

「プラズモニクスの応用セミナー」

日時：10月8日（木）

1部 10時30分～最長12時まで

2部 13時30分～最長15時まで

場所：すずかけ台キャンパス J2棟 16階 1610会議室

Seminar on Applications of Plasmonic Materials

Date : 8th (Thu) Oct. 2015

Time : 1. 10:30 - 12:00 (max) Prof. Dr. M. Jonsson

2. 13:30 - 15:00 (max) Dr. C. Wadell

Place : J2 bldg. J2-1610 (16th floor), Suzukake-dai Campus

Contact : Takumi Sannomiya (sannomiya.t.aa@m.titech.ac.jp)

1. "Plasmonic nanopores for single-molecule investigation"

Dr. Magnus Jonsson, Linköping University, Sweden

Time : 10:30 - 12:00 (max)

Abstract: (details also in the attachment)

Single nanopores in thin membranes are powerful tools for studying single biomolecules without the use of labels. DNA and other molecules can be detected one by one as they traverse the pore and thereby modulate the pore's ionic conductance. We recently added plasmonic functionalities to these nanopores by positioning the pore right at the gap of a bowtie nanoantenna. In addition to effects on DNA translocations, I will present examples of new possibilities enabled by the enhanced optical fields and strong field gradients in the plasmonic hot spot, as well as by plasmon-induced local heating in the plasmonic antenna.

2. "Plasmonic nanostructures for optical hydrogen sensing"

Dr. Carl Wadell, TokyoTech (ex : Chalmers University of Technology, Sweden)

Time : 13:30 - 15:00 (max)

Abstract:

In nanoplasmonic sensors one utilizes the unique optical properties of metal nanoparticles to sense processes occurring at the nanolevel. In this talk I will show how plasmonic nanostructures can be used to study interactions between metal nanoparticles and hydrogen. These efforts are motivated by a fundamental interest in understanding the role of nanosizing on, for instance, metal hydride formation processes. However, nanoplasmonic hydrogen sensors are not only of academic interest, but may also find more practical use as all-optical gas detectors in a future hydrogen economy, where hydrogen is used as a carbon free energy carrier.