

The 51st Lecture Meeting on Biomedicine in Fluid Science / Special Lecture

Date and Time: Friday, July 24, 2026, 16:00–17:00

Venue: Seminar Room, 3rd Floor, Flow Dynamics Building (GCOE Building), Institute of Fluid Science, Tohoku University

Lecturer:

Chia-Hung Dylan Tsai

Associate Professor, National Yang Ming Chiao Tung University, Taiwan
(Visiting Associate Professor, Institute of Fluid Science, Tohoku University)

Lecture Title:

Beyond Seeing: Sensing through Touch and Hearing

Abstract:

The lecture will begin with a brief introduction to the research activities of Chia-Hung Dylan Tsai and his laboratory at National Yang Ming Chiao Tung University in Taiwan. The laboratory conducts interdisciplinary research spanning robotics, plasma technologies, and microfluidic systems. The main focus of the lecture will be on two representative research topics. The first introduces haptic sensing using a sensor-embedded glove, demonstrating how tactile information can be used to recognize grasped objects through machine learning. The second presents a voiceprint-based approach to monitoring microdroplet generation, in which acoustic signals are analyzed to characterize droplet dynamics in real time without relying on optical imaging. This lecture aims to illustrate how sensing through touch and hearing can complement vision-based approaches and inspire new possibilities for observing and understanding complex physical systems.

Biosketch:

Dr. Chia-Hung Dylan Tsai is an Associate Professor in the Department of Mechanical Engineering at National Yang Ming Chiao Tung University. He received his B.S. degree from National Taiwan University in Taiwan in 2002, and the Ph.D. degree from Stony Brook University in the USA in 2010. He worked as a specially-appointed researcher and a specially-appointed Associate Professor at Osaka University during 2011-2017. He has been an Editor for ROBOMECH Journal since 2015, and was also an Associate Editor for IEEE Robotics and Automation Letters during 2015-2018. His research interest includes plasma technology, Lab-on-a-chip system, and contact modeling for viscoelastic interface.

Organizer:

Health, Welfare and Medical Cluster, Institute of Fluid Science, Tohoku University
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