國立清華大學第 21 屆新進人員研究獎得獎人簡介

陳之碩於 2015 年九月進入清華大學醫環系擔任助理教授一職，便致力於建立一細胞影像與生物物理之研究實驗室，結合生醫光電系統與細胞分子生物技術，期望能對生物自組裝現象以及相關生醫光電技術有更深入的理解及發揮。

近年的研究，可略分為三類: (1)天然聚合物於海洋環境中的自組裝現象: 我們研究以水中的 DOM(dissolved organic matter)及藻類釋出的 EPS(extralcellular polysaccharides)為主軸，利用動態雷射散射(Dynamic laser scattering spectroscopy) 及雷射共軛焦顯微鏡(laser scanning confocal system)等系統，從微觀尺度研究這些天然聚合物的自組裝現象，以及環境中奈米粒子對其組裝動態的影響。(2)細胞骨架與細胞連結(Adherens junction)相關研究: :以 AJs 與肌動蛋白微絲為主軸，利用不同光學系統及分生技術，證明 catenin 分子於膜底肌動蛋白微絲網絡上的快速流動，以及 AJs 藉由蛋白微絲調控其他分子於細胞膜表面的運動。目前，實驗室重心朝細胞機械力學(mechanotransduction)發展，除了結合過去於 AJs 研究相關境驗，透過這兩年間於顯微鏡系統、生醫微流體、以及細胞生物上所建立的相關技術，強化細胞生物基礎與臨床醫學應用間的聯結。

Dr. Chi-Shuo Chen is an Assistant Professor of Department of Biomedical Engineering and Environmental Sciences at National Tsing Hua University. He received his B.S and M.S in Atomic Science from National Tsing Hua University, and Ph.D. in Biological Engineering from University of California, Merced. He worked as a Postdoctoral Researcher in Dermatology at Feinberg School of Medicine, Northwestern University. His current research focus is to study how mechanical signals propagate between cells, and the related mechanotransduction responses within cellular structures. By integrating with various engineering platforms, such as microfluidic, optical tweezers system, and other microscopy technologies, the works developed in his laboratory aims to further understand the impacts of physical microenvironments on cell physiology. His works

were published at journals among biomedical field, including PNAS, Journal of Cell Biology, Scientific Report, and Lab on a chip, etc.