

國立清華大學「微感測器與致動器產學聯盟」活動公告

• 時間：04/26/2023 (星期三) 下午 13:30-15:30

• 地點：國立清華大學動力機械工程學系 工程一館 106 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

The recent rapid developments in bionanotech and micro/nanofluidic technologies has enabled the realization of miniaturized laboratories. These Labs-on-a-Chip will play an important role in future medicine, both in point-of-care devices for drug or biomarker monitoring, as well as in early diagnostic devices. Microfluidics can also be exploited to manipulate and experiment with cells on chip. We have developed a microsystem for sperm analysis and selection for artificial insemination, where we can electrically detect and sort healthy sperm cells. Apart from diagnostic and cell manipulation devices, microfluidic devices are increasingly used to realise advanced disease and organ-models, as illustrated by the blood-brain barrier chip, a blood vessel on a chip to study atherosclerosis and cancer spheroids on chip for dynamic drug dosing. These Organs on Chip may lead to more rapid and cheaper drug development, personalised medicine and improved disease models, while minimizing or even eliminating animal testing (3R principle). We have developed a Translational Organ on Chip Platform (TOP) that enables simple plug and play connection of different Organ on Chip modules to a fluidic base plate. Finally, a microfluidic impedance spectroscopy system will be presented that can monitor the calcification of coccolithophores (algae), which plays an important role in the oceanic carbon cycle.

● 講員簡介

Prof. Albert van den Berg current research interests are micro/nanofluidics, Labs on Chip and sensing for health and sustainability and Organs on Chip. From 2014-2018 he was scientific director of the MIRA institute for Biomedical Eng. In 2017 he became co-PI of the Max Planck – U. of Twente Center for Complex Fluid Dynamics. In 2018 he became (co)director of MESA+ institute for Nanotechnology. He has been editor of Sensors and Actuators B, cofounding member of the editorial board of the RSC journal Lab on a Chip, founding member of EUROoCS, the European Organ on Chip Society and founding director of the CBMS, the Chemical and Biological Microsystems Society. In 2022 he was elected member of the SATW (CH).

時間	項目	講員
13:30-13:45	報到	
13:45-15:00	Labs and Organs on Chip for Health and Environment	Prof. Albert van den Berg (University of Twente, The Netherlands)
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 4 月 24 日 前上網報名 <http://goo.gl/forms/yfaIfF44UY>
- 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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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