The 30th iCeMS

SEMINAR

Commemorating the establishment of the Center for Meso-Bio Single-Molecule Imaging (CeMI) 8

Mon 28 Sep 2009
13:00-15:00

Nikon Imaging-Techno Lab

presents

Fluorescence Imaging Seminar Series 1 (2009)

Featuring

"Live-Cell Imaging"

Venue: 2nd floor Seminar Room (#A207)
Main Building iCeMS Complex 1, Kyoto University

Fluorescence imaging enables researchers to actually "see" the molecular events occurring in living cells. Recent three technological developments further strengthened such an advantage of fluorescence imaging. Namely, developments of (1) new fluorescent proteins, (2) photo-activatable probes and the microscope that can perform photo-activation during imaging, and (3) high-speed image acquisition by the confocal microscope. In this seminar, these topics will be comprehensively covered by leading researchers who have been involved in such developments.
All are welcome to join this seminar (free of charge, no reservation required). For more details, please see the 2nd page.

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Hosted by: Nikon Imaging-Techno Lab
@CeMI (Center for Meso-Bio Single-Molecule Imaging Center)
@iCeMS (Institute for Integrated Cell-Material Sciences), Kyoto University

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1st Lecturer: **Prof. Takeharu Nagai**

Research Institute for Electronic Science
Hokkaido University

"Visualization of Cellular Functions and Dynamics by the Smart Use of Fluorescent Proteins"

GFP has greater potentials than it is usually imagined. In particular, it has great potentials for providing useful FRET pairs, which can be designed and engineered in smart ways, for visualizing physiological functions inside living cells. One of the major objectives in the lecture of Prof. Nagai is to provide a glimpse of the design concept for the GFP variant proteins. Knowledge on the design concepts would greatly help their users to understand methods for quantitatively evaluate the signals from these proteins and the dynamics of photo-conversion of photoacitivatable GFPs. On a practical side, he will introduce "one-step GFP vector construction" used in his lab, as well as a new fluorescent protein "Sirius" which exhibits shortest excitation and emission wavelengths among the GFP variant proteins.

2nd Lecturer: **Mr. Yoshiro Oikawa**

Instruments Company, Nikon Corporation

"Ultrafast Laser Confocal Microscope for Live-Cell Imaging"

A long-time dream of cell biologists using fluorescence microscopy is to photo-stimulate the target molecules (ex. Kaede) at any timing and at any location at will, during high-speed imaging. New generation of laser confocal microscopes are now available just to make this dream true, and high in demand. In this seminar, the design of the microscope and its application to a variety of biological problems will be presented and discussed.