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SERS stem cells bio-sensor based on Au/ SiO₂ colloidal crystals substrates

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Colloidal crystals (CC) are self-assembled metamaterials with a periodic refractive index fabricated from colloidal SiO₂ or polystyrene spheres. Lately, different structured porous films template by CCs are being used as substrates in Surface-Enhanced Raman Spectroscopy (SERS). Taking into account that, due to the localized surface plasmon resonance phenomenon, SERS substrates should satisfy conditions of nanoscale structure (porosity), periodicity and chemical stability, in this work, we use a thin film (50 nm) of gold sublimated on a 250 nm SiO₂ based CC in order to detect changes of cellular biochemistry of stem cells by SERS.

Biography

Juan Carlos Salcedo Reyes has completed his PhD at Cinvestav, México D.F., postdoctoral research at University of Texas at Dallas and Instituto de Ciencia de Materiales, Madrid, Spain. More than 30 scientific papers, 1 Colombian patent and 1 US patent. Editor in chief, Universitas Scientiarum (Scientific journal of the faculty of sciences, Universidad Javeriana, Bogotá D.C., Colombia)

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