Professor Nieng Yan

Doctor of Science *honoris causa*

Citation

Professor Nieng Yan is a distinguished structural biologist whose groundbreaking research has revolutionised our understanding of membrane protein structures and mechanisms. Born in Shandong Province in 1977, she demonstrated exceptional academic talent from an early age. After completing her undergraduate studies at Tsinghua University in 2000, she pursued a doctoral degree at Princeton University, where she laid the foundation for her remarkable scientific career. Her rapid rise in academia led her to become the youngest doctoral supervisor at Tsinghua University at the age of 30, the beginning of a series of extraordinary achievements.

Professor Yan's scientific contributions are both profound and pioneering. Her laboratory was the first to elucidate the atomic structures of several critical membrane proteins, including human glucose transporters and voltage-gated sodium and calcium channels. These discoveries have fundamentally advanced our understanding of cellular processes and provided crucial insights for drug development. Twice selected as one of the top ten scientific breakthroughs by *Science* magazine, Professor Yan's work has been published in prestigious journals including *Nature, Science, and Cell*. The impact of her research extends beyond basic science to practical applications in medicine, and particularly in understanding disease mechanisms and developing new therapeutic approaches.

Throughout her career, Professor Yan has demonstrated dynamic academic leadership and vision. Her appointment as the Shirley M. Tilghman Professor at Princeton University in 2017 marked a significant milestone as she is the first scientist to hold this prestigious position. In 2019, she was elected as a foreign associate of the US National Academy of Sciences, and in 2023 she was elected to the Chinese Academy of Sciences, in recognition of her invaluable contributions to the field of structural biology.

Beyond her scientific achievements, Professor Yan exemplifies the spirit of embracing technological advancement while maintaining rigorous scientific inquiry. In this era of artificial intelligence, she has taken a thoughtful and balanced approach to integrating AI tools like AlphaFold into structural biology research. For example, in one of her recent papers in the *Proceedings of the National Academy of Sciences of the United States of America* (PNAS), she demonstrated how AI

can be applied to the analysis of high-resolution cryo-electron microscopy images to advance a new paradigm in structural biology. Rather than viewing AI as a threat, Professor Yan emphasises its role as a powerful tool that enables scientists to ask more interesting questions and explore new frontiers in understanding protein dynamics and interactions. Her perspective that "real researchers embrace technological progress and use various technologies to explore and answer questions they are interested in" reflects the forward-thinking mindset that is essential for modern scientific discovery.

Professor Yan's recent return to China to establish and lead the Shenzhen Medical Academy of Research and Translation demonstrates her commitment to advancing life sciences research and education in her homeland. Her vision of creating an ecosystem that integrates basic research, clinical applications, and technological innovation aligns perfectly with Lingnan University's aspirations to advance interdisciplinary research in engineering sciences and life sciences, and her emphasis on breaking down barriers between institutions and fostering collaboration offers exciting opportunities for partnership and knowledge exchange with our university.

As a member of both the Chinese Academy of Sciences and the US National Academy of Sciences, Professor Yan has earned international recognition for her scientific excellence. Yet perhaps more inspiring is her role as a mentor and role model. She has consistently encouraged young scientists to pursue challenging questions and embrace new technologies while maintaining scientific rigour. Her philosophy that "being a female scientist can be challenging, but not to the extent that anyone should be stopped. So, be brave, be yourself" has inspired countless young scientific researchers, particularly women. Receiving the 2024 L'Oréal-UNESCO For Women in Science International Award further underscores her position as a global leader in scientific research.

Mr Chairman, in recognition of Professor Yan’s exceptional contributions to structural biology, her visionary leadership in life sciences research, her pioneering integration of new technologies in scientific discovery, and her prospective involvement with Lingnan University's aspirations in biomedical research and technological innovation, I present to you Professor Nieng Yan for conferment of the degree of Doctor of Science *honoris causa*.

Citation written and delivered by Professor Chen Xi

顏寧教授

榮譽理學博士

贊辭

顏寧教授是傑出的結構生物學家，她的開創性研究徹底改變了我們對膜蛋白結構和機理的理解。顏教授1977年出生於山東省，從小就展露出出眾的學術天賦。她2000年在清華大學完成學士學位，其後負笈普林斯頓大學攻讀博士學位，為她卓越的科學生涯奠定基礎。她在學術界迅速崛起，在30歲時就成為清華大學最年輕的博士生導師，其後更取得非凡成就。

顏教授在科學研究方面有開拓性的貢獻。她的實驗室率先成功闡明幾種關鍵膜蛋白原子結構，包括人類葡萄糖轉運蛋白及電壓門控鈉和鈣離子通道。這些發現從根本上提升了我們對細胞過程的理解，並為藥物研發提供了重要啓示。顏教授的研究成果發表於《自然》、《科學》、《細胞》等世界頂尖學術期刊上，更曾兩度被《科學》期刊評選為十大科學突破之一，其研究的影響超越了基礎科學領域，更延伸到醫學的實際應用，特別是在理解疾病機理和開發新的治療方法方面。

顏教授在其職業生涯中，處處展現出卓越的學術領導能力和視野。2017年，她獲任普林斯頓大學雪莉· 蒂爾曼終身講席教授，成為首位擔任這顯赫職位的科學家，這是一個重要里程碑。2019年，她獲選為美國國家科學院外籍院士；2023年，她當選中國科學院院士，這是對她在結構生物學領域傑出貢獻的認可。

在其科學成就以外，顏教授把握科技進步帶來的機遇，同時保持科學探究的精神。在這個人工智能時代，她以縝密且平衡的方式，將AlphaFold等人工智能工具整合到結構生物學研究中。例如，在最近於《美國國家科學院院刊》發表的一篇論文中，她展

示了如何將人工智能應用於高解像度冷凍電子顯微鏡的影像分析，成為結構生物學研究的新範式。顏教授並沒有將人工智能視為威脅，而是將其視為強大的工具，藉助這一工具，科學家能夠提出更有趣的問題，探索蛋白質動力學和相互作用的新領域。她認為：「真正的研究者都樂於擁抱技術進步，善用各種技術去探尋、解答自己感興趣的問題。」這正體現出科學探索所必需的前瞻性思維。

顏教授近年返回中國建立和領導深圳醫學科學院，致力於推動祖國的生命科學研究和教育。她矢志建立一個集基礎研究、臨床應用和科技創新於一體的生態系統，這與嶺南大學推進工程科學和生命科學跨學科研究的願景完美契合。她強調院校之間要消除障礙、加強合作，為嶺大提供令人雀躍的合作與交流機會。

憑藉卓越的科學成就，顏教授贏得了多方面的國際認可，當選為中國科學院和美國國家科學院院士。而作為導師，她以身作則，不斷啓發年輕科學家攻克具有挑戰性的難題，鼓勵他們擁抱新科技的同時保持嚴謹的科學態度。她的做人哲學——「作為女科學家可能充滿挑戰性，但並不至於阻止任何人前行；因此，勇往直前，做好自己本份」，激勵了無數年輕的科研人員，更成為女性典範。2024年，她獲得歐萊雅—聯合國教科文組織世界傑出女科學家獎，進一步突顯她作為全球科學研究領導者的地位。

主席先生，為表彰顏教授對結構生物學的傑出貢獻、在生命科學研究上具遠見的領導、將新科技融入科學研究的開拓精神，以及她於不久將來在嶺南大學的生物醫學研究和科技創新上的參與，本人謹恭請　閣下頒授榮譽理學博士學位予顏寧教授。

贊辭由陳曦教授撰寫及宣讀