ABSTRACT

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***Illuminating the invisible: visualizing biomolecular interactions with magnetic force spectroscopy.***

*Biological life is orchestrated by a myriad of interactions between molecules such as nucleic acids, proteins, peptides, and lipids. These interactions drive essential processes including cell signalling, metabolism, gene expression, and protein folding.*

*At Depixus, we have developed an innovative instrument system based on Magnetic Force Spectroscopy (MFS) that can analyse these biomolecular interactions in real-time and at an unprecedented scale.*

*In this talk, we will delve into the principles of our MFS technology, demonstrating how subtle variations in light intensity captured by individual pixels of a high well-depth CMOS camera can reveal the intricate dynamics and energetics of biomolecular interactions. We will also discuss the scalability of this approach, enabling the parallel analysis of vast numbers of individual interactions.*

*Finally, we will present several real-world applications and case studies, showcasing how this cutting-edge technology can drive significant advancements in biomedical research and drug discovery, opening new avenues for understanding complex biological processes.*