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Light, MIPs and Nanotechnology: A Sound Medley to Tackle Analytical Challenges

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Nanotechnology has brought about advantages to optical sensing such as plasmonic and quantum confinement effects, accelerated response, dramatic increases of brightness and savings of precious reagents, among others. Molecular imprinting is able to provide the essential analyte recognition without the limitations of biomolecules [1]. Therefore, *combination* of both fields seems a logical step for versatile advanced optosensors development. This lecture will introduce some recent examples from our Group that show the analytical challenges that may be tackled by molecularly imprinted nanostructures, e.g.: (i) luminescent core-shell imprinted *nanoparticles* engineered for analyte-targeted Förster resonance energy transfer (FRET)-based sensing [2], and (ii) submicron-sized MIP *arrays* fabricated by photoinduced local polymerization within metal subwavelength apertures, the size of which is finely tuned by the dose of 532 nm laser light. The enrofloxacin antibiotic and Rhodamine 123 have been selected as templates, respectively, to demonstrate the recognition capability of the nanoMIP structures, which has been evaluated by steady-state emission or fluorescence lifetime imaging microscopy (FLIM) by single-photon timing.

References

[1]. Moreno-Bondi, M.C.; Benito-Peña, E.; Urraca, J.L.; Orellana, G. *Topics Curr. Chem.* **2012,** *325,* 111-164.

[2]. Descalzo, A.B.; Somoza, C.; Moreno-Bondi, M.C.; Orellana, G. *Anal. Chem.* **2013,** *85,* 5316-5320.

[3]. Urraca, J.L.; Barrios, C.A.; Moreno-Bondi, M.C. *Nanoscale* **2014,** *6,* 8656-8663.