Detection of PAHs on calixarene-functionalized metal surfaces by means of SERS spectroscopy Detección de PAHs mediante espectroscopía SERS sobre superficies metálicas funcionalizadas con calixarenos

García-Ramos, J. V.

Sánchez-Cortés, S.

Leyton, P.

Campos-Vallette, M.

Polycyclic Aromatic Hydrocarbons (PAHs) were detected at trace concentrations. In order to accomplish that, new SERS substrates were developed based on silver nanoparticles, both in suspension and immobilized in glass. These nanoparticles were covered by self-assembled calix[4]arene molecules. Among the assayed calixarene molecules the 25,27-dicarboethoxy-26,28-dihydroxy-p-tert-butylcalix[4]arene shows a higher analytical selectivity towards PAHs integrated by four benzene rings, mainly pyrene. The interaction mechanism between the calixarene and PAHs seems to take place through a ?-? stacking leading to a charge-transfer between the complex and the metal surface. This interaction seems to also induce changes in the surface charge of the metallic particles.