Department of Chemistry & Biomolecular Sciences
Macquarie University, Sydney Australia

The Speaker

Professor Antoine van Oijen
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Biology at the nanoscale, one molecule at a time

About the Speaker
Antoine van Oijen is a professor at the School of Chemistry at the University of Wollongong and an ARC Laureate Fellow. Having led research groups at Harvard Medical School and Groningen University, he recently moved to Wollongong to establish a Center for Molecular Biophysics, where physics, chemistry and biology meet to answer fundamental questions on how proteins work.

Synopsis
Antoine van Oijen’s research group focuses on the development of single-molecule tools that enable the visualization of complex biochemical processes at the level of individual proteins. In his presentation, he will describe how novel fluorescence imaging and mechanical nano-manipulation tools are used to visualize the dynamic orchestration between the various protein activities in the machinery that is responsible for the replication of DNA.

Representative Publications

Unsynchronised subunit motion in single trimeric sodium-coupled aspartate transporters
G.B. Erkens, I. Hänelt, J.M.H. Goudsmits, D.J. Slotboom, A.M. van Oijen

Bacterial replication, transcription and translation: mechanistic insights from single-molecule biochemical studies
A. Robinson, A.M. van Oijen

Bypass of a protein barrier by a replicative helicase
H. Yardimci, X. Wang, A.B. Loveland, I. Tappin, D.Z. Rudner, J. Hurwitz, A.M. van Oijen, J.C. Walter

A general approach to break the concentration barrier in single-molecule imaging
A.B. Loveland, S. Habuchi, J.C. Walter, A.M. van Oijen