預防、博彩與決策的腦科學等方面的跨學科研究。這些研究將有助揭示成癮的神經機制，並且找出可能的干預和治療方法。

參與基本法起草

澳大在澳門實施「一國兩制」，包括在基本法的起草和落實中發揮重要作用。法學院的教師一直積極參與一些重要法律的起草和翻譯，提供法律政策諮詢和為政府法律官員提供培訓

cooperation and e-government, with the aim of nurturing innovative talent to provide solutions for public sector reform.'

Gaming Study Helps the Government in Policy Making

The Institute for the Study of Commercial Gaming (ISCG), established in 2003, is the first institute in Macao to conduct gaming research, to provide related policy advice and training courses, and to promote responsible gambling in collaboration with government departments and social organisations. As the director of ISCG, Davis Fong Ka Chio, a professor in the Faculty of Business Administration, is also the first person to study gaming in Macao. 'In the early stage of Macao's handover, no one thought of doing research on gaming, and neither the government nor the higher education institutions had any data on gaming,' says Prof Fong. 'However, with our efforts over the years, and thanks to the government's confidence and support, ISCG has collected an adequate amount of data and conducted various studies, which will serve as a basis for the Macao SAR government in

法學院設模擬法庭讓學生瞭解法庭運作
The Moot Court of FLL helps students learn more about how a court operates

等。法學院教授駱偉建於2001年來到澳大，此前他在基本法起草階段已參與相關工作，可以說全程見證基本法的起草和誕生。他認為，澳大在基本法的誕生過程發揮了重要作用，也為其實施作出重要貢獻。

編寫歷史和法律教材

澳大憲法與基本法研究中心於2018年成立，由駱偉建教授擔任主任。過去兩年來，駱教授走進澳門社會和中小學推廣憲法和基本法，此外，還跟澳門基本法推廣協會長期合作，開辦很多面向社會人士的基本法培訓。他說：「中心為本澳各政府部門、社團機構等推動憲法和基本法

駱偉建教授 Prof Lok Wai Kin

formulating related policies.'

ISCG offers a Diploma in Casino Management programme and an Advanced Diploma in Gaming Management programme for gaming industry employees and those who are interested in joining the industry. Through these training programmes, the institute aims to professionalise gaming management and boost the competitiveness of the industry's human resources. Currently, ISCG is working with various faculties at UM to conduct interdisciplinary research on the mechanisms of gaming addiction, addiction prevention, as well as the neuroscience of gaming and decision making. Prof Fong notes that the studies could help uncover the neural mechanisms of addiction and explore possible interventions and treatments.

Involvement in Drafting the Basic Law

UM plays an important role in the implementation of the 'One Country, Two Systems' policy in Macao, which includes the drafting and implementation of the Basic Law. Faculty members in FLL have been involved in the drafting and translation of

滙聚澳大文教單位的崇文樓於2019年揭幕
The inauguration ceremony for UM's Cultural Building in 2019

培訓。2020年已完成本澳中、小學的憲法及基本法教學材料，亦將為特區政府公務人員培訓編寫相關教材，將用於各項教學和推廣當中。」

由澳大的中國歷史文化中心、孔子學院、中葡雙語教學暨培訓中心、澳門研究中心及藝術設計中心組成的「澳門中小學生人文社科教育基地」於2018年成立，為本地中小學生提供全人發展的機會。中國歷史文化中心正編寫中國歷史教學輔助材料供中、小學參考，並設有「中國歷史文化推廣基地」，將推動更多中小學加入，加強推廣愛國愛澳教育及弘揚中華文化。

important laws, providing advice on legal policies and training for government officials in the legal sector. One of the examples is Prof Lok Wai Kin, who was responsible for duties related to the drafting of the Basic Law before joining UM in 2001. It can be said that he witnessed the drafting and birth of the Basic Law of Macao SAR. According to Prof Lok, UM played a significant role in the birth of the Basic Law and has also made important contributions to its implementation.

Compiling Teaching Materials on History and Law

The Centre for Constitutional Law and Basic Law Studies at UM was inaugurated in 2018, with Prof Lok as the director. Over the past two years, Prof Lok serving has promoted the constitution and the Basic Law in different parts of society, including primary and secondary schools. In addition, he has been working with an association for the promotion of the Basic Law to provide training for the community. 'The centre has been providing training on

PISA研究助澳門特區政府制定教育政策

The PISA study helps the Macao SAR government formulate education policies

PISA研究助制訂教育政策

教育學院創院以來，提供各類培訓課程和學位課程，提升澳門教師的專業水平。學院人員還通過研究協助特區政府制定教育政策。成立於2006年的教育測驗與評核研究中心（ETARC），是澳門教育測驗與評核領域的重要科研單位，一直與海內外教育測驗評量機構和國際學術研究團隊合作，包括：與經濟合作暨發展組織（OECD）合作開展三年一度的「學生能力國際評估計劃」（PISA）；與內地高等院校合作，參與由中國教育部督導的「中國基礎教育質量監測」之科學和語文科監測工具的研發等。

張國祥教授1992年入職澳大，自ETARC成立起擔任主任至今。他談到這些年的研究時，印象特別深刻的

the constitution and the Basic Law to various government departments and organisations,' says Prof Lok. 'It has completed compiling teaching materials for local primary and secondary schools in 2020, and will continue to prepare relevant materials for civil servants in the SAR government.'

The Macao Base for Primary & Secondary Education in Humanities & Social Sciences, formed by UM's Centre for Chinese History and Culture (CCHC), Confucius Institute, Chinese-Portuguese Bilingual Teaching and Training Centre, and CMS, was inaugurated in 2018, to provide whole-person education to primary and secondary school students in Macao from an early age. As part of the base, CCHC is currently compiling supplementary teaching materials on Chinese history for primary and secondary schools. It has also set up a base for the promotion of Chinese history and culture and will encourage local primary and secondary schools to become partners in order to strengthen patriotic education and promote Chinese culture.

是，當初澳門PISA 2009結果顯示學生的閱讀能力較弱，消息引起教育界相當關注。隨後，ETARC的研究人員詳細分析澳門學生的閱讀表現，並向不同持分者推廣相關的研究結果和教學建議。近年來，隨著特區政府持續加大教育投入，澳大和其他師資培訓機構開展很多針對閱讀推廣和課堂教學的實務工作，加強了教師的專業能力，學生的閱讀素養表現持續提升。他說：「分析PISA研究計劃所反映的澳門基礎教育系統存在的問題和薄弱環節，能有效地銜接教育政策、教育實踐與教育研究的各個部分，並為特區政府的科學施政提供紮實的研究基礎，進而能夠系統化地推進澳門基礎教育系統，朝著高素養表現、高教育公平和高身心福祉的目標邁進。」

張國祥教授 Prof Cheung Kwok Cheung

創新科技服務社會

在科技和工程領域，澳大一批教研團隊長期而積極地服務社會，為政府、專營公司和機構的大小工程貢獻專業意見。澳大也透過智慧城市物聯網國家重點實驗室，與澳門電力股份有限公司、澳門電訊、澳門自來水股份有限公司、南光石油化工有限公司、港珠澳大橋管理局等建立合作，將會開展智慧能源、5G應用、環境污染、天然氣、基建與設備運維等合作研發項目，提升澳門智慧城市科技創新水平和產業應用服務水平。

研究城市配電網的科技學院助理院長、智慧城市物聯網國家重點實驗室副教授戴寧怡表示，近年澳大與本地

戴寧怡教授 Prof Dai Ningyi

PISA Study Helps Shape Education Policies

The Faculty of Education (FED) offers a wide range of training courses and degree programmes to improve the quality of teachers in Macao while faculty members engage in educational research to assist the Macao SAR government in formulating education policies. The Educational Testing and Assessment Research Centre (ETARC), founded in 2006, is an important research unit in the field of educational testing and assessment in Macao, and has conducted various research projects through collaboration with domestic and international agencies and academic research teams. Some of the notable projects include the triennial Programme for International Student Assessment (PISA), which is conducted in collaboration with the Organisation for Economic Co-operation and Development, and the development of science and language evaluation tools, a project jointly conducted with mainland universities for the National Assessment Centre for Education Quality under the Ministry of Education of China.

Prof Cheung Kwok Cheung in FED joined UM in 1992, and has been the director of ETARC since its establishment. When talking about his career in education research, Prof Cheung says that he was particularly struck by Macao's PISA results in 2009 as they showed that local students' reading performance was relatively weak. The news aroused considerable concern in the education sector. As a response, ETARC researchers conducted a detailed analysis of the reading performance of local students and disseminated the findings as well as teaching recommendations to different stakeholders, with the aim of helping students improve reading skills. In recent years, as the Macao SAR government continues to increase its investment in education, teacher training institutions, such as UM, have done a lot of work aimed at promoting reading and classroom teaching. The work has proved effective as teachers have strengthened their skills and the reading performance of students has steadily increased. 'Knowing the problems and weaknesses in Macao' s basic education system, such as those reflected in the PISA

澳大與本澳多間專營公司開展研究項目，包括智慧能源系統。

UM collaborates with local companies on different research projects, including those on intelligent energy systems.

電力公司通力合作，令供電品質及電網可靠度進一步提升：「我們團隊的研究關注城市的智慧能源系統，協力解決能源的清潔、高效和可靠性的問題，將會著力配合特區政府的智慧城市建設，以創新科技服務社會。」

提供工程品質檢測服務

隨著澳門經濟發展，特區政府從2003年起有序開展眾多大型工程和基建項目，對工程的質量監管和技術支援需求日增。澳大遂於2003年成立工程研究及檢測中心（CERT），提供檢測及監督工程服務。澳大一批實力雄厚的師資團隊為CERT提供技術支援、專業建議和服務。因應發展需要，澳大正計劃將CERT重新組建為澳大全資

results, we are able to bridge the gaps between educational policies, practices, and research studies, and together they provide a solid research foundation for the Macao SAR government to carry out policies based on scientific evidence, which will not only promote basic education in Macao, but will also enhance student performance, create education equity in society, and maintain the physical and mental well-being of all local residents,' says Prof Cheung.

Serving Society with Innovative Technology

In terms of technology and engineering, faculty members at UM actively engage in community service, providing professional advice to the SAR government as well as local companies and organisations on projects

工程研究及檢測研究中心為業界提供檢測及監督工程服務
CERT provides professional services in engineering inspection and monitoring

擁有的公司並名為——澳大工程研究及檢測中心有限公司（UMCERT），全力提升工程品質及檢驗方面的專業服務。

土木及環境工程系副教授高冠鵬多年來參與了CERT的監測工程服務，並擔任環境諮詢委員會副主席、交通諮詢委員會委員等，他說：「服務澳門是要用心去做，當擁有社會服務經驗再在課堂上跟學生分享就會顯得更有說服力，也讓學生明白其所學在社會上是如何應用的。」

支持社區科學推廣

澳大也在科普教育方面作出重要貢獻，以其先進的實驗室設備

高冠鵬教授 Prof Kou Kun Pang

of all sizes. Through the State Key Laboratory of Internet of Things for Smart City (SKLIOTSC), UM has established collaborative relationships with Companhia de Electricidade de Macau (CEM, the local electricity company), Companhia de Telecomunicações de Macau (CTM, a local telecommunications service provider), Macao Water Supply Company Limited, Nam Kwong Petroleum and Chemicals Company Limited, and the Hong Kong-Zhuhai-Macao Bridge Authority, to carry out R&D projects in smart energy, 5G applications, environmental pollution control, natural gas, infrastructure, and equipment operation and maintenance, which aim to enhance technological innovation for smart city development in Macao, as well as the industrial applications of these technologies.

Prof Dai Ningyi, assistant dean of the Faculty of Science and Technology (FST) and associate professor in SKLIOTSC, is an expert in urban power distribution networks. According to her, UM has been working closely with CEM to improve the quality of electricity supply and grid reliability. 'Our research studies focus on creating smart energy systems for cities and solving problems in the supply of clean, efficient and reliable energy,' says Prof Dai. 'We will continue to work with the SAR government to promote smart city development and serve the community with innovative technology.'

Providing Engineering Quality Inspection

With the development of the economy after the handover, large-scale public construction and infrastructure projects have begun one after another in Macao since 2003. To respond to the Macao SAR government's increasing demand for quality control and technical support in engineering, the Centre for Engineering Research and Testing (CERT) was established at UM in the same year to provide professional service in engineering inspection and monitoring. The centre is supported by a team of UM faculty members with strong technical backgrounds. UM plans to restructure CERT into a wholly-owned subsidiary named UMCERT Engineering Research and Testing Limited to provide professional services in engineering quality and inspection.

Associate Professor Kou Kun Pang in the Department of Civil and Environmental Engineering has been involved in CERT's engineering monitoring services for

完善中小學生科學教育。2015年，澳門科學技術發展基金與澳大簽訂了「科普合作備忘錄」，當中包括建立科學暨工程科普推廣中心（下稱科普中心），善用大學的設備和支援，旨在大幅提升澳門學生的科學素養。

2018年成立的「澳門中小學生科技實踐基地」以科普中心為核心，推行了一系列STEM教育計劃，支持社區科學推廣活動，為中小學師生提供可持續培訓。基地善用澳大的科研資源，澳中小學提供全面的STEM教育和活動。科普中心持續組織及舉辦相關活動，包括與葡萄牙國家科學暨技術文化推廣署簽署合作框架協議，進一步落實雙方在STEM教育的合作，提高兩地大眾對科普的關注；以及支援澳門科學技術發展基金主辦的尖子培訓項目——潛能拓展計劃，為澳門學

many years. He has also served as the vice chairman of the SAR government's environment advisory committee as well as a member of its transport advisory committee. 'Serving the local community is something that you have to do with your heart,' says Prof Kou. 'Now that I have gained some experience in social services, my sharing with students will be more convincing and hopefully will help them apply their knowledge in society.'

Supporting Community Science Outreach

In addition to technical support, UM has also made important contributions to society in science popularisation. For instance, it uses advanced laboratory equipment on campus to enhance science education for primary and secondary school students. In 2015, the Macao Science and Technology Development Fund and UM signed a Memorandum of Understanding (MoU) on various issues, including the establishment of Centre for Science and Engineering Promotion. According to the

澳門學生參與科普活動

Macao students participate in a science popularisation activity

澳大走進澳門中小學校推動STEM科普教育
UM promotes STEM education in primary and secondary schools in Macao

生提供多元化的持續學習及訓練，以培養具潛力的中學生對不同科學領域的學習興趣，提升他們的創新思考能力、領導能力和國際視野。

2020年，科普中心亦支援教育暨青年局（現稱教育及青年發展局）主辦的「STEM夏令營啟動儀式及澳門高中學生STEM體驗活動」。舉辦科普講座及三項以光為主題的科普實驗，希望學生透過活動瞭解國家的科研水平和成就，提升創新能力和科學素養，培養他們在科技領域的跨學科應用能力。

科研為了取得更大社會效益

宋永華校長曾指出，科學研究不意味著孤芳自賞、不接地氣，而是為了取得更大的社會效益。大學的辦學實力

MoU, the centre will use the university's equipment and resources to enhance scientific literacy of students in Macao.

UM also established the Macao Base for Primary & Secondary STEM Education in 2018. With the centre as the core, the base aims to offer STEM education programmes, support science popularisation activities in the community, and provide sustainable training for primary and secondary school teachers and students with the scientific research resources at UM. The Centre for Science and Engineering Promotion has organised various activities, including the signing of a collaborative framework agreement between UM and Ciência Viva, Portugal's national agency for the promotion of science, technology, and culture, to increase collaboration in STEM education and to raise public interest in science in Macao and Portugal. The centre also provides support to the Potential Capacity Development Programme, which was launched by the Macao Science and Technology

越強，服務社會的能力也越強，在經濟社會發展中扮演的角色也越重要。

在過往40年建立基礎上，澳大將繼續以服務社會為己任，為澳門的發展定位提供強大支持，為本地經濟社會發展發揮應有的、更大的作用。

Development Fund to cultivate the interest of secondary school students in different scientific disciplines and to enhance their creative thinking, leadership skills, and international perspectives.

In 2020, the Centre for Science and Engineering Promotion provided support to the STEM Summer Camp Opening Ceremony and the STEM Experience Activity for High School Students in Macao, an event organised by the then Education and Youth Affairs Bureau, the predecessor of the Education and Youth Development Bureau. During the activity, the centre held science lectures and conducted three experiments on the subject of light to help students learn more about the research calibre and achievements of China, with the aim of enhancing their creativity and scientific literacy and cultivating their interdisciplinary skills in the field of science and technology.

Scientific Research for Greater Social Benefits

Rector Yonghua Song says that scientific research does not mean self-indulgence or not being grounded in reality; the purpose of scientific research is to create greater social benefits. The better a university becomes at teaching and research, the better its ability to serve the community, and the more important its role in economic and social development.

Building on a solid foundation of 40 years, UM will continue to serve the community in the future by providing full support and making a greater contribution to Macao.

澳大致力以研究服務社會。圖為科研大樓。
UM is dedicated to serving society through research. These pictures show the research buildings in UM.

建設國際化師資團隊

Developing an International Faculty Team

文/張愛華、林祖兒・圖/編輯部，部分由受訪者提供
English Translation / Ruby Chen・Photo / Editorial Board, with some provided by the interviewees

澳門大學從1981年創校以來，一直是國際化和多元開放的校園，師資團隊聘自世界各地，持續帶動教研走向卓越，提升大學的競爭力和國際聲譽。

Excellence in teaching and research, an unparalleled competitive advantage, and a great international reputation—these are the goals for which every university strives, and they all depend on the development of an outstanding faculty team. This article takes a close look at how the University of Macau (UM) accomplished these goals in the short span of 40 years since its founding in 1981.

創校初期師資團隊建設

黃景強、胡百熙和吳毓璘三位創校人在東亞大學（澳大前身）建校初期已著力聘請優秀師資，包括聘請已故國學大師饒宗頤教授出任文學院講座教授。饒教授協助研究院創辦中國文史學部，親任該學部主任，為中文系創系教授。他在創校之初為大學人文學科建設克盡厥職，奠定了中文學科紮實的學術和研究基礎，更為澳門培養一批造詣精湛的漢語言文學研究人才，提升大學的聲望。

1981年至1987年是澳大教師隊伍平穩發展的時期，教學人員不超過100人。1988年，澳葡政府通過澳門基金會收購東亞大學並進行重組。1991年是大學的一個重要里程碑，該年東亞大學正式更名為澳門大學，澳葡政府頒佈新的《大學章程》，使澳大邁向新的發展階段。1988年至1991年間是師資隊伍發展最快速的時期，規模急速擴大。

創校初期，大學除了聘請資歷豐富的教師，還集合了一批剛畢業的大學生開展

Recruiting Faculty Members in the Early Days

Even during the early days, the three co-founders of the University of East Asia (the predecessor of UM), namely Wong King Keung, Woo Pak Hay, and Eng Yuk Lun, already realised the importance of recruiting outstanding faculty members to support the university's long-term development. They went to great lengths to obtain the best people in different fields. For instance, they invited Prof Jao Tsung I, the late master of sinology, to serve as a chair professor in the university's School of Arts. Prof Jao assisted with the establishment of a department of Chinese literature and served as the department head. He was also a founding professor in the Department of Chinese. In short, Prof Jao played an instrumental role in the development of the Chinese discipline at the university. Many accomplished scholars in Chinese language and literature are his former students.

Between 1981 and 1987, the faculty team of UM grew slowly and steadily, with less than 100 faculty members in total. In 1988, the Portuguese government of Macao acquired the University of East Asia through the Macao Foundation and restructured the university. The year 1991 was an important milestone in the university's history. In

國學大師饒宗頤教授
Prof Jao Tsung I, the late master of sinology

澳大自創校以來一直重視國際化師資團隊的建設
Since its founding, the university has spared no effort to recruit an international faculty team

教育事業。1989年畢業於英國威爾斯大學的袁振業機緣巧合下從香港來到工商管理學院，任職會計專業的講師，他回憶道：「大學用了不少資源栽培年輕教師，還推出措施鼓勵講師帶職進修，赴海外或在本地攻讀博士，以及撥出經費支持教學人員深化研究項目等，對提升教學團隊的質素幫助極大。」

在大學支持下，袁振業一邊教學、一邊攻讀博士學位，於1999年獲得澳洲南澳大學會計管理博士學位。過去32年，他由講師晉升至副教授，還出任會計及資訊管理學系主任14年。「澳門回歸後，大學在特區政府支持下迅速發展，增撥了很多資源支持教研。大學近年還推出為助理教授晉升至副教授的『6+1』制度，除了要求我們的教學與

袁振業教授 Prof Yuen Chun Yip

this year, the University of East Asia was officially renamed 'University of Macau', and the government promulgated the new Charter of the University of Macau, ushering in a new era for the university. The period between 1988 and 1991 witnessed the fastest growth of the faculty team.

In the early days, the university spared no effort to recruit experienced scholars, but it also opened its arms to fresh university graduates like Yuen Chun Yip. Yuen graduated from the University of Wales in 1989. Through a series of serendipitous events, he became a lecturer of accounting in the university's Faculty of Business Administration. Yuen says: 'The university devoted a lot of resources to training young teachers. It even supported incumbent lecturers to pursue further education while teaching full-time, including pursuing PhD degrees in Macao or overseas. On the research front, it allocated funding to support faculty members to conduct research projects. These strategies considerably enhanced the quality of the faculty team.'

With the support of the university, Yuen studied for a PhD degree while teaching full-time at UM. In 1999, he obtained a PhD degree in accounting management

時並進，還要求不斷有高質素的研究產出，令整體師資的水平有很大提升。」

回歸後著力提升師資質素

1981至1999年間，澳大經歷了創建、調整和鞏固的階段，為未來的拓展奠下紮實基礎。隨著1999年澳門特別行政區成立，澳大進入另一個發展階段。此時大學的重要目標之一是繼續提升教學和研究質素，策略有二：一是全球招聘優秀師資；二是通過內部晉升。當時一批講師九年內完成攻讀博士學位並晉升至助理教授，增強了澳大的師資力量。

2006年，澳門立法會通過《澳門大學法律制度》，澳門特區行政長官頒佈新的《澳門大學章程》。大學成立新的管治架構，以校董會為最高管治機關來代替政府的直接監督，符合國際通行的高等教育模式，修章帶來的學術自由和行政彈性加速了大學的發展。資料顯示，1999年至2008年間，具博士學位的教師由23%提高到超過70%，人數從229位增至378位。教師隊伍規模及質素的提升，也提升了大學的聲譽和大幅提高教學和研究質素。

高潔欣教授是澳大培養的首位數學博士。她在1996年完成教育學院數學學士學位後，繼續攻讀科技學院數學碩士學位，同時出任該院助教，畢業後晉升為講師。她當年本想到海外攻讀博士學位，但在澳大任助教時認識剛到任的錢濤教授，決定留校跟隨錢教授鑽研數學。高潔欣於2005年通過博士論文答辯，之後是首位獲大學推薦到英國劍橋大學做研究員半年的教師。2006年晉升為助理教授，2013年晉升為副教授。她說：「當年澳大鼓勵教師留校修讀博士學位，且提供學費減免以作支持。在研究資源上，校內圖書館的館藏和電子資源也可協助查閱

高潔欣教授 Prof Kou Kit Ian

from the University of South Australia. Today, 32 years after joining UM, Yuen is an associate professor, and has served as the head of the Department of Accounting and Information Management for 14 years. He says, 'After Macao's handover, with the support of the government of the Macao Special Administrative Region (SAR), the university has developed rapidly and has also allocated a lot of additional resources to support teaching and research. In recent years, the university has launched a "6+1" system for promoting assistant professors to the rank of associate professor. In addition to requiring us teaching staff to keep pace with the times, it also requires continuous high-quality output in research, which has greatly improved the overall quality of the faculty team.'

Enhancing Faculty Quality after Macao's Handover

From 1981 to 1999, UM went through a period of adjustment and consolidation, laying a solid foundation for future expansion. In 1999, the Macao SAR was established, opening a new chapter in UM's history. One of the priorities of the university during that period was to continue improving the quality of its teaching and research. To achieve this, UM adopted two strategies: international recruitment of excellent faculty members, and internal promotion of staff. At the time, a group of lecturers were promoted to the rank of assistant professor after completing doctoral studies within nine years.

In 2006, the Legislative Assembly of Macao passed the new Judicial Regime of the University of Macau, and the chief executive of the Macao SAR promulgated the new Charter of the University of Macau. The adoption of these two documents was significant for several reasons. First, a new governance structure was established, with the University Council replacing the government to become the highest governance organ of the institution. Second, they ensured compliance with an internationally adopted education model. Third, the revised Charter provided the university with more academic freedom and administrative flexibility, which in turn has greatly accelerated the university's development in recent

資料，所以在澳大修讀博士絕不遜色於國外。」

隨著辦學規模不斷擴大，澳大的師資團隊也更趨多元和國際化。高教授認為：「在澳大，無論是本地或來自外地的教學人員，都可以結合自身研究方向開展跨領域的探討和創新，這有助擴展研究思維。」

新校園吸引大師加盟

2009年6月27日，澳大迎來了千載難逢的歷史機遇——獲全國人大常委會批准在橫琴島興建新校園，使澳大有更優越的辦學環境和先進的教研設備，吸引更多有豐富的學術和國際經驗的教授加盟。當中被譽為「新一代治小說史、文學史第一人」的楊義教授，獲聘至澳大後出版了多部著作，更組建了一支核心的中國文學研究團隊。

2014年，澳大正式遷入新校園，師資力量也進一步鞏固。為了吸引優秀師資、提升競爭力，澳大繼續全球公開招聘優秀教學人員；獎勵學術優秀，建立國際化晉升制度，邀請國際專家

楊義教授 Prof Yang Yi

提供評審建議；制定教師獎勵制度和師德準則，全面提升和強化師資隊伍的綜合素質；開展教員發展方案，如傑出訪問學者計劃、講座教授計劃等，大幅提升教學成效。

澳大的國際化師資隊伍還有歐洲科學院（外籍）院士、英國皇家工程院院士、英國皇家化學學會會士、國際電機電子工程師學會會士、葡萄牙科學院院士等不同學術範疇的領軍人物。大學還加大力度招聘講座教授。這批具豐富學術經驗和領導力的學者，為澳大的師資隊伍

years. The percentage of UM professors with a PhD degree increased from 23 per cent in 1999 to over 70 per cent in 2008, with the total number of faculty members increasing from 229 to 378 during the same period. This improvement in the quantity and quality of the faculty team has greatly enhanced the university's reputation and its teaching and research quality.

Prof Kou Kit Ian was the first UM-educated doctor of mathematics. After obtaining her bachelor's degree in mathematics from the Faculty of Education in 1996, she went on to complete a master's degree in the Faculty of Science and Technology while concurrently serving as a teaching assistant in the faculty. Upon graduation, she was promoted to lecturer. Prof Kou says she originally planned to pursue a PhD degree overseas, but after meeting the new faculty member Prof Qian Tao, while serving as a teaching assistant, she changed her mind and decided to study with Prof Qian. In 2005, Kou passed her doctoral dissertation oral defence. Later, she became the first UM-recommended scholar to work as a research fellow at the University of Cambridge for half a year. In 2006, she was promoted to assistant professor. Seven years later, she became an associate professor. Looking back, she says, 'At the time, UM encouraged faculty members to pursue PhD studies at the university and reduced tuition fees to show support. In terms of research resources, the books and electronic resources in the university library were very useful. So all in all, UM was on a par with overseas universities in terms of PhD education.'

With the continuous development of the university, the faculty team became more diverse and international. Prof Kou believes that UM provides an intellectually stimulating environment in which scholars, regardless of their academic field, can conduct cross-disciplinary conversations from their unique perspectives.

New Campus Attracts Academic Titans

On 27 June 2009, UM received the momentous news that the National People's Congress Standing Committee had approved the construction of a new campus on Hengqin Island. A new campus that was much larger than the old one meant that there would be enough space for
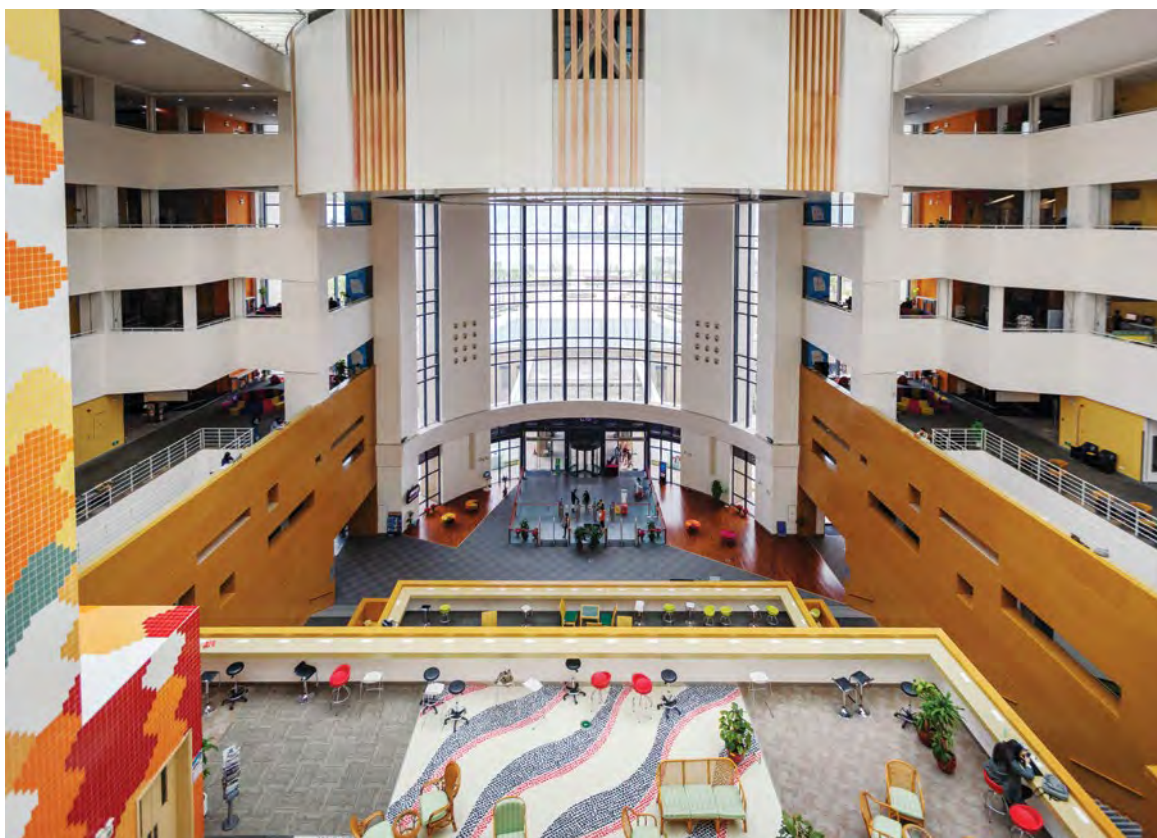
澳大圖書館館藏豐富，有助學者研究。
The UM Library has a rich collection which supports UM scholars' research

帶來新的國際思維和觀點，進一步提升教研力量。

2015年獲聘到澳大任教的歷史系主任、講座教授王笛，被學界譽為研究中國城市史和新文化史的代表性人物。來到澳大後，王教授創出了豐碩的研究成果：「因為澳大的各項有利條件，如軟硬件配套和設備、圖書館的豐富藏書等，使我的研究工作比預期快。」

王笛教授認為，雄厚的師資有助澳大穩步發展，在提升國際學術聲望方面舉足輕重。他表示：「澳大國際化的師資團隊質素很高，在甄選教師方面有一套非常嚴格的標準，為確保教學和研究質素提供良好基礎。」

王笛教授 Prof Wang Di

advanced teaching and research facilities, which would help the university attract top scholars from around the world. Yang Yi was one such academic titan the university recruited after announcing the new campus project. Prof Yang is hailed as 'the first scholar of the new generation to study the history of fiction and literature'. After joining UM, he published many books and formed a Chinese literature team.

In 2014, UM officially moved to the new campus and implemented a series of strategies designed to enhance its competitiveness. First, it continued to internationally recruit academic staff. Second, it established an enhanced promotion system to reward academic excellence and invited international experts to provide suggestions. Third, it

湯子康教授（右）帶領團隊研發新材料和新能源
Prof Tang Zikang (right) and his team are dedicated to research on new materials and new energy

國際知名納米光電子材料領域領軍人物湯子康講座教授2016年出任澳大應用物理及材料工程研究院（IAPME）創院院長，帶領IAPME在新能源材料、納米光電新材料、量子生物醫藥材料等戰略性新興產業的發展。

湯教授回憶剛到澳大時的心情時，難掩興奮地說：「澳大遷往橫琴新校園是國家推動粵港澳大灣區協同發展戰略的一環，歷史賦予澳大發展的好機遇，看到了澳大無限的發展潛力。經過五年努力，IAPME已建立起令人嚮往的科學研究平台，包括一流的實驗設施、富有活力的科研團隊、專業的實驗設施營運，以及高效的行政管理團隊，並取得了卓有成效的科研成果。」

established a reward system and a code of ethics for faculty members in order to improve the overall quality of the faculty team. Fourth, it launched several faculty development programmes, including a distinguished visiting scholar programme and a chair professor programme, in order to substantially improve teaching and learning outcomes.

As a result of these initiatives, the university successfully recruited a number of renowned scholars in different fields, some of whom hold prestigious titles, such as member of Academia Europaea, fellow of the Royal Academy of Engineering, fellow of the Royal Society of Chemistry, fellow of the Institute of Electrical and Electronics Engineers, and member of the Portuguese Academy of Sciences. The successful recruitment of these scholars brought new thinking, and further enhanced teaching and research at the university.

擇天下英才而用之

為配合特區政府「教育興澳、人才建澳」的施政方針，澳大秉持「擇天下英才而用之」的原則，近年除了吸引海內外優秀的學者加入，還著重招攬本地人才，為他們提供廣闊的發展空間，成為了不少澳門學者回流發展的首選。土生土長的科技學院電機及電腦工程系副教授莫昇萍在美國約翰霍普金斯大學博士畢業後，曾在香港工作，後來發現在澳大的發展更具自由度。她回澳後獲澳大大力支持，創建生物醫學影像實驗室，帶領團隊先後獲得多個世界級獎項。莫教授從海外回澳發展，坦言希望藉研究「推動澳門的核子醫學和臨床發展，造福澳門。」

Prof Wang Di, chair professor and head of the Department of History, joined UM in 2015. He is considered to be one of the foremost experts in the urban history of China and the new cultural history. He has published many books since joining UM. 'Because of all the favourable conditions at UM, such as the advanced facilities and the well-stocked library, I have progressed much faster in my research than I expected,' he says.

Prof Wang believes that a strong faculty team is not only critical to the sustainable development of the university, but also plays a pivotal role in enhancing the university's international reputation. He says, 'UM has a high-quality, international faculty team. The university follows extremely strict criteria in selecting faculty members to ensure quality in teaching and research.'

In 2016, Chair Professor Tang Zikang, a world-renowned leader in the field of nano-optoelectronic materials, was appointed as the founding director of UM's Institute of Applied Physics and Materials Engineering (IAPME), whose main research areas include new energy materials,

莫昇萍教授（左）
Prof Mok Seng Peng (left)

從2018年開始，澳大從大學整體發展、國際化發展、教學人員隊伍建設、研究發展等方面多維度規劃大學的發展策略。目前澳大擁有一支逾600人的國際化優秀師資團隊，約80％來自世界各地，84％擁有博士學位，當中不少畢業於哈佛大學、劍橋大學、牛津大學、史丹福大學、北京大學等國際著名學府。歷史系助理教授Joshua Ehrlich在哈佛大學取得博士學位後加入澳大，主要研究思想史、大英帝國史和南亞史等。Ehrlich教授說：「我研究的英國東印度公司史跟澳門歷史之間有著千絲萬縷的關係，因為工作而來到與自己研究方向有聯繫的城市，這種連結的關係會令研究者對這個地方產生更大的興趣，也會有更多的深入探索。」

師資是建成卓越大學的關鍵要素

40載篳路藍縷的薪火相傳，澳大走出了獨具特色的辦學之路。在世界大學的排名，從2008年的約2,000名，躍升至目前的前350名，國際化發展第六，背後一班卓越的師資團隊功不可沒。校長宋永華教授說：「擁有一支充滿活力、具備全球學術聲譽、教學能力精湛且師德高尚的師資隊伍，是建成卓越大學的關鍵性要素。」

一代代澳大人的奮鬥和努力，使澳大持續壯大、成長，大學的精神和底蘊日益深厚。風正帆懸萬里程，在創校40週年揚帆追夢之際，宋永華教授表示，澳大將繼續壯大師資隊伍，提升教學水平和學術競爭力，以卓越的教學和創新研究，回應和滿足本地社會發展的實際需求、服務澳門。

nano-optoelectronic materials, quantum biomedical materials, and technologies related to other strategic emerging industries.

Recalling the day when he first arrived at UM, Prof Tang could barely contain his excitement. He says, 'UM's relocation to the new campus in Hengqin is part of the country's strategy to promote the coordinated development of the Guangdong-Hong Kong-Macao Greater Bay Area. History has given UM a good opportunity and I saw its unlimited potential. After five years of hard work, IAPME has established a scientific research platform, which is comprised of first-class laboratory facilities, a dynamic research team, professional facilities maintenance personnel, and an efficient management team. Thanks to a combination of these favourable conditions, we have achieved fruitful results in scientific research.'

Internationally Recruiting the Best

'Creating a better future for Macao through education and talent' is at the core of the SAR government's education policy. To support this vision, UM recruits internationally and provides attractive working conditions in order to retain the best people. The efforts have paid off. Today, UM is the favourite choice for overseas-educated scholars who decide to return to Macao to pursue career development. Prof Mok Seng Peng, an associate professor in the Department of Electrical and Computer Engineering of the Faculty of Science and Technology, is an example. After graduating from Johns Hopkins University in the United States with a doctoral degree, she worked in Hong Kong for a while until she realised that UM could provide a better environment for her career. So she left Hong Kong and joined UM. With the university's support, she founded the Biomedical Imaging Laboratory and won a number of international awards with her team. Prof Mok's hope is to promote the development of nuclear medicine and its clinical application to benefit Macao residents.

In 2018, UM's leadership began formulating development strategies for the university, focusing mainly on internationalisation, faculty development, and research. At present, there are more than 600 faculty members at UM, with 80 per cent recruited from outside Macao, and

Joshua Ehrlich教授
Prof Joshua Ehrlich

84 per cent holding a doctoral degree. Quite a number of them graduated from world-renowned universities such as Harvard University, the University of Cambridge, the University of Oxford, Stanford University, and Peking University. Joshua Ehrlich, an assistant professor in the Department of History, holds a doctoral degree from Harvard University. His main research interests include the history of political thought, the history of the British Empire, and the history of South Asia. He says, 'There really is no better place than Macao for someone who studies the history of the East India Company, because it is inextricably linked to the history of Macao. This interconnectedness makes me more interested in this place and allows for deeper studies,' he says.

Outstanding Faculty Are Key to Creating an Excellent University

By following its own unique path, UM has risen from obscurity to prominence over the past four decades, with international ranking jumping from around No 2000 in 2008 to within the top 350 today, and with a ranking of No 6 in international outlook. None of this would have been possible without the joint effort of the faculty team. As UM Rector Yonghua Song says, 'Developing an excellent faculty team that is dynamic, internationally reputed, ethically upstanding, and with superb teaching ability is the key to creating an excellent university.'

As generations come and go, leaving behind an ever-richer legacy, the university keeps growing bigger and better. Now, celebrating its 40th anniversary, the university is poised to reach for exciting new goals. As Rector Song has repeatedly stressed, 'We will continue to develop an outstanding faculty team and enhance the quality of its teaching and research. We hope to serve Macao with excellent teaching and innovative research.'

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1984

首屆本科生畢業及首次頒授榮譽博士學位。

UM graduated its first cohort of undergraduate students and conferred its first honorary doctorate.

1987

成立澳門研究中心。

The Centre for Macau Studies was established.

1988

政府收購東亞大學並進行重組和修訂大學章程；成立文學院和社會科學院。

The local government acquired and restructured UEA, revised the University Charter, and established the School of Arts and the School of Social Sciences.

1991

成立法學院、葡亞研究中心。

The Faculty of Law and the Research Centre for Luso-Asian Studies were established.

東亞大學改名為澳門大學，頒佈新的《大學章程》。

UEA was renamed 'University of Macau', and the new Charter was promulgated.

1981

澳門大學前身東亞大學成立，設有本科學院、預科學院和持續教育學院。

The University of East Asia (UEA), the predecessor of the University of Macau (UM), was founded. UEA was comprised of the University College, the College of Foundation Studies, and the College of Continuing Education.

1990

將本科三年制改為四年制，並將本科學院重組。

Undergraduate programmes changed from a three-year system to a four-year system. The University College was restructured.

1989

成立工商管理學院、科技學院、教育學院。文學院開設葡文課程。

The Faculty of Business Administration, the Faculty of Science and Technology, and the Faculty of Education were established; the School of Arts launched its first Portuguese language programme.

1993

成立日本研究中心。

The Centre for Japanese Studies was established.

1995

首個微電子芯片設計成功；成立教育研究中心和澳門法律研究中心。

UM successfully developed its first microelectronic chip; the Educational Research Centre and the Centre for Macao Law Studies were established.

1999

發佈全球首部中葡雙語發聲詞典「中葡通」；慶祝澳門回歸，舉辦一系列迎回歸座談會。

UM launched PCT, the world's first Chinese-Portuguese bilingual audio dictionary, and organised a series of seminars to celebrate Macao's return to China.

1996

與澳門本地合作機構創建澳門發展及質量研究所；參與創建澳門歐洲研究學會，開辦首個歐洲研究碩士研究生課程。

UM and several local organisations co-established the Institute for the Development and Quality, Macau. UM also co-founded the Institute of European Studies of Macau and launched the first master's degree programme in European Studies.

1997

首名博士生畢業。

The first doctoral student graduated.

1999

「校長推薦入學計劃」啟動，經澳門各中學校長推薦的優秀應屆畢業生可申請免試入讀澳大。

The Principals' Recommended Admission Scheme was launched. Under this scheme, outstanding local students recommended by their principals are eligible to apply for direct admission to UM with exemption from the entrance examination.

2001

澳門特區政府重組澳大校董會，開展修章工作，逐步實踐國際化管治模式。

The Macao SAR government restructured the University Council and initiated Charter revision in order to facilitate the implementation of an international mode of governance at the university.

2002

成立英語中心、中華醫藥研究所（現稱中華醫藥研究院）。

The English Language Centre and the Institute of Chinese Medical Sciences were established.

2003

成立資訊及通訊科技教育研究中心、工程研究及檢測中心、博彩研究所。

The Centre for Information and Communication Technology in Education, the Centre for Engineering Research and Testing, and the Institute for the Study of Commercial Gaming were established.

2007

制訂《澳門大學十年發展規劃》，首次提出覓地擴展校園。

UM formulated the Ten-Year Development Strategy, which includes the university's vision for building a new campus.

2008

首次全球招聘大學領導團隊。

UM globally recruited its top management for the first time.

1999

舉行澳門特區成立後首場畢業典禮暨榮譽博士學位頒授典禮，由首任行政長官兼澳大校監及校董會主席何厚鏵（左）、時任校長姚偉彬（右）主持。

Edmund Ho Hau Wah (left), the first chief executive of the Macao Special Administrative Region (SAR) and chancellor of UM, and then UM Rector Iu Vai Pan (right), officiated at the university's first graduation ceremony and honorary doctorate conferment ceremony after Macao's handover.

2006

澳門立法會通過《澳門大學法律制度》。澳門特區行政長官頒佈新的《澳門大學章程》。根據章程，校董會為大學最高合議機關。

The Legislative Assembly of Macao passed the new Juridical Regime of the University of Macau, and the chief executive of Macao SAR promulgated the new Charter of the University of Macau. According to the Charter, the University Council is the highest collegial organ of the university.

2009

1月，時任國家副主席習近平在澳門宣佈中央開發橫琴島，位於橫琴島的澳大新校園項目正式啟動。

In January, during his visit to Macao, then Vice President Xi Jinping announced the central government's decision to develop Hengqin Island. The new campus project officially kicked off.

2009

12月20日，時任國務委員劉延東在新校園奠基儀式上致辭，希望澳大建成一所世界一流的大學，要有一流的設施、一流的教師，培養一流的人才，創造一流的成果。

On 20 December, then State Counsellor Liu Yandong expressed hope at the new campus groundbreaking ceremony that UM would develop into a world-class university with world-class facilities, world-class faculty members, world-class graduates, and world-class achievements.

成立澳門大學發展基金會
The University of Macau Development Foundation was established.

2009

6月27日，《全國人民代表大會常務委員會關於授權澳門特別行政區對設在橫琴島的澳門大學新校區實施管轄的決定》獲得通過。

On 27 June, the National People's Congress Standing Committee adopted a bill that proposed authorising the Macao SAR to exercise jurisdiction over the new UM campus on Hengqin Island.

2009

12月20日，時任國家主席胡錦濤主持新校園奠基儀式。

On 20 December, then President Hu Jintao officiated at the groundbreaking ceremony for the new campus.

2010

成立東亞書院（現稱何鴻燊東亞書院）、珍禧書院（現稱霍英東珍禧書院）。

Two residential colleges, the East Asia College (now known as the Stanley Ho East Asia College) and the Pearl Jubilee College (now known as the Henry Fok Pearl Jubilee College), were established.

2011

成立珠海澳大科技研究院、亞太經濟與管理研究所。

Zhuhai UM Science and Technology Research Institute and the Asia-Pacific Academy of Economics and Management were established.

2011

獲國家批准設立模擬與混合信號超大規模集成電路國家重點實驗室及中藥質量研究國家重點實驗室。

UM received approval from the central government to establish two state key laboratories, namely the State Key Laboratory of Analog and Mixed-Signal VLSI, and the State Key Laboratory of Quality Research in Chinese Medicine.

2013

成立健康科學學院。

The Faculty of Health Sciences was established.

7月20日，新校園啟用，依照澳門特區法律實施管轄。

On 20 July, the new campus became operational and came under the jurisdiction of the Macao SAR.

11月5日，時任國務院副總理汪洋主持新校園啟用儀式。

On 5 November, then Vice Premier of the State Council Wang Yang officiated at the inauguration ceremony for the new campus.

2014

8月，順利完成遷校，2014/2015學年正式在新校園上課。

In August, UM completed relocation to the new campus and began to conduct all classes on the new campus in the 2014/2015 academic year.

12月20日，國家主席習近平到澳大考察。

On 20 December, President Xi Jinping visited UM.

2014

成立應用物理及材料工程研究所（現稱應用物理及材料工程研究院）。
The Institute of Applied Physics and Materials Engineering was established.

成立曹光彪書院、鄭裕彤書院、蔡繼有書院、呂志和書院、滿珍紀念書院、紹邦書院。

Six new residential colleges were established. They are Chao Kuang Piu College, Cheng Yu Tung College, Choi Kai Yau College, Lui Che Woo College, Moon Chun Memorial College, and Shiu Pong College.

2017

成立中國歷史文化中心、中葡雙語教學暨培訓中心、協同創新研究所（現稱協同創新研究院）。

The Centre for Chinese History and Culture, the Chinese-Portuguese Bilingual Teaching and Training Centre, and the Institute of Collaborative Innovation were established.

2018

成立憲法與基本法研究中心、孔子學院、微電子研究院、成立「澳門中小學生人文社科教育基地」及「澳門中小學生科技實踐基地」。

The Centre for Constitutional Law and Basic Law Studies, the Confucius Institute, the Institute of Microelectronics, the Macao Base for Primary & Secondary Education in Humanities & Social Sciences, and the Macao Base for Primary & Secondary STEM Education were established.

2016

成立張崑崙書院、馬萬祺羅柏心書院。

Two new residential colleges, namely Cheong Kun Lun College, and Ma Man Kei and Lo Pak Sam College, were established.

澳大獲澳門特區政府頒授「教育功績勳章」，為首間獲此殊榮的高等院校。

UM received the Medal of Merit-Education from the Macao SAR government, becoming the first tertiary institution in Macao to receive this honour.

2017

時任澳門特區行政長官兼澳大校監崔世安（中）、時任社會文化司司長譚俊榮（左二）、校董會主席林金城（右二）和時任校長趙偉（左一）等主持畢業典禮。
Then UM Chancellor and Macao SAR Chief Executive Chui Sai On (centre), then Secretary for Social Affairs and Culture Tam Chon Weng (2nd from left), UM University Council Chair Lam Kam Seng (2nd from right), and then Rector Wei Zhao (1st from left) officiated at the university's graduation ceremony.

2018

國家教育部贈予澳大「博雅之璧」，喻意弘揚中華優秀傳統文化和美德。

The Ministry of Education presented a gift to UM, 'The Wall of Great Wisdom' sculpture, which conveyed the hope that UM would continue to promote traditional Chinese culture and virtues.

2018

獲國家批准設立第三所國家重點實驗室：智慧城市物聯網國家重點實驗室。

UM received approval from the central government to establish its third state key laboratory, namely the State Key Laboratory of Internet of Things for Smart City.


2018

澳門特區行政長官兼校監崔世安（中）、校董會主席林金城（左二）和校長宋永華（右二）等主持畢業典禮。

Then Macao SAR Chief Executive and UM Chancellor Chui Sai On (centre), University Council Chair Lam Kam Seng (2nd from left), and UM Rector Yonghua Song (2nd from right) officiated at the university's graduation ceremony.

2018

國家主席習近平給澳大等高校回信，指示澳門高校培養更多愛國愛澳人才，創造更多科技成果，助力澳門經濟適度多元可持續發展，助力粵港澳大灣區建設。

President Xi Jinping sent a reply letter in response to a joint letter submitted by representatives of higher education institutions in Macao. In the letter, President Xi expressed his hope that higher education institutions in Macao would nurture more graduates who love the country and Macao and attain more achievements in science and technology, so as to help promote economic diversification and sustainable development of Macao as well as the development of the Guangdong-Hong Kong-Macao Greater Bay Area.
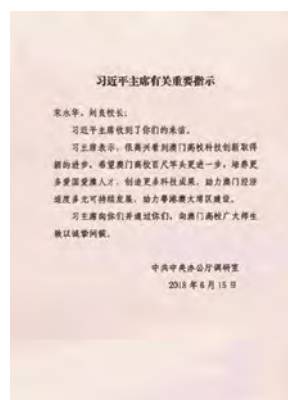
2019

工商管理學院成為澳門第一所獲國際商學院聯合會認證的商學院。創辦工商管理博士學位課程（DBA）。

The Faculty of Business Administration received accreditation from the Association to Advance Collegiate Schools of Business, becoming the first business school in Macao to be accredited by the association. In the same year, FBA launched a Doctor of Business Administration programme.

2019

10月1日，慶祝中華人民共和國成立70週年的大型巡遊在北京舉行，澳大標誌性建築物圖書館的模型在澳門彩車上亮相。

On 1 October, a model of UM's library, a landmark on the UM campus, was showcased on Macao's float during the National Day Parade held in Beijing in celebration of the 70th anniversary of the People's Republic of China.

2019

澳大透過珠海澳大科技研究院在橫琴新區建立產學研示範基地。

UM established an industry-academia collaboration base on Hengqin Island through the Zhuhai UM Science and Technology Research Institute.

2019

崇文樓揭幕，滙聚人文社科高等研究院、中國歷史文化中心、澳門研究中心、孔子學院、中葡雙語教學暨培訓中心、藝術設計中心，以及澳門中小學生人文社科教育基地等文化教研單位。

In June, the Cultural Building was inaugurated. The building houses the Institute of Advanced Studies in Humanities and Social Sciences, the Centre for Chinese History and Culture, the Centre for Macau Studies, the Confucius Institute, the Chinese-Portuguese Bilingual Teaching and Training Centre, the Centre for Arts and Design, and the Macao Base for Primary & Secondary Education in Humanities & Social Sciences.

2019

協同創新研究院轄下成立認知與腦科學研究中心、人工智能與機器人研究中心、數據科學研究中心及創新創業中心。

The Centre for Cognitive and Brain Sciences, the Centre for Artificial Intelligence and Robotics, the Centre for Data Science, and the Centre for Innovation and Entrepreneurship were established under the Institute of Collaborative Innovation.

2020

區域海洋研究中心揭牌。

The Centre for Regional Oceans was unveiled.

2020

公共行政培訓中心啟用暨首屆公務人員領導力培訓班開課典禮，助力澳門特區政府人才梯隊建設。

UM held an opening ceremony for the Public Administration Training Centre and the inaugural leadership training course designed for local civil servants, to help build a talent pipeline for the Macao SAR government.

2020

創新創業中心獲批為「國家級眾創空間」。

UM's Centre for Innovation and Entrepreneurship received approval to join China's national system of co-working space.

2021

1月17日，澳大舉行40週年校慶啟動儀式。

On 17 January, UM held an opening ceremony for the celebration of its 40th anniversary.

UNIVERSIDADE DE MACAU

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