

SEMINARIOS DEL CENTRO DE TECNOLOGIAS FISICAS UNIDAD ASOCIADA CSIC-UPV

Lugar: Salon de Actos de la Ciudad Politecnica de la Innovación
Cubo Rojo
Universidad Politecnica de Valencia
C/ Ingeniero Fausto Elio (acceso por el ascensor cerca de la caseta de seguridad)
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SERS applications in chemical biology

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Plasmonic nanostructures present unique optical properties due to the generation of strong electric fields caused by the excitation of the localized surface plasmon resonances (LSPRs). One of the main applications of such LSPRs are the so-called surface enhanced spectroscopies, mainly the surface enhanced Raman scattering (SERS) and the metal enhanced fluorescence (MEF). These spectroscopies have potential for the detection of single molecules under the natural environmental or biological conditions of the analyte and thus, present a broad potential application in different fields including molecular characterization, environmental monitoring, biology and medicine.¹ Herein we will discuss about some of the latest advantages of SERS in Chemical Biology specially those related to the new diagnostic tools development,² multiplex detection and bioimaging and high-throughput screening applications to drug discovery.⁵

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2. R. A. Alvarez-Puebla, et al., *Proc. Nat. Acad. Sci. USA*, 2011, **108**, 8157-8161; L. Rodríguez-Lorenzo, R. de la Rica, R. Alvarez-Puebla, et al., *Nature Mater.* 2012, **11**, 604-607
3. L. Rodríguez-Lorenzo, Z. Krpetic, S. Barbosa, R. A. Alvarez-Puebla, L. M. Liz-Marzan, I. A. Prior and M. Brust, *Integrative Biol.*, 2011, **3**, 922-926.
4. H. Fenniri and R. Alvarez-Puebla, *Nature Chem. Biol.*, 2007, **3**, 247-249.
5. R. Perez-Pineiro, M. A. Correa-Duarte, V. Salgueirino and R. A. Alvarez-Puebla, *Nanoscale*, 2012, **4**, 113-116.