



IBS Center for Molecular Spectroscopy and Dynamics

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## COLLOQUIUM

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- **SPEAKER**

Prof. Ryota Iino (Institute for Molecular Science, National Institutes of Natural Sciences, Japan)

- **TITLE**

High-speed single-molecule imaging analysis of protein molecular motors with plasmonic nanoprobe

- **ABSTRACT**

We have been developing high-speed single-molecule imaging methods monitoring fast motions of protein molecular motors with nanometer localization precision and microsecond temporal resolution [1]. Our methods are based on dark-field scattering imaging of plasmonic nanoprobe such as gold nanoparticles [2] and nanorods [3]. As probe of single-molecule imaging, the plasmonic nanoprobe has advantages over the commonly used ones such as fluorescent dyes and quantum dots, because much stronger signals can be obtained without suffering from photobleaching and blinking. In this seminar, I will discuss the mechanisms of chemo-mechanical coupling, unidirectionality, and coordination of linear molecular motors kinesin-1 [4] and chitinase, and rotary molecular motors F1-ATPase and V1-ATPase [5-7], revealed by our high-speed single-molecule imaging analysis. I will also introduce our recent approaches to achieve angstrom-level localization precision and multi-color imaging with plasmonic nanoprobe.

- **DATE AND VENUE**

April 24, 2018 (Tuesday, 4:00 - 5:00 pm)  
Seminar Room 116, KU R&D Center

- **LANGUAGE**

English

- **INVITED BY**

Prof. Seok-Cheol Hong

\*If you want to have dinner with Prof. Ryota Iino or discuss with him, please contact Prof. Seok-Cheol Hong (hongsc@korea.ac.kr).