

國立清華大學 2025 年傑出產學研究獎得獎人簡介



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學歷：

美國史丹佛大學機械工程博士(2000)

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劉承賢博士研究聚焦"光機電與微流體操控技術整合應用於器官晶片與癌症腫瘤微環境晶片"，與國內外生醫醫療團隊合作，發展細胞操控技術、肝癌微環境晶片探討癌腫瘤的抗藥性、肺癌微環境晶片探討化療標靶/免疫/複合藥物治療、支氣管/肺泡晶片及仿呼吸拉伸微型化儀器、高效率高良率細胞融合晶片。2020 年 1 月至今，75%的研究論文發表於 SCI 研究領域排名 Top 10%的期刊(更有 63%論文是在 Top 3%的期刊發表)，多篇論文被選為期刊封面故事圖片。實驗室團隊研發創新設計及無塵室半導體製程製作微型化生醫晶片，設計的特點在於體外重現器官癌症腫瘤微環境，為病人提供替身在晶片上進行藥物篩選。2024 年獲經濟部「科研成果價值創造計畫」，主攻「臨床檢測與研發應用性器官微環境晶片之商品化計畫」。2022 年底與北醫李岡遠醫師共同發起成立新創公司論泰生技(Pythia Biotech)，以 Organ on Chip/Tumor Microenvironment Chip 個人化精準醫療為主軸，開發的「器官/腫瘤/免疫微環境晶片」，晶片上直接進行癌症治療藥物組合測試，取代病人及動物進行藥物的測試，提升癌症精準個人化醫療應用與推動器官晶片/癌症腫瘤微環境晶片之產業化。

兩次獲國科會傑出研究獎，以及多次國內外獎項。感謝主耶穌基督允許這些美好的獎臨到我！感謝一路合作來自清華/交大/北醫/雙和醫院/萬芳醫院/淡水馬偕醫院/林口長庚醫院/台大/Stanford University/Duke University Medical School 優秀的合作夥伴朋友，拓展了我的視野/跨領域知識/及關懷，帶我走一條需要非常強的跨域合作而人煙稀少的道路，道路引向充滿流奶與蜜且見到生命之境。更感謝我實驗室一群優秀及認真的小朋友，欣然樂意/或為學位不得已的陪我/或忍受我，共同投入研究。還有感謝傑出產學研究獎審查的各院及校的先進同仁認可給予這獎項。

Education: (<https://mx.nthu.edu.tw/~chhsliu/> & https://mx.nthu.edu.tw/~chhsliu/CHLiu_Bio.html)

- **Ph.D. in Mechanical Engineering, Stanford University (2000)**
- **Master in Electrical Engineering, Stanford University (1995)**

Dr. Cheng-Hsien Liu's recent research focuses on organ on chip and tumor microenvironment chip via opto/electronic and microfluidic labchip techniques. He collaborates with interdisciplinary partners to develop cell manipulation techniques, liver labchip to explore drug resistance in cancer, lung cancer microenvironment chip to explore chemotherapy targets, immune systems, and combo drug therapies, bronchial/alveolar-on-a-chip, and high-efficiency cell fusion chips. Liu's group develops novel designs and utilizes semiconductor techniques to micromachine miniaturized biomedical chips with top journal publications. He received research funds of 2024 Technology Development Programs for Academia from Ministry of Economic Affairs, aiming at "Commercialization of Organ/Tumor on Chip re-constructing micro-environment *in vitro* for disease model and drug tests." At the end of 2022, Dr. Liu co-founded Pythia Biotech, a startup company, with Dr. Kang-Yun Lee at Taipei Medical University, focused on organ on chip/tumor microenvironment chips for personalized precision cancer medicine and pharmaceutical applications.

Dr. Liu has twice received the NSTC/NSC Outstanding Research Award (https://web.nstc.gov.tw/cen/oaa/award_113/Cheng-Hsien-Liu.html) and numerous domestic and international awards. Thank my Lord Jesus Christ for allowing these awards to come to me! I am grateful to my outstanding partners and friends along the way. I am also thankful to all the talented and dedicated students in my lab who willingly, or perhaps reluctantly, accompanied me and put up with me, dedicating themselves to research together. I will also be grateful to the colleagues who reviewed this Outstanding Industry-Academia Research Award, recognized me, and awarded it to me.