

## **AVVISO DI SEMINARI**

Il giorno 14/02/2023 alle ore 12:00  
nell'Aula Seminari del Dipartimento di Scienze e  
Tecnologie Chimiche

**Vincenzo Mascoli, PhD**

Application Scientist,  
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the Netherlands

*Terrà un seminario dal titolo:*

A dynamic single-molecule platform to  
visualize and control DNA-protein interactions  
and conformational switches

*Proponente: Prof. Alessandro Porchetta*

*Abstract:*

Imagine you could directly see the location and dynamics of individual proteins binding to a single piece of DNA in real time. What if you could manipulate the structure of your biomolecule to interrogate its conformational landscape? What if you could assemble your biological complex step by step and quickly change buffer conditions to test your experimental hypotheses?

With the LUMICKS C-Trap, the world's first dynamic single-molecule microscope combining high-resolution optical tweezers, fluorescence microscopy, with advanced microfluidics in a truly integrated system, you can do all of this! We present several examples where the dynamic single-molecule approach is used to shed light on the conformational dynamics of protein and nucleic acid structures and uncover the role of specific protein complexes in the processes of DNA replication, repair and transcription. The ability to control, visualize and manipulate single molecules in real time, gives researchers the power to directly prove molecular mechanisms, in ways not previously possible, allowing you to answer mechanistic questions faster.

Besides presenting our technology, there will also be room to discuss your potential experimental setup and explore how the LUMICKS C-Trap can benefit your research. Looking forward to seeing you there!