

國立清華大學「微感測器與致動器產學聯盟」活動公告

• 時間：07/12/2023 (星期三) 下午 14:00-15:30

• 地點：國立清華大學動力機械工程學系 工程一館 108 室

● 宗旨

2013 年多位在微機電領域有豐富經驗的清大教授，於科技部的支持下成立「微感測器與致動器產學聯盟」(Micro Sensors and Actuators Technology Consortium, μ SAT)。多年來聯盟透過整合學研界的資源和經驗，協助業界解決技術問題、提供設備支援、及技轉和人才培育等，也陸續邀請數十位國內外微系統專家學者，舉辦專題演講。今年因為疫情趨緩，聯盟準備開始舉辦活動，促進國內產學研界的交流，歡迎參加。也歡迎國內微系統業者，踴躍加入本聯盟，一起努力提升我國技術水準與國際競爭力。

● 演講內容

Ultrasonic sensors based on bulk piezoelectric ceramics are widely used in range-finding applications today. We invented and brought into mass-production a new type of ultrasonic sensor based on a piezoelectric micromachined ultrasonic transducer (PMUT) combined with a custom application specific integrated circuit (ASIC) in a 3.5 x 3.5 x 1.25 mm³ package. Originally conceived in a university research project, we started a company, Chirp Microsystems (now part of TDK), to bring these sensors into mass production. The sensor's signal processing ASIC incorporates a programmable microprocessor, enabling the sensor to perform various application-specific algorithms, from basic time-of-flight range-finding to human presence detection. Relative to competing range sensors based on infrared time-of-flight, PMUT-based ultrasonic ToF sensors have numerous advantages, including much lower supply current (10 μ A from a 1.8V supply), the ability to operate in direct sunlight, and the ability to detect transparent or black targets. I will also discuss the lessons learned in starting a deep-tech company and bringing an invention from the university laboratory to mass production.

● 講員簡介

時間	項目	講員
13:30-14:00	報到	
14:00-15:00	Commercialization of PMUT-based Ultrasonic Time-of-Flight Range Sensors	Prof. David Horsley (Northeastern University, USA)
15:00-15:30	Tea Break and Networking	

- 參加對象：對微系統領域有興趣之業界及學研界人士
- 名額：由於座位有限，名額僅 100 人
請於 2023 年 7 月 10 日 前上網報名 <https://forms.gle/R6FGrvWfdX7paQtF9>
- 費用：一律免費
- 聯絡方式：林金慧 小姐 國立清華大學動機系
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方維倫 講座教授 國立清華大學動機系
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主辦單位：國立清華大學「微感測器與致動器產學聯盟」(網址：<http://www.usat.org.tw/>)
SEMI Taiwan (網址：<http://www.semi.org/ch/>)

協辦單位：國立清華大學動機系、國立清華大學奈微所、國立清華大學工學院產學研合作聯盟