

NanoLSI Open Seminar

CURRENT TOPICS

Exploring the potential of HS-AFM for simultaneous topography and molecular recognition imaging

Molecular recognition techniques allow detection of individual molecular targets in their biological context and they represent a unique tool to gain novel insights into subcellular processes. At present, the most advanced techniques for molecular recognition either require target labeling (fluorescence microscopy) or do not possess sufficient temporal resolution for meaningful dynamic analyses (AFM). I will show the pioneering use of high-speed atomic force microscopy (HS-AFM) for topography imaging combined to selective recognition of molecules at the nanometer scale without labeling. The new method is validated on the human hepatocyte growth factor receptor (hMET), which selectively binds to the small macrocyclic peptide aMD4 anchored to the HS-AFM tip. Phase-contrast imaging by HS-AFM with functionalized tip enabled discrimination of hMET against the murine MET homolog, which does not bind to aMD4. The versatility of synthetic macrocyclic peptides in detecting unlimited types of receptors with high selectivity broadens the range of future applications of this method.



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Time and Date

1:00 PM – 2:00 PM

Wednesday, February 9, 2022

Venue

Online (Zoom)

Registration

<https://forms.gle/92T6mKHN2uHPDK2HA>



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【Organizer】

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