



June 29, 2022

The Japan Society of Mechanical Engineers  
Hokkaido Branch  
“Biomechanics Research Meeting”  
38th Seminar

Chairman: Toshiro Ohashi

The Biomechanics Research Meeting will sponsor presentations by Prof. Chia-Wen Tsao from National Central University, Taiwan. Faculty members, graduate students, and undergraduates are encouraged to participate in the seminar.

Date&Time: July 19, 2022, 10:00 - 10:45

Place: Room A1-17, Faculty of Engineering, Hokkaido University

16:00 - 16:45

**Title: Use microdroplet preparing localized nanostructured silicon surface for Surface-Enhanced Raman Scattering (SERS) analysis**

**Speaker: Prof. Chia-Wen Tsao**

Department of Mechanical Engineering, National Central University, Taiwan

**Abstract:**

Surface-Enhanced Raman Scattering (SERS) analysis received intensive attention in molecular sensing because of its high detection sensitivity. In this seminar talk, a high surface-to-area ratio nanostructured silicon surface was used in the SERS analysis. And we demonstrate a new concept of using microdroplet to create localized nanostructured silicon surface for sample concentration to enhance the SERS sensitivity. And we further apply microdroplet as liquid lens to focus the laser beam and create constructive interference for SERS. Finally, we will demonstrate using nanostructured silicon surface as an integrated analytical platform for both SERS and mass spectrometry analysis as sample pre-screening and post identification.

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