

エクストリームフォトンクスセミナー
Extreme Photonics Seminar

Language: Japanese

Date : May 31(Thu), 2012, 15:00 ~ 16:00

Location : Cooperation Center, 5F Meeting Room, W524
(研究交流棟 5 階会議室 W524)

Title : Ultrawide Band Light Conversion by Controlling Structures
of Microdroplets and Ultrashort Laser Pulses

Speaker : Assoc. Prof. Koji Hatanaka
(Center for Ultrafast Intense Laser Science, The University of Tokyo)

Ultrawide band light emission from X-ray to THz light using structured microdroplets containing various gold nano-particles as samples will be induced by the irradiation of structured (time-dependent frequency and/or polarization change) and intense near-IR femtosecond laser pulses. Optimization of such structures of droplets and laser pulses will enable efficient ultrawide band light conversion from near IR laser pulses with little loss of photon energy.

Title : Bio-applications of ultrafast laser pulses to protein crystallization
and cell adhesion strength measurement

Speaker : Dr. Hiroshi Yoshikawa
(Saitama Univ.)

When intense ultrafast laser pulses are focused into aqueous solutions, impulsive forces originated from shock wave and cavitation bubbles generate at focal points. The reachable force (~ 1 mN) is approximately 6 orders of magnitude larger than the typical force range achieved with optical tweezers and suited to stimulate molecular clusters and biological cells. In this talk, I introduce the overview of my research on the development of new laser techniques for (1) the control of protein crystallization, and (2) the quantitative evaluation of adhesion strength of cells on soft surfaces.