# LiMe
医生物学研究所
Institute for Life and Medical Sciences
Kyoto University

# 8th nanobiofluids seminar

**November 14th 15:10-16:10**

**Venue: Conference Room (Rm 134) 1st floor, Bldg No.1 of LiMe**

**https://www.infront.kyoto-u.ac.jp/en/access/**

Zoom (registration) https://kyoto-u-edu.zoom.us/meeting/register/tJ0sd--pqjMpG9IAKc64o7XjLINjI2sABi9Y

## Prof. Keisuke Goda
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## Intelligent image-activated cell sorting & beyond

### Abstract

Understanding the vast heterogeneity of cells, particularly how their composition, structure, and morphology relate to cellular physiology, is a fundamental question in biology and a hallmark of both normal and diseased tissues. While traditional cell sorting methods, such as fluorescence-activated cell sorting (FACS), have been invaluable in studying cellular populations, they are limited by their reliance on fluorescence intensity profiles. Image-activated cell sorting (IACS) is an advanced technology designed to address this challenge by enabling real-time, image-based sorting of single live cells or cell clusters with high throughput. Unlike FACS, IACS leverages multi-dimensional imaging to capture the full complexity of cellular characteristics, allowing for high-content sorting based on both visual and functional attributes. A distinctive feature of IACS is its integration of artificial intelligence for real-time image analysis, enabling sophisticated and precision decision-making in the sorting process. In this talk, I introduce this IACS technology and its unique class of applications across diverse fields such as microbiology, immunology, cancer biology, food science, and susceptibility science.

### Biography

Keisuke Goda is a professor of chemistry at the University of Tokyo and an adjunct professor of bioengineering at UCLA. He earned a B.A. degree summa cum laude in physics from UC Berkeley in 2001 and a Ph.D. in physics from MIT in 2007. While at MIT, he contributed to the development of quantum-enhancement techniques in the LIGO group, which received the 2017 Nobel Prize in physics for the detection of gravitational waves. In 2012, Goda joined the University of Tokyo as a professor. His research group is dedicated to developing "serendipity-enabling technologies" through extreme engineering. He has authored nearly 300 journal papers, filed over 30 patents, launched 3 startups, and produced 28 faculty. Goda has received over 30 awards and honors, including the Japan Academy Medal, JSPS Prize, SPIE Biophotonics Technology Innovator Award, and Philipp Franz von Siebold Award. Goda is a fellow of SPIE, RSC, and AAAS.

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