



Invitation

2019. 7. 2 (Tuesday)

14:00 - 15:00

Speaker: **Prof. Tim Yeh**

Biomedical Engineering Department
University of Texas at Austin

Title: **Deep and High-Resolution 3D Molecular
Tracking Microscopes and Silver
Cluster-Based Biosensors**

Molecular trafficking within cells, tissues, and engineered multicellular models is critical to the understanding of the development and treatment of various diseases including cancer. However, current tracking methods are either confined to two dimensions or limited to an interrogation depth of $\sim 15 \mu\text{m}$. Prof. Yeh's group has developed a new 3D tracking method capable of quantifying rapid molecular transport dynamics in highly scattering environments at depths up to $200 \mu\text{m}$. The temporal resolution can be down to $50 \mu\text{s}$ under a high signal-to-noise condition, and the spatial localization precision can be as good as 35 nm . We have coined this technique **TSUNAMI** (Tracking Single particles Using Nonlinear And Multiplexed Illumination; **Nature Communications** 2015 and **Cancer Cell** 2018).

Venue: **OIST Central Building Room C209**

Contact: OIST Membrane Cooperativity Unit, Aki Kusumi
e-mail: akihiro.kusumi<at>oist.jp