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Welcome to the 10th issue of the FAST Newsletter!

Since its founding in 1992, the Faculty of Applied Science and Textiles (FAST) has built a reputation for outstanding research and education locally and worldwide. Although the four departments of FAST are unique in their own disciplines, they share the objective of striving for academic and research excellence.

In recognition of the recent development of the Institute of Textiles and Clothing (ITC) and its growing reputation as a world-class fashion school, I am pleased to announce that the Senate has approved the detachment of ITC from FAST to become the new School of Fashion and Textiles (SFT). FAST will be renamed the Faculty of Science (FS) with effect from 1 July 2022. I wish to take this opportunity to send our heartfelt congratulations to the SFT and pledge our support for its efforts to scale new heights in the future.

From developing the world's first anti-viral 3D printing material to donating our reusable antiviral PU30[™] face masks to local families and minority groups, the Faculty is committed to joining hands with the community to fight the COVID-19 pandemic. In line with PolyU's motto, "To learn and to apply, for the benefit of mankind", we address pressing societal issues by transforming research excellence into impactful innovations.

歡迎閱讀應用科學及紡織學院第十期學院通訊!

應用科學及紡織學院於1992年成立,我們的教研成就早已在 本地和全球享負盛名。學院四個獨當一面的學系均擁有一致目 標,致力在學術與研究上追求卓越。

我很高興向各位宣佈,教務委員會為表揚紡織及服裝學系的近 年發展,進一步肯定其作為世界級時裝學院的日隆聲譽,較早 前已通過紡織及服裝學系脫離應用科學及紡織學院,升格為時 裝及紡織學院。同時,應用科學及紡織學院將於2022年7月1 日起改名為理學院。我謹藉此機會向時裝及紡織學院送上擊誠 祝賀,並承諾我們將於未來繼續支持新學院再創高峰。

由研發全球首款防病毒三維打印物料,到向基層家庭和少數 族裔捐贈我們的可重用防病毒PU30™口罩,學院一直竭力與 社區攜手對抗新冠疫情。我們秉持了理大「開物成務 勵學利 民」的校訓,積極把研究成果轉化為具影響力的創新方案,回 應最迫切的社會問題。 FAST's research achievements are recognised globally. We are delighted to announce that the Faculty garnered two silver medals in this year's online special edition of the International Exhibition of Inventions of Geneva. The award-winning projects were led by Dr Chang Jinhui, Gail of the Department of Applied Biology and Chemical Technology (ABCT) and Dr Shou Dahua of ITC. In other excellent news, Prof. Li Pei of ABCT and a team comprising Prof. Tao Xiaoming, Prof. Xu Bingang and Dr Hua Tao of ITC won the inaugural PolyU President's Awards for Outstanding Achievement in Knowledge Transfer in 2021. We congratulate the award winners on their remarkable contributions.

As we embark on the next chapter in the Faculty's history, we are dedicated to making the new FS an internationally acclaimed hub providing high-quality education and groundbreaking research and knowledge transfer projects for the betterment of our society. I hope that you would enjoy the final issue of the FAST Newsletter. We wish to express our warmest gratitude for your patronage of FAST over the years, and we sincerely hope that you will continue to support us on our new journey as FS.

Prof. Wong Wai-yeung, Raymond Dean, Faculty of Applied Science and Textiles Clarea Au Professor in Energy Chair Professor of Chemical Technology

本院的科研成就享譽全球。我們很榮幸宣佈,本院於本年日內瓦 國際發明展網上特別版中勇奪兩個銀獎。得獎項目分別由應用生 物及化學科技學系的常金輝博士,以及紡織及服裝學系的壽大華 博士率領。我們還有其他好消息,就是應用生物及化學科技學系 的李蓓教授,以及由紡織及服裝學系陶肖明教授、徐賓剛教授和 華濤博士組成的團隊,贏得理大首屆校長特設傑出知識轉移獎。 各位得獎者憑藉傑出成就獲非凡嘉許,實在可喜可賀。

學院即將在發展歷程上開展新的一頁,我們將繼續努力,推動理 學院成為國際知名樞紐,提供優質教育、破舊立新的研究和知識 轉移項目,為社會福祉作出貢獻。希望你們喜歡閱讀以應用科學 及紡織學院名義出版的最後一期學院通訊,也衷心感謝各位多年 來對本院的支持,希望在理學院的新旅程中繼續與你們互勵互 勉。

> 應用科學及紡織學院院長 歐雪明能源教授及化學科技講座教授 黃維揚教授

In Search of New Therapeutic Strategies for Treatment of Liver Cancer

Associate Professor, Department of Applied Biology and Chemical Technology

Liver cancer is the sixth most common type of cancer worldwide, and one of the deadliest. In Hong Kong, it accounts for a fifth of all deaths from cancer, claiming thousands of lives every year.

If the disease is caught early enough, it can be treated by curative methods such as liver transplantation. However, most patients are diagnosed at an advanced stage. Chemotherapy



and targeted therapies can help to slow the spread of liver cancer, but survival rates are low.

Recently, immune checkpoint therapies have provided new hope for cancer patients, as they can control tumor growth. However, only 20% of patients respond well to such therapies in the long term, due to immune resistance. Tremendous efforts are currently being made to increase the response rate of this treatment.

At the forefront of these efforts is **Dr Lee Kin-wah**, **Terence**, Associate Professor in the Department of Applied Biology and Chemical Technology. Dr Lee's research takes an innovative multi-pronged approach to improving the efficacy of existing treatment options.

First, Dr Lee and his team have systematically identified druggable targets that regulate the survival of cancer stem cells, which are responsible for tumor relapse. Second, the researchers target the protein kinases that help liver cancer cells to evade the surveillance of our immune systems, seeking to promote immune attack on cancer cells. The third target of Dr Lee's research is the gut microbiota, which plays a vital role in regulating the immune system. The team found that certain gut bacteria, when consumed daily, can slow tumor growth and complement current immune checkpoint therapies.

Through this novel combination of strategies, Dr Lee is helping to overcome longstanding challenges in oncology research.

尋找肝癌新的治療策略

— 李建華博士專訪 應用生物及化學科技學系副教授

肝癌是全球第六大最常見癌症,也屬最致命的一種。全港每年 有數千人因肝癌離世,佔癌病死亡人數五份之一。

肝癌如能及早發現,可以採取肝臟移植等方法治療。然而,大 多數患者確診時已是晚期。化療和標靶治療有助減慢肝癌擴 散,但存活率很低。最近,免疫檢查點療法為癌症患者帶來了 新希望,因為它們可以控制腫瘤增生。然而因為免疫抵抗,只 有百份之二十的患者對此類療法產生長期良好反應。醫學界目 前正盡力提高療法反應率。 應用生物及化學科技學系副教授**李建華博士**正是走在相關 研究前沿的一人·他的研究採用了多管齊下的創新方法來提高 現有方案的療效。

李博士和團隊首先有系統地找出調節癌症幹細胞存活的藥物標 靶,這些幹細胞是腫瘤復發的原因。研究人員的第二項任務, 是對準幫助肝癌細胞逃避免疫系統監視的蛋白質激酶,力求加 強對癌細胞的免疫攻擊。李博士研究的第三個目標,是調節在 免疫系統方面舉足輕重的腸道微菌群。研究團隊發現每天食用 某些腸道細菌,可以減緩腫瘤增生,能配合現有的免疫檢查點 療法。

李博士以創新思維結合多種治療策略,務求克服腫瘤學研究的 長期挑戰。

A Rational Theory of the Disposition Effect

- Interview with **Prof. Dai Min** Chair Professor of Applied Statistics and Financial Mathematics, Department of Applied Mathematics

A few decades ago, researchers discovered a puzzling anomaly in investors' behaviour. Investors tend to be reluctant to sell assets that have lost values, hoping that their investments will eventually turn around and generate profits. Meanwhile, they prematurely sell assets that have made financial gains. This counterproductive habit is known as the "disposition effect."

So far, the disposition effect has been discussed mainly in terms of investors' behavioural biases. However, behavioural



finance studies have shed little light on certain related trading patterns, such as the V-shaped probability of selling or buying more shares against unrealized profits/ losses.

"It is difficult for behavioural theories to explain this V-shaped pattern," says **Prof. Dai Min**, Chair Professor of Applied Statistics and Financial Mathematics, the Department of Applied Mathematics. "In addition, as far as we know, no theoretical models have been proposed to explain other well-documented disposition effect related patterns."

To fill this research gap, Prof. Dai and his team proposed a rational (as opposed to behavioural) mechanism: portfolio rebalancing. This strategy enables investors to control risk through dynamic asset allocation. The researchers developed a model to examine whether portfolio rebalancing could help explain the disposition effect and related trading patterns among retail investors.

Their results were illuminating. "While we believe that behavioural explanations are essential in understanding the disposition effect and related trading patterns," says Prof. Dai, "portfolio rebalancing may also constitute a significant driving force." Complementing behavioural research, the researchers propose the first rational theory of the disposition effect.

For Prof. Dai and his team, the next challenge will be to separate the rational and behavioural components of the disposition effect to shed further light on this puzzling phenomenon.



— **戴民教授**專訪 應用數學系應用統計及金融數學講座教授

幾十年前,研究人員在投資者行為中發現了一種有趣的異象。 投資者往往不願出售已虧損的資產,希望最終能逆轉獲利。與 此同時,他們都過早出售有盈利的資產。這種事與願違的投資 習慣稱為「處置效應」。

到目前為止,處置效應的討論主要從投資者行為偏差角度出發。然而,行為金融學研究對某些與此相關的交易模式卻未能提供太多線索,其中,V形概率模式,即當持有的股票遭受損失或有盈利時投資者會傾向於購買更多或出售這些股票,便是一例。

應用數學系的應用統計及金融數學**戴民講座教授**說:「行 為理論很難解釋這種V形模式。此外,據我們所知,現時仍未 有理論模型可以解釋這些與處置效應相關的交易模式。」

為填補此研究缺口,戴教授和他的團隊提出一套理性(而不是 行為)解釋機制:投資組合再平衡,即投資者通過動態資產配 置來控制風險。研究人員建立一個模型來探討投資組合再平衡 能否有助解釋散戶投資者的處置效應和相關交易模式。

團隊的研究結果很富啟發性。戴教授說:「雖然我們相信行為 金融解釋是瞭解處置效應和相關交易模式的基礎,但投資組合 再平衡也可以成為重要的驅動因素。」研究團隊提出了首個關 於處置效應的理性理論,能與行為研究發揮相輔相成的作用。

戴教授團隊的下一個挑戰,將是區分處置效應的理性和行為成 份,以進一步闡明這種令人費解的現象。

Highly Adaptive Bioinspired Vision Sensors

Assistant Dean (Research), FAST; Associate Professor, Department of Applied Physics

Artificial vision systems are networks of cameras and computers that capture and process images for tasks such as facial recognition and quality-control inspection. To perform well, they need to be able to "see" objects in a wide range of lighting conditions. This is conventionally achieved using complex circuitry and algorithms, which compromise efficiency. It is nearly impossible for traditional artificial vision systems to process large volumes of visual information under a wide range of light intensities.

Neuromorphic visual systems – inspired by the human retina – may be the answer, according to **Dr Chai Yang**, Associate Professor in the Department of Applied Physics. Dr Chai and colleagues designed smart vision sensors capable of emulating and even surpassing the functions of the human visual system. These bioinspired vision sensors have an effective perception range even wider than that of the human retina.

To mimic the brain's efficient processing of information, the researchers' innovative solution combines image sensing, storage, and processing in a single device. As proof of concept, the researchers found that their sensors significantly increased the range of effective detection under different light intensities and improved the accuracy of image recognition.

"Our vision sensor shows real potential as the front end to simplify the circuitry of a neuromorphic vision system," Dr Chai tells us, "It may offer the basis for a visual system that can adapt to

高度自適應的生物啟發視 覺傳感器

— **柴揚博士**專訪 應用科學及紡織學院助理院長(研究)及 應用物理學系副教授

人工視覺系統是由相機和信息處理單元組成的,可以用來為面 部識別和品質控制檢查等工作進行圖像拍攝和處理。這些硬件 必需能夠在各種照明條件下「看到」物件,才能有效地實現應 有效能。一般利用複雜電路和算法的做法會增加能耗,而傳統 的人工視覺系統無法在各種光強度下處理大量視覺資訊。

應用物理學系副教授**柴揚博士**表示,神經形態視覺系統的 靈感源自人類視網膜,可以有效地解決以上問題。柴博士帶領 團隊攜手設計了能夠模擬甚至超越人類視覺功能的智能視覺傳 different background lighting conditions." The researchers' important findings were recently published in *Nature Electronics* and reported in *Nature* as a Research Highlight.

The novel bioinspired sensors designed by Dr Chai and his team could usher in the next generation of artificial-vision systems used in autonomous vehicles and manufacturing, as well as finding exciting new applications in edge computing and the Internet of Things. The researchers' in-sensor computing approach could even be extended to non-visual physical inputs to enhance auditory, tactile, thermal, or olfactory sensing.



感器。這些受生物啟發的視覺傳感器的有效感知範圍,比人類 視網膜更廣。

為了模仿大腦高效處理資訊,研究人員採用了創新方案,把圖 像傳感、儲存和處理功能結合在同一設備中。研究人員發現視 覺傳感器能顯著增加在各種照明環境下的有效偵測範圍,也提 高了圖像識別準確性。

柴博士分享說:「我們的視覺傳感器有潛力簡化神經形態視覺 系統的電路。」它可以充當視覺系統的基礎,用來適應不同背 景光照條件。研究人員的重要發現最近先後於《自然電子》上 發表,並獲《自然》作研究亮點報導。

由柴博士和其團隊設計的新型生物啟發視覺傳感器可以推動用 於自動駕駛汽車和製造業的下一代人工視覺系統,並在邊緣計 算和物聯網中發掘新應用。研究人員的傳感器內置計算方法甚 至可以擴展到非視覺物理輸入,增強聽覺、觸覺、熱感或嗅覺 傳感。

How does Sustainability Reporting Affect Firms' Operational Efficiency and Profitability?

– Interview with **Prof. Christina Wong** Associate Dean of Graduate School; Professor, Institute of Textiles and Clothing

In uncertain times, and facing the onslaught of climate change, stakeholders worldwide are calling on businesses to report the environmental, social, and governance (ESG) impact of their activities. Sustainability reporting, firms' voluntary disclosure of ESG information, has increased a hundredfold in the last 20 years. By demonstrating firms' commitment to integrating ESG issues into their strategic development, sustainability reporting can make firms more attractive to investors.

Studies have explored the responses of the market to firms' sustainability reporting. Yet we still know little about how such disclosure – which requires tremendous investment and internal restructuring – influences firms themselves. According to **Prof. Christina Wong**, Professor in the Institute of Textiles and Clothing, this is a major research gap. "As sustainability disclosure is costly and influences internal stakeholders (e.g., employees and management)," explains Prof. Wong, "it is important to examine how it may affect firms' performance."

Using a 20-year dataset, Prof. Wong and her team compared the operational efficiency and profitability of firms that engaged in sustainability disclosure ("reporting firms") with those of firms that did not report their sustainability performance ("nonreporting firms"). The researchers also considered the impact of media exposure, because firms that attract more attention are under greater pressure to fulfil their ESG promises without compromising their financial performance. Not only were the reporting firms more efficient than their non-reporting counterparts, but they also made more money. Firms benefited more from sustainability reporting when they faced greater public scrutiny. "If firms have more exposure and report more frequently," explains Prof. Wong, "they are more profitable." This is good news for firms, investors, and the environment.

However, there is still a long way to go. "Although we talk about mitigating climate change," Prof. Wong warns, "much more innovative research is needed to find a path to true sustainability."



可持續發展報告如何影響企 業營運效率和盈利能力?

— **黃詠恩教授**專訪 研究生院副院長及紡織及服裝學系教授

在充滿不確定性的時代,全球持份者面對氣候轉變的衝擊,紛 紛希望企業就其活動匯報相關的環境、社會和管治(ESG)影 響。在過去二十年,以可持續發展報告方式匯報ESG情況的企 業已增加逾百倍。企業透過可持續發展報告展示其致力在策略 發展中納入ESG課題,增加對投資者的吸引力。

企業可持續發展報告需要投入大量人力物力,包括資金和內部 重組。儘管不少研究已探討過市場對企業可持續發展報告的反 應,但我們對於此類披露如何影響企業本身仍所知甚少。紡織 及服裝學系**黃詠恩教授**認為此乃重大研究缺口。她表示: 「可持續發展披露所費甚巨,而且會影響員工和管理層等內部 持份者,所以審視它如何影響企業表現相當重要。」

黃教授和團隊以一個廿年的數據庫,比較有和沒有投入可持續 發展披露的企業在營運效益與盈利能力上的差別。有鑑於備受 注視的企業,在平衡實踐ESG承諾和不令財務表現受損方面有 較大壓力,研究人員也考慮它們的媒體曝光度。

研究人員發現有匯報可持續發展的企業不僅較沒有匯報的更具 效率,進賬也較多,可見企業面對更嚴謹的公眾監察時,能透 過可持續發展報告受益更多。黃教授說:「曝光率較高和更頻 密匯報的企業有更大的盈利能力。」這對於企業、投資者和環 境來說都是好消息。

然而,前路仍然非常漫長。黃教授說:「儘管我們有談論緩解 氣候變化,但要實現真正的永續發展,仍需得到很多創新研究 的支持,才能開辟新的路徑。」

Faculty Awards for Outstanding Achievement 2021

Warmest congratulations to the following FAST academic members on receiving the Faculty Awards for Outstanding Achievement 2021 in Teaching, Research & Scholarly Activities and Technology Transfer Activities.

2021年學院特設傑出表現 / 成就獎

衷心恭賀下列教職人員分別就教學、研究與學術活動以及知識轉移等範疇獲得「2021年學院特設傑出表現 / 成就獎」。

Individual Awards

Teaching

Ms Liu Pak-yiu, Nico, Instructor, ITC

Research and Scholarly Activities: Outstanding Researcher Prof. Qiao Zhonghua, Professor, AMA

Research and Scholarly Activities: Outstanding Young Researcher Dr Zhang Biao, Assistant Professor, AP

Knowledge Transfer: Industry

Prof. Li Pei, Professor, ABCT Prof. Kinor Jiang, Professor, ITC Prof. Li Li, Professor, ITC Dr Liu Rong, Assistant Professor, ITC

Knowledge Transfer: Society

Dr Joanne Yip, Associate Dean (FAST); Associate Professor, ITC

Team Awards

Teaching

Dr Fridolin Ting, Senior Teaching Fellow, AMA Dr Sze Nung-sing, Raymond, Associate Professor, AMA Dr Bob He, Teaching Fellow, AMA Dr Charles Lee, Instructor, AMA Mr Frankie Tsoi, Instructor, AMA Mr Angus Yeung, Instructor, AMA Dr Lawrence Chan, Project Fellow, AMA Ms Winky Tsang, Project Assistant, AMA

Services

Dr Chiou Jiachi, Amber, Assistant Professor, ABCT Dr Wong Sze-chuen, Cesar, Associate Professor, HTI (Also affiliated member of ABCT)

Outstanding Alumni Award of PolyU Faculty of Applied Science and Textiles 2022

Congratulations to Prof. Tsang Shik-chi, Edman and Mr Kwok Chi-hung, Stanley on receiving the Outstanding Alumni Award of PolyU Faculty of Applied Science and Textiles 2022 in "Scholarly Achievement" and "Entrepreneurial Achievement", respectively! The award aims to recognize and acknowledge the remarkable achievements and contributions of FAST alumni to PolyU and the community.

Prof. Tsang Shik-chi, Edman obtained the Higher Diploma in Chemical Technology in 1987. He is currently a Professor of Inorganic Chemistry and the Head of Wolfson Catalysis Laboratory at the University of Oxford. Prof. Tsang has won a number of international awards and has published more than 450 referred publications including *Science, Nature* and *Nature* sister journals.

Mr Kwok Chi-hung, Stanley obtained the Master of Arts in Fashion and Textiles (Global Fashion Management) in 2013. Mr Kwok applied the patented heat-conductive knitting technology in a variety of wearable items and created a new lifestyle brand named KnitWarm with the vision of developing smart textiles for thermal protection and pain relief to improve wearers' quality of life.

理大應用科學及紡織學院傑出校友2022

恭喜曾適之教授和郭志雄先生分別獲選為理大應用科學及紡 織學院 2022 年度「學術成就」及「創業成就」傑出校友! 這獎項旨在表揚優秀校友於不同領域對理大和社會的卓越成 就和貢獻。





曾適之教授於1987年取得化學科 技高級文憑,現任牛津大學無機 化學教授及Wolfson催化實驗室主 任。曾教授曾獲頒多項國際獎項並 發表超過450篇學術論文,包括國 際知名的學術雜誌《科學》、《自 然》及《自然》姊妹期刊等。

郭志雄先生於2013年取得服裝及 紡織碩士學位(全球化服裝管理)。 郭先生將導熱針織的專利技術應用 於各種可穿戴物品,並創立了名為 KnitWarm的智能服裝品牌。品牌 旨在開發有效保暖以及能舒緩痛症 的智能紡織品,改善穿著者的生活 質素。

FAST Launches PolyU's 85th Anniversary Webpage and Celebrations

應用科學及紡織學院推出理大八十五週年校慶特別網頁及慶祝活動



In celebration of PolyU's 85th anniversary, the Faculty of Applied Science and Textiles (FAST) has organised a series of celebratory activities under the theme of "FAST Connects to Create IMPACT".

On the occasion of PolyU's 85th anniversary, the Faculty is proud to announce the launch of a special webpage dedicated to mark this significant milestone. Go check it out and get the latest information about the 85th anniversary celebration!

為慶祝理大八十五周年校慶·應用科學及紡織學院舉辦了一系列以「FAST Connects to Create IMPACT」為主題的慶祝活動。

為迎接理大八十五周年校慶,學院推出校慶特別網頁,內容涵蓋全年慶祝活 動,敬請密切留意校慶網頁的最新資訊!

FAST Activities to Celebrate PolyU's 85th Anniversary 慶祝理大八十五周年校慶的活動

FAST Online Mini-lecture Series 2022 (March)

FAST Mini-lecture Series is designed for secondary school students to understand the study fields of science and keep abreast of cutting-edge research innovations. A total of 7 lectures were conducted on Zoom during the period of 5 March to 26 March 2022, covering a wide spectrum of interesting scientific discoveries in Biology, Chemistry, Mathematics and Physics. On top of the all-time favorite topic for detective drama lovers, 'Chemistry in Crime Scene Investigations', trending topics such as 'Doing Data Science: Analysis and Visualisation of the Popularity of Celebrities (MIRROR) and "What Biotech can do for COVID-19?' were added to this series. We are thrilled to have attracted over 1,200 participants to join this series.

應用科學及紡織學院:網上專題講座系列2022 (三月)





Research at FAST Seminar Series 2021/22

The Faculty of Applied Science and Textiles (FAST) hosted the Research at FAST Seminar Series 2021/22 to celebrate PolyU's 85th anniversary. Researchers from FAST were invited to share their latest research and findings in eight seminars under four themes, namely Materials Science, Drug Discovery, Big Data and Artificial Intelligence, and Smart Wearables. Attracted more than 300 attendees, this seminar series provided a platform for interaction between FAST researchers and other PolyU colleagues, nurturing cross-disciplinary research collaborations within the PolyU community.

Research at FAST研討會系列2021/22

應用科學及紡織學院的Research at FAST研討會系列2021/22 已圓滿結束,是理大八十五周年校慶活動之一。透過八場研討 會,學院的科研人員與參加者分享最新的研究和發現,內容涵 蓋材料科學、藥物研發、大數據與人工智能、以及智能穿戴科 技四個課題。研討會系列反應熱烈,吸引超過300多名理大教職 員及研究生參加,致力推動跨學科的研究合作。

FAST Research Workshop Series 學院科研工作坊系列

To celebrate PolyU's 85th anniversary, the Faculty of Applied Science and Textiles (FAST) invited experts from around the world to take part in a workshop series to discuss hot research topics, promote academic exchange and explore research collaboration opportunities. 適逢理大八十五週年校慶·應用科學及紡織學 院舉辦了以下科研工作坊·匯聚海外及本地的 傑出學者及專家·深入探討最熱門的科研題 目·促進各院校間的學術交流和科研合作。

FAST Workshop Series on Two-dimensional Materials and Devices

Atomically thin two-dimensional (2D) layered materials have great scientific and technological value. The Faculty organised the online FAST Workshop Series on Twodimensional Materials and Devices from 23 to 25 March 2022, enabling experts in the field to exchange ideas and explore collaboration opportunities. This 3-day workshop brought together 16 distinguished scholars from overseas and local universities, including Massachusetts Institute of Technology, the University of Texas at Austin, the University of Washington, Cornell University, the University of Hong Kong and PolyU. The event also attracted editors of international journals. More than 700 attendees gathered to hear the distinguished speakers share their insights. In his welcoming remarks, Prof. Wong Wai-yeung, Raymond, Dean of FAST, thanked the speakers for their support for the workshop. 'Our Faculty is proud to be able to provide this platform to foster the exchange of research ideas and support inter-institutional collaborations," said Prof. Wong.

FAST二維材料與器件網上研討會

二維(2D)層狀材料具有原子級別的厚度,在科學及技術層面上 均具有重要的研究意義。應用科學及紡織學院於2022年3月23日 至25日舉辦了二維材料與器件網上研討會,促進專家在這個課題 上交流及合作。為期3天的研討會匯聚了來自麻省理工學院、德 州大學、華盛頓大學、康乃爾大學、香港大學及理大等海內外院 校,以及國際期刊編輯共16位傑出學者,他們的卓越見解和分享 吸引超過700名參加者。應用科學及紡織學院院長黃維揚教授在 歡迎辭中感謝講者對研討會的支持。黃教授對學院能夠以研討會 為平台,促進和支持各院校間的研究交流和合作表示榮幸。





FAST Workshop Series: Hong Kong–Singapore Bilateral Workshop on Functional Materials

In the last decade, FAST researchers have pursued dynamic interdisciplinary research on materials. Complementing research on nanomaterials and advanced fibrous materials and technology, the Materials and Sustainable Chemistry (MSC) focuses on efficient renewable energy conversion and storage for sustainable development, aligning with industrial interests and the Hong Kong government's smart city initiative.

Researchers in the field of functional materials in both Hong Kong and Singapore have achieved worldwide recognition. FAST organised the Hong Kong–Singapore Bilateral Workshop on Functional Materials from 19 to 20 May 2022. This online workshop attracted 24 speakers from Singaporean and local universities, including the National University of Singapore, Nanyang Technological University, City University of Hong Kong and PolyU. In addition, researchers from the Institute of Materials Research and Engineering of the Agency for Science, Technology and Research shared their insights and research in the workshop.

FAST香港-新加坡功能材料雙邊研討會

在過去十年間,FAST研究人員在材料領域上積極促進跨學科研究。配合納米材料和先進纖維材料與技術研究,材料與可持續 化學 (MSC)聚焦於有利可持續發展的高效可再生能源轉換和儲存,與相關產業利益和香港特區政府倡議的智慧城市發展方向 一致。

香港和新加坡兩地研究人員在功能材料的領域享有盛譽。應用 科學及紡織學院於2022年5月19和20日舉辦了香港一新加坡功 能材料雙邊網上研討會·匯聚24位來自新加坡國立大學、南洋 理工大學、香港城市大學和理大的學者·以及新加坡科技研究 局轄下材料研究與工程研究所的專家及研究人員·分享灼見和 研究。

Ultrafast, Sensitive and Portable Detection of COVID-19 IgG Using Flexible Organic Electrochemical Transistors

Antibody test is essential to infection diagnosis, seroepidemiological study and vaccine evaluation of COVID-19. However, convenient, fast and accurate antibody detections remain a challenge in this

protracted fight. Prof. Yan Feng of the Department of Applied Physics and his team have developed an ultrafast, low cost, label-free and portable SARS-CoV-2 IgG detection platform based on organic electrochemical transistors, which can be remotely controlled by a mobile phone. By optimizing the test conditions including ion concentrations, pH values and voltage signal, they have realized specific antibody detections of SARS-CoV-2 IgG within several minutes with a detectable region from 10fM

to 100nM, which can cover serum SARS-CoV-2 IgG levels in human. The portable sensors are expected to find promising applications in the diagnosis and prognosis of COVID-19. The development has been published in *Science Advances*. This groundbreaking technology has been released to the press and media, and successfully raised wide concerns and positive responses after the press conference in PolyU.

利用有機電化學晶體管實現超快速、靈敏和 便攜式COVID-19 IgG抗體檢測

> 抗體檢測對於COVID-19的感染診 斷、血清流行病學研究和疫苗評估 至關重要。然而,在這場曠日持久 的鬥爭中,方便、快速和準確的抗 體檢測仍然是一個挑戰。應用物理 學系嚴鋒教授及其團隊開發了一種 基於有機電化學晶體管的超快速、 低成本、免標記、可通過手機控 制的便攜式檢測平台。通過優化檢 測條件·可於數分鐘內實現對新冠 抗體lgG的特異性檢測、檢測範圍 從10fM到100nM,可覆蓋人體內 血清的抗體水平。這便攜式傳感器 有望應用於COVID-19的診斷和預 測,研究成果亦已刋登於《Science Advances》。而此項技術於理大新 聞發佈會報導後,引起廣泛關注。

In 2021/2022, academics and researchers of FAST have secured HKD150 million funding from different competitive grant schemes and collaborative funds for their research projects. Below are the major external grants obtained:

應用科學及紡織學院的學者及研究人員的科研項目於2021/2022共獲得1.5億港元外界科研資金支持,以下為部分主要項目:

Funding source	Principal Investigator/	Funding Amount
	Co-Principal Investigator	(HKD)
ANR/RGC Joint Research Scheme 2021/22	Dr Ma Cong, ABCT	\$2,968,143
Croucher Innovation Awards 2021	Dr Leung King-chi, Franco, ABCT	\$5,000,000
Green Tech Fund 2021/22	Dr Lee Yoon-suk, ABCT	\$2,783,920
Health and Medical Research Fund (HMRF)	Dr Poon Chui-wa, Christina, ABCT Prof. Wong Man-sau, ABCT	\$1,484,580 \$1,500,000
Huawei Technologies Co. Ltd.	Prof. Sun Defeng, AMA	\$2,593,324
ITF-Innovation and Technology Support Programme (ITSP)	Dr Chai Yang, AP Prof. Hu Hong, ITC Dr Hua Tao, ITC Prof. Kan Chi-wai, ITC Dr Mok Pik-yin, Tracy, ITC Dr Shou Dahua, ITC Prof. Tao Xiaoming, ITC Dr Yick Kit-lun, ITC Dr Joanne Yip, ITC	\$1,199,400 \$2,450,000 \$1,891,000 \$3,777,800 \$6,701,509 \$1,839,926 \$7,995,813 \$1,399,780 \$1,398,828
ITF-Mainland-Hong Kong Joint Funding Scheme (MHKJFS)	Dr Chen Sibao, ABCT	\$1,890,000
	Prof. Wong Man-sau, ABCT	\$1,999,988
ITF-Midstream Research Programme for Universities (MRP)	Prof. Zhao Yanxiang, ABCT	\$2,497,800
ITF-Partnership Research Programme (PRP)	Prof. Jiang Shou-xiang, Kinor, ITC Prof. Zheng Zijian, ITC	\$4,100,000 \$2,985,400
ITF-Public Sector Trial Scheme (PSTS)	Prof. Li Li, ITC	\$2,491,572
ITF-Guangdong-Hong Kong Technology Cooperation Funding Scheme (TCFS)	Dr Tsang Yuen-hong, Peter, AP	\$1,500,000
NSFC/RGC Joint Research Scheme 2021/22	Dr Huang Bolong, ABCT	\$1,109,685
RGC Areas of Excellence (AoE) Scheme	Prof. Hao Jianhua, AP	\$ 999,960
	Prof. Lau Shu-ping, Daniel, AP	\$3,999,840
RGC Collaborative Research Fund 2021/22 (Equipment grant)	Prof. Wong Wai-yeung, Raymond, ABCT Prof. Chen Xiaojun, AMA	\$7,964,914 \$3,099,659
RGC Senior Research Fellow Scheme 2021/22	Prof. Hao Jianhua, AP Prof. Zheng Zijian, ITC	\$7,798,380 \$7,798,380
深港澳科技計劃項目(C類項目)	Dr Chai Yang, AP Prof. Chen Wei, ITC	\$1,219,057 \$1,219,057

Teaching philosophy: *Creating a Positive Learning Environment and Motivating Students are just as Important as Teaching Basic Skills*

My most important strategy for realizing students' goals is to teach them with enthusiasm. This has always been my mandate.

My goal in the classroom is to teach my students how to creatively produce design ideas and concepts, appropriately apply their newly learned technical knowledge, critically evaluate garment fit and workmanship, and provide suggestions for precise garment enhancements. These skills equip graduates to work efficiently and effectively in the industry. I truly believe that basic theories are the fundamental tools for creating practical knowledge. This approach enhances students' motivation to learn and enhances their self-confidence. It is equally vital to recognize the diversity of students' needs, backgrounds, and reasons for learning. To appeal to my students, my lectures and tutorial exercises must be interesting, interactive, and meaningful at the individual level.

My teaching philosophy consists of three elements. The first element is becoming acquainted with my students as

individuals. I learn each student's name, academic major, career plan, and hobbies from a form that they complete at the beginning of the semester. These insights help me to tailor my teaching to suit my audience. In my lectures and tutorial exercises, I use examples that are relevant to my students. I also strive to create an environment that is conducive to learning. I establish clear ground rules without being inflexible: they can expect good teaching from me, and I expect them to produce their best work. For example, I generally expect to

receive assignments on time, but if the planned deadline conflicts with a deadline for another subject, I am willing to compromise and postpone the submission date.

Second, I create innovative teaching materials to make the course content engaging, practical, and interactive. I often use props in class for minigames or conduct group discussion exercises. While such activities take

Ms Liu Pak-yiu, Nico

Instructor Institute of Textiles and Clothing Awardee, FAST Faculty Awards 2021 (Teaching) additional time, they are enlightening and instructive for new students who lack background knowledge of the course subject. Practical and creative exercises can also be an equalizing factor, helping students to build self-confidence by demonstrating tangible skills and enhance understanding. Creative tasks enable students to dynamically test their skills and identify and remedy gaps in their knowledge, preparing them for the rapidly changing world of the textiles industry.

Third, I use high-tech resources to make difficult theories and complex manufacturing processes easier to understand. I provide my students with opportunities to create and build on theories, and I expect them to adopt an active learning role to test and strengthen their understanding. For example, I developed a mobile application with a set of teaching materials that incorporates a table-top augmented reality (AR) learning environment to demonstrate methods of seaming and stitching, constructing garment parts, etc. Students can scan the provided markers with their phones to watch 3D animations through the AR tool. This helps them to visualize abstract theories.

Teaching energizes me, and I strive to share my love of both teaching and my discipline area with my colleagues. I was invited by the Educational Development Centre to share some of my teaching strategies in video clips. I also spoke about my innovative pedagogy and provided inspirational insights into new teaching methods at a sharing session.

My most important strategy for realizing students' goals is to teach them with enthusiasm. This has always been my mandate. I am committed to my field and truly enjoy the work. My students feel the energy and passion that I bring to my teaching. I hope that my teaching approach and philosophy give my students a lifelong appreciation of the methods, tools, and ideas that they learn in the classroom.

^{教學理念}: *營造正向學習環境及促進學習動機— 與傳授基礎知識同樣重要*

「 我認為自己最重要的教學策略,就是以熱誠感染 學生,推動他們實現目標。我一直以此為己任。 」 —— 廖栢堯女士 紡織及服裝學系導師 學院傑出表現/成就獎2021(教學)得獎者

我的教學目標是教導學生如何運用創意進 行設計及把概念實踐,並把新學到的技術 知識靈活運用,使他們能嚴謹地就服裝的 造工及呎吋作評估,再提供確切的改善建 議。這些技能可以為畢業生做好準備,日 後投身業界的表現將更有效率及效果。我 衷心相信,基本理論是建立實用知識的基 礎。這種教學方法可加強同學的學習動 機,亦能幫助他們建立自信。為此,認知 學生學習上的各種需要、學術背景以及學 習原因就十分重要。為了有效引導學生學

習,我負責的講課和導修課內容均務求趣味與互動兼備,令每 位學生感到學有所用。

我的教學理念包括三大要素:第一,是熟悉每一位同學。每逢 新學期開始,我都會請學生填寫一份表格,由此記住他們的姓 名、主修科目、事業規劃和個人愛好。這些資料能幫助我制訂 合適的教學內容予學生。我會在講課和導修練習上引用與同學 息息相關的例子。同時,我亦會努力為同學創造有利學習的環 境。我會訂下明確的基本規則,卻不會一成不變。我希望做到 符合同學期望的教學,同時亦希望他們能用功學習,交出最好 的成品。舉例來說,在一般情況下,我期望能準時收到功課, 但如果預訂的截止日期與另一科有所衝突,我會樂意讓步和推 遲提交日期。

第二,我會為課堂編製創意、實用和互動的教材,令同學更 投入課程內容。我經常在課堂上借用道具來玩些小遊戲,也



會進行小組討論。雖然這些活動需要額外時 間,但是效果很好,能有效幫助對課程主題 缺乏基礎知識的新生。實習和創意練習雙管 齊下,同學透過實踐技能得以建立自信,並 對技能有更深入的瞭解。創意練習讓同學能 以動態方式測試所學技能,從而辨識和補平 知識缺口,為他們日後應對瞬息萬變的紡織 業工作做好準備。

第三,我會利用先進科技幫助說明艱澀的理 論和複雜的製造工序,令這些內容更容易理

解。我為學生提供活學活用的機會,並期望他們主動驗證和鞏 固所學。例如,我開發了一個手機應用程式,除了內建整套教 材,還加入擴增實境(AR)技術,將之融入學習環境,包括 示範止口縫合、針步、縫製服裝組件等方法。同學可以用手機 掃描特定標記,通過擴增實境工具來觀看3D動畫教學,利用 具體影像幫助瞭解抽象的理論。

教學工作令我充滿活力‧我很喜歡與同事分享自己對教學和對 專業領域的熱愛。早前‧我應教學發展中心邀請拍攝短片分享 教學心得‧也在一場分享會上講述創新的教學方法。

我認為自己最重要的教學策略,就是以熱誠感染學生,推動他 們實現目標。我一直以此為己任。我致力發展所屬領域,並且 十分享受相關工作,同學在學習過程中也能感受到我對教學的 熱誠。我希望這套教學方法和理念,能讓同學在課堂上學到知 行合一的方法、所需的工具以及巧思,終身受用。

Optimizing Bone Health via Proper Nutrition and Traditional Wisdom

Prof. Wong Man-sau Associate Dean (Research), FAST; Professor, Department of Applied Biology and Chemical Technology (ABCT)

Our research team is interested in the use of natural products, such as dietary factors (nutrients and phytochemicals) and Chinese medicinal herbs (bioactive fractions and ingredients), to improve bone health.

The world is facing the challenge of population aging. Approximately one in three women and one in five men over the age of 50 worldwide are expected to suffer an osteoporotic fracture in their remaining lifetimes. Osteoporosis is a silent bone disease that reduce bone mass and increases the risk of fractures, placing a significant socioeconomic burden on society and compromising the quality of life of older adults. Cost-effective strategies for the prevention and treatment of osteoporosis are in great demand to meet the needs of the growing older population worldwide. My research focuses on identifying dietary factors and traditional Chinese medicine that might be useful for optimizing bone mass.

The bone remodeling process is tightly regulated by numerous hormones. Deficiencies in estrogen (a sex hormone) and



Trabecular bone mineral density in distal femur of rat after treatment with Chinese herbs for 12 weeks. 中藥治療12週後大鼠股骨遠端骨小梁 密度的變化。

abnormal calcium balance (mediated by bioactive form of vitamin D) are the major causes of osteoporosis in postmenopausal women and older adults. Recent studies have demonstrated that the gut microbiome is a modulator of the actions of vitamin D and estrogen in bone, suggesting that it may be a target for optimizing bone health. Although estrogen replacement can be used to prevent and treat osteoporosis in postmenopausal women, it is associated with an increased risk of developing stroke and endometrial cancer. Vitamin D supplementation is not effective in reducing the risk of fractures in older adults, possibly due to the reduced absorption and bioactivation of vitamin D in aging. Thus, our research team is interested in the use of natural products, such as dietary factors (nutrients and phytochemicals) and Chinese medicinal herbs (bioactive fractions and ingredients),

結合均衡營養與傳統智慧改善骨骼健康

我們的研究團隊致力以天然產物來改善骨骼健康,包括以膳 食中的營養物質和植物性化合物,以及中草藥活性成分等。

世界正面臨「人口老化」的巨大挑戰,預計全球50歲以上人口 中,約有三分之一的女性和五分之一的男性將於晚年患上骨質 疏鬆性骨折。事實上,骨質疏鬆症總是無聲無息地發生,當骨 質密度降低,骨折風險便會增加,既影響老年人的健康及生活 質量,也為社會帶來沉重經濟負擔。為應付全球人口老化的需 求,我們需要具有成本效益的策略來預防和治療骨質疏鬆症。 因此,我的研究聚焦於研發有助改善骨骼健康的膳食因素和傳 統中藥。

骨骼重塑過程由多種激素緊密調控,缺乏雌激素,加上因活性 維生素D調節的鈣平衡異常,都是導致更年期婦女和老年人患 上骨質疏鬆症的主因。近期研究顯示,腸道菌群能在骨骼內擔 任雌激素及維生素D的生物調節劑,顯示調節腸道微生物有可 能是優化骨骼健康的其中一個重要標靶。儘管雌激素替代療法 可用來預防及治療更年期女性的骨質疏鬆症,但它也會增加患 上中風及子宮內膜癌的風險。另外,老化過程亦引致維生素D 吸收率及生物活性下降,令維生素D補充劑未能降低老年人骨







Herba Epimedii 淫羊藿

Erythrina Variegata 刺桐 Drynariae fortunei 骨碎補





Fructus Ligustri Lucidi 女貞子 Sambucus williamsii HANCE 接骨木

to improve bone health. We have established research platforms to investigate the vitamin D-like and estrogen-like actions of natural products in bone tissues.

Chinese herbs in classical formulas/ decoctions have historically been used for the management of bone health. However, their use is not accepted internationally, due to a lack of scientific evidence of their active ingredients, their efficacy and the mechanisms of their actions. Using an established preclinical platform, we have demonstrated the osteoprotective effects and bioactive fractions of Herba Epimedii (HEP), Drynariae fortunei (DF), Erythrina variegata (EV), Sambucus williamsii HANCE (SWH) and Fructus Ligustri Lucidi (FLL). Our work has also attracted the attention of a multinational food company and a national food company —— 黃文秀教授 應用科學及紡織學院副院長(研究)及應用生物及化學科技學系教授

折風險。因此,我們的研究團隊致力以天然產物來改善骨骼健 康,包括以膳食中的營養物質和植物性化合物,以及中草藥活 性成分等。我們建立了相關研究平台,探討天然產物在骨骼中 的類雌激素活性和類維生素D活性。

傳統古方或方劑以中草藥治療骨骼疾病由來已久,可惜由於缺 乏足夠科學證據來識別活性成分、證明功效和探究作用機理, 中草藥使用尚未能獲國際認可。我們通過備受認同的臨床前研 究平台,展示了淫羊藿、骨碎補、刺桐、接骨木及女貞子等中 草藥和其生物活性成分對骨骼的保護作用。我們的工作也引起 了一些有意開發功能性食品及具護骨作用的中藥產品的跨國 食品公司和國內企業關注。此外,這些工作獲得了深圳市科技 創新委員會頒發的2012年深圳虛擬大學園項目先鋒獎,以及 國家教育部頒發的2012年深圳虛擬大學園項目先鋒獎,以及 國家教育部頒發的2014年高等學校科學研究優秀成果獎—科 技進步獎。我們的兩個使用接骨木保護骨骼健康的研究項目 先後成功獲得創新及科技基金資助,用於開發治療骨質疏鬆 症的新藥物,分別為"安全有效抗骨質疏鬆中藥的研究與開 發"(2019-2022)以及"基於腸菌轉化的天然抗骨質疏鬆先導 化合物的發現"(2022-2023)。



that are interested in developing functional food products and Chinese medicine products with bone protective functions. Our work received the 2012 Shenzhen Virtual University Park National Technology Project Pioneer Award from the Shenzhen Technology and Innovation Committee of the PRC and the 2014 Higher Education Outstanding Scientific Research Output Award (Science and Technology) from the Ministry of Education of the PRC. Our study of the use of SWH to enhance bone health enabled us to obtain funding for two research projects from the Innovation Technology Fund for the development of new anti-osteoporosis drugs. These projects are entitled "Research and development of a safe and effective herbal drug for postmenopausal osteoporosis" (2019–2022) and "Discovery of natural anti-osteoporotic lead compounds from microbial transformation" (2022–2023).

Workshop Series on Electrochemical Energy Storage and Conversion towards Carbon Neutrality

面向碳中和的電化學儲能與轉換網上研討會

Hong Kong's Climate Action Plan 2050 aims to make Hong Kong a zero-carbon emission livable city through sustainable development. Electrochemical energy storage and conversion plays an important role in net-zero electricity generation and green transport. New materials and innovative technologies keep on emerging. In this seminar, the speakers will share the latest findings on batteries, fuel cells, carbon reduction and explore the business opportunities of green energy for making significant contributions to the goal of carbon neutrality.

《香港氣候行動藍圖2050》旨在透過可持續發展使香港成為 零碳宜居城市。電化學儲能與轉換相關材料和技術不斷湧現, 講者將於這工作坊介紹電池、能源及減碳等方面的最新研究成 果,發掘綠色能源商機。

4-6 Jul Zoom Meeting

PolyU Seminar on Departmental Scheme-based Admission Programmes

理大學系組合課程網上簡介會

Starting from the 2022/23 academic year, PolyU will adopt Departmental Scheme-based admission and two new elements, namely "Artificial Intelligence and Data Analytics" (AIDA) and "Innovation and Entrepreneurship" (IE), will be incorporated into the undergraduate programme curriculum as Secondary Majors. The Faculty will organise an online information seminar on 7 July 2022 (Thu) to provide detailed information about the comprehensive range of academic programmes offered under this new admission arrangement, the curriculum of two secondary majors, and the key considerations in programme selection.

由2022/23學年起,理大將全面推行「學系為本」組合課程。在學系組合課程的新模式下,「人工智能及數據分析」 (AIDA)及「創新及創業」(IE)亦可作為副主修。本院將於2022 年7月7日(星期四)舉行網上研討會,介紹學院於新安排下所提供的課程資訊、更具彈性的修業選擇及副主修內容,以及報 讀課程的關鍵考慮因素。

7 Jul Zoom Meeting



Faculty Students & Alumni 學院學生與畢業生 Alibaba Entrepreneurs Fund/HSBC JUMPSTARTER 2022 Global Pitch Competition - Environmental Impact Award

Prof. Li Pei, Professor of ABCT & Founder of Grand Rise Technology



Clothing and Textiles Research Journal (CTRJ) Award 2021
- Top Altmetric Score since publication

International Textile and Apparel Association (ITAA) 2021
- Paper of Distinction Award in the Consumer Behavior track

Quacquarelli Symonds (QS) Reimagine Education Awards 2021

- Silver Award in Science of Learning category
- Bronze Award in K12 category



The Inventions Geneva Evaluation Days - Virtual Event



Dr Ki Chung-wha, Chloe, Assistant Professor, ITC

Dr Ki Chung-wha, Chloe, Assistant Professor, ITC

Dr Fridolin Ting, Senior Teaching Fellow, AMA Dr Sze Nung-sing, Raymond, Associate Professor, AMA Dr Lawrence Chan, Project Fellow, AMA Ms Raycelle Garcia, Project Associate, AMA Ms Winky Tsang, Project Assistant, AMA

Dr Chang Jinhui, Gail, Research Assistant Professor, ABCT - Sliver Medal

Dr Shou Dahua, Assistant Professor, ITC - Sliver Medal

CITECHCHALLENCE Control of the second secon	Tse Cheuk-hang, Matthew, Undergraduate Student, AMA Wong Chun-ming, Jayman, Undergraduate Student, AMA Wong Chun-wah, Derek, Undergraduate Student, AMA Wong Wan-sze, Christine, Undergraduate Student, AMA
Hong Kong Association of University Women (HKAUW) Scholarship	Shah Muskan, Undergraduate Student, ITC

International Accreditation Top Project Award of Royal Society of Biology

Li Shaoyang, Undergraduate Student, ABCT



Gautham Gopinath, Undergraduate Student, AP

Mok Ho-kit 莫豪杰

- PhD in Cancer Biology (Graduated in 2021)

When I first set foot on the PolyU campus, I had never dreamed that I would have such a fruitful university life. Wandering around the campus, you can find ample resources to help you explore our beautiful world. During my seven years of study, with the resources provided by PolyU, I visited eight countries to explore their cultures, histories and economic situations. The most rewarding experiences were building connections with local people and meeting travel buddies from different universities. Inspired by these connections and experiences, I initiated two international student projects, each of which received HKD100,000 in funding. One project focused on ethnic inclusiveness, while the other project focused on community service in Uganda. PolyU is dedicated not only to academic excellence but also to student development. The University's advanced research facilities provided ideal support for my research. With support from the Department, I received the Best Presenter Award for local and overseas scientific presentations during my PhD studies. Student life in PolyU is not always easy, but it is always exciting and valuable!

回想第一次步進理大的紅磚校園時,我從沒想像過大學生涯會如此多姿多 彩。漫步校園,你會發現大量有助你探索世界的資訊。在理大的七年間,我 探訪了八個國家,了解各地習俗、歷史和經濟。最大的收穫是和當地人交 流,認識來自不同大學的同學。這些旅程啟發我籌備了兩項國際學生計畫, 各獲10萬港元資助。其中一項計劃探討民族共融,另一項則深入烏干達提 供社會服務。理大是一所兼顧學生發展和學術研究的大學,為我的研究提供 了先進的科研設備。在學系的完善支持下,我有幸在讀博士學位期間,於本 地和海外的科研論壇榮獲最佳演講者獎。理大的生活雖充滿挑戰,但絕對是 我最難以忘懷和心存感激的大學生活!





Maureen Lawu

- BSc (Hons) in Investment Science

During my three years at PolyU studying BSc (Hons) in Investment Science, I acquired abundant knowledge of statistics, finance, and programming and achieved personal growth.

The overseas exchange opportunity provided by PolyU was the most thrilling part of my university life. I had the chance to join a summer exchange programme at Yonsei University. I also fulfilled my Work-Integrated Education graduation requirement by working as a financial content creator at a Korean company that provides global financial economic news. Exposure to people from different backgrounds as both a student and an employee enhanced my cultural adaptability and sense of responsibility. Although the outbreak of COVID-19 brought many uncertainties to my exchange journey, I am grateful for the support and guidance provided by the Department, which made it a rewarding experience.

在理大修讀投資科學(榮譽)理學士學位的三年間,我學會了統計、金融和編程的豐富 知識,並在個人發展方面獲益良多。

理大提供的海外交流機會是大學生活中最刻骨銘心的經歷。我參與了韓國延世大學的 暑期交流計劃,還在一家提供全球金融經濟新聞的韓國公司擔任金融內容創作者,完 成了校企協作教育計劃的畢業要求。學生和員工的身份讓我接觸到不同背景的人,令 我更快融入不同文化和增強了責任感。雖然疫情為海外交流計劃帶來很多不確定性, 但我感謝學系不斷支持和指導,使我獲得珍貴的交流體驗。

An Xiaodong 安曉東

- BSc (Hons) in Engineering Physics

During fall 2019, I was nominated by the Department of Applied Physics to participate in a semester exchange at the Georgia Institute of Technology (Gatech), where I built connections with students and faculty members, including Prof. Flavio Fenton. In summer 2021, I reconnected with Prof. Fenton and joined his Complex Heart Arrhythmias and other Oscillating Systems Lab to participate in a three-month online Research Experience for Undergraduates (REU) programme. The purpose of the research was to use the smoothed particle hydrodynamics (SPH) method to create an interactive fluid dynamics simulation with graphics processing unit (GPU) acceleration. I participated in various activities in the lab, including presenting my work to faculty members at Gatech as the only international student enrolled in the programme. With satisfactory simulation results, I received an excellent reference letter from Prof. Fenton, which helped me to secure a PhD offer from Gatech with full funding. My PhD studies will begin in fall 2022. I am ever more fascinated by computational physics and thus wish to continue my studies in the area, either in academia or in industry, to change people's lives for betterment.

2019年的暑假,我獲理大推薦到美國佐治亞理工學院進行學期交換,期間認 識了許多同學和教授,其中包括Flavio Fenton教授。2021年暑假,我又再與 Fenton教授碰面,並有幸加入他的複雜心律失常和其他振盪系統實驗室,進行 了爲期三個月的綫上暑期研究體驗計劃。研究計畫的目的是利用流體力學的光 滑粒子流體動力學方法來製成互動液體動態模擬,輔以繪圖處理器加速。我參 與了實驗室多項活動,包括作為唯一一位國際學生,向佐治亞理工學院教授匯 報暑期研究成果。由於模擬效果令人滿意,Fenton教授特別為我寫了推薦信, 讓我成功獲佐治亞理工學院取錄為博士生,更獲得全額獎學金。我將於2022 年秋季開始博士課程。我比以往對電腦物理學更感興趣,希望繼續在這方面研 習,並在日後在學界或業界工作,為人類生活帶來美好的改變。





Choi Wai-sum 蔡慧心

- BA (Hons) in Fashion & Textiles (Design)

My four years of study at the ITC have been a roller-coaster ride. I am amazed by the extraordinary environment that the ITC provides to foster students' creativity, with its state-of-the-art facilities, technical support and comprehensive course offering. Apart from nurturing my design ability, the ITC has equipped me with knowledge that closely aligns with the latest trends of development in the industry, including knowledge about fashion technology and marketing.

When the pandemic hit, challenges such as student exchange trips cancellation, studio closures, and classes postponements seemed to pull me away from the university life I had imagined. However, being surrounded by classmates with the same goals and vision, I realized that I was not alone. As we all try our best to adapt to this new normal, I feel that the bond between my classmates and me is growing stronger than ever, and I am thankful for this. Studying at the ITC will always be an important chapter in my life.

在服裝及紡織學系(ITC)就讀的四年可說是跌宕起伏。ITC配備各式器材和 技術支援,還有五花八門的科目,處處都能引發同學創意,令我嘆為觀止。 學系不但培養我的設計能力,也讓我們學習到與行業最新發展息息相關的知 識,包括時裝科技和市場營銷等。

疫情來襲帶來了接踵而來的挑戰。海外交流被取消、工作室暫停開放、課堂 延遲,難免令大學生活變得不似預期。難得身邊同學都擁有和我一樣的目標 和願景,讓我知道艱難之中自己並不孤單。我們一方面盡力適應新常態,友 情也更加深厚,我真的非常感恩。在ITC學習的日子將永遠是我人生中重要 的一章。

FAST Research Impact 2022 「科研影響力」影片系列

The Faculty of Applied Science and Textiles (FAST) has produced the "FAST Research Impact" video series to illustrate how FAST researchers translate their research innovations into impactful real-world solutions in response to urgent global issues such as environmental protection, energy conservation and health. Some of these projects were recognized as "World Leading" and "Internationally Excellent" in the last research assessment exercise.

The video series will feature the impactful results from eight FAST research projects from May to August. We hope you enjoy watching them and are inspired by how our research can change the world to become a better place.

理大應用科學及紡織學院特別製作了「科研影響 力」影片系列,闡明研究人員如何把科研成果帶 出實驗室,應用於日常生活,回應世界近年備受 關注的環保、節能及藥物治療等議題。而部份的 研究項目在之前的研究評審工作中獲「世界領先 水平」和「國際卓越水平」的評級。

八條影片,八個應對社會和環境挑戰的科研方 案。影片於五月至八月每隔一周在理大社交媒體 平台上播放,希望你喜歡並在如何為世界帶來改 變上得到啟發。



