

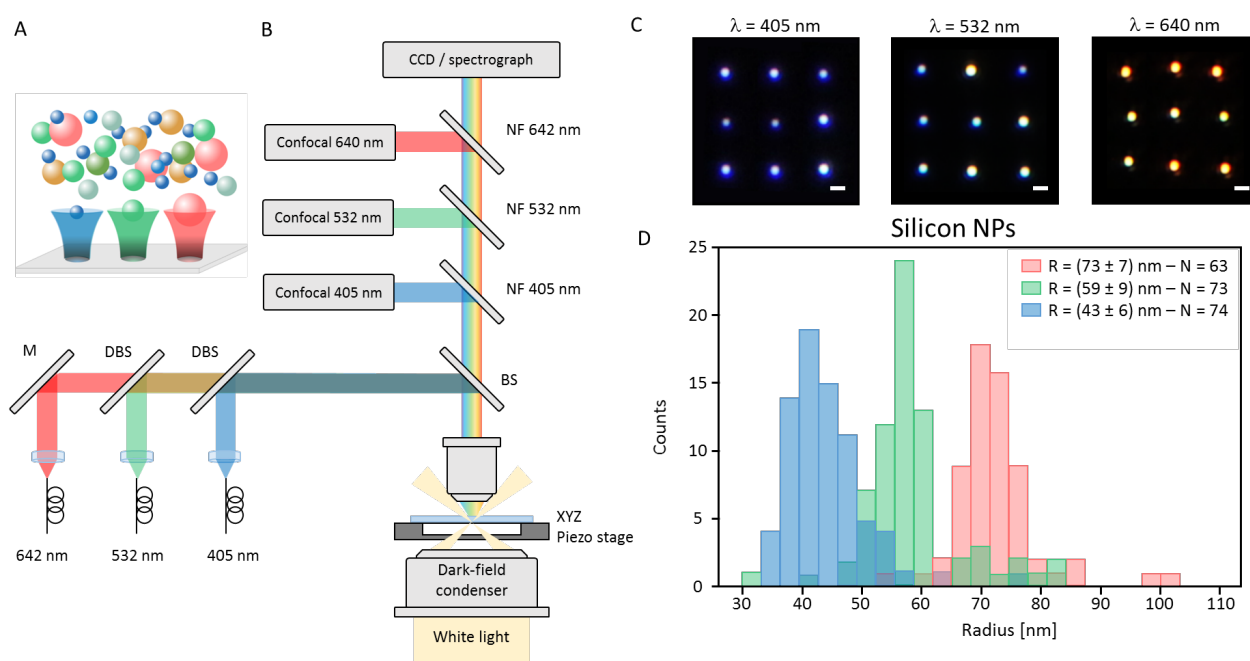
Optical printing of gold, silver and silicon colloidal nanoparticles

[Fernando D. Stefani](#)

Centro de Investigaciones en Bionanociencias (CIBION), Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Godoy Cruz 2390, C1425FQD Ciudad de Buenos Aires, Argentina

Departamento de Física, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Güiraldes 2620, C1428EAH Ciudad de Buenos Aires, Argentina

Colloidal chemistry is able to provide with high throughput an immense variety of nanoparticles, with different material compositions, geometries and sizes. Even complex hybrid structures combining different materials can be fabricated in colloidal suspension. Using these nanoparticles in devices requires methods for their precise and selective immobilization onto solid substrates. Optical printing appears as a versatile alternative for this goal. Optical forces are used to directly capture colloidal NPs from suspension and immobilize them one by one on specific locations of a substrate. In this talk we will revise the working principle of optical printing, the detailed mechanism including thermo-osmotic and thermo-phoretic contributions, and we will discuss examples illustrating the potential and challenges of this technique.



[1] Zaza et al. *ACS Photonics* (2019) Accepted manuscript

[2] Gargiulo et al. *ACS Nano* 11 (2017) 9678–9688

[3] Gargiulo et al. *Nano Letters* 17 (2017) 5747–5755

[4] Violet et al. *Nano Letters* 16 (2016) 6529–6533

[5] Gargiulo et al. *Nano Letters* 16 (2016) 1224–1229