Center for Molecular Spectroscopy and Dynamics, IBS-Korea University

IBS Center for Molecular Spectroscopy and Dynamics

COLLOQUIUM

- **SPEAKER**
  Prof. Jie Yan (Mechanobiology Institute, National Uni. of Singapore)

- **TITLE**
  Formins sense both force and torque during formin-dependent actin filament polymerization

- **ABSTRACT**
  Formins, an important family of force-bearing actin-polymerizing factors, function as homodimers that bind the barbed end of actin filaments through a ring-like structure assembled from dimerized FH2 domains. In this work, we used transverse magnetic tweezers [1] to apply force to a single formin attached to a single actin filament. We found that physiological level of forces could drastically speed up the actin polymerization rate. Further, we found that this force-promoted actin polymerization required torsionally unconstrained actin filament, suggesting that formins also sense torque in the actin filament [2]. As actin filaments are subject to complex dynamic mechanical constraints in living cells, these results provide important insights into how formin/profilin-mediated actin polymerization is regulated by these mechanical constraints.

- **DATE AND VENUE**
  November 10, 2017 (Friday, 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. Jie Yan, please contact to Prof. Seok-Cheol Hong(hong1sc@gmail.com).