



## Interfacing light and microfluidics: fluid actuation and bio-analytes detection

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In this presentation we discuss our recent work at the interface between photonics and microfluidics. First, we discuss how light interacting with absorbing nanoparticles can be used to engineer temperature gradients at the microscale and enable controlling the dynamics of fluids in a microfluidic environment, both for actuation [1] and to overcome the diffusion limit in integrated biosensing [2]. The second part of the talk introduces several integrated bio-detection platforms involving optical interrogation. We discuss platforms exploiting colorimetric sensing with resonant metallic [3] and dielectric particles [4] for the detection of proteins. We also present our latest advances in multiplexed detection of exosomes using i-Scat microscopy [5].

### References

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