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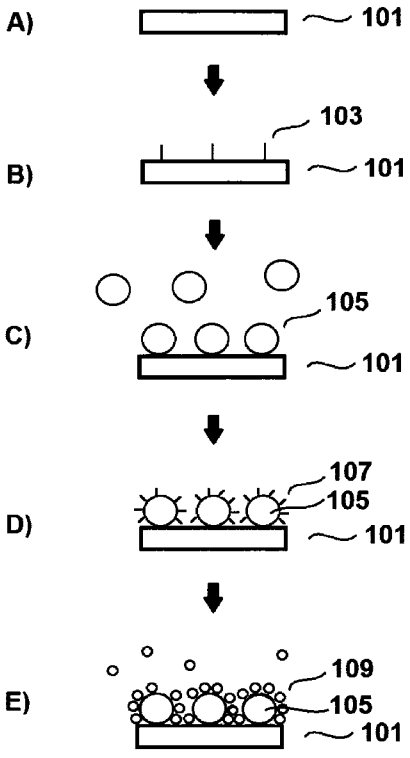
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(54) Title: SUBSTRATE FOR OPTICAL SENSING BY SURFACE ENHANCED RAMAN SPECTROSCOPY (SERS) AND METHODS FOR FORMING THE SAME

FIG. 1



(57) Abstract: Various embodiments relate to a substrate for optical sensing by Surface Enhanced Raman Spectroscopy (SERS). The substrate comprises a support, a first layer consisting of a plurality of metal nanoparticles attached to the surface of the support, and a second layer consisting of a plurality of metal nanoparticles attached to the surface of the metal nanoparticles of the first layer, wherein the mean diameter of the metal nanoparticles of the first layer is greater than the mean diameter of the metal nanoparticles of the second layer. Various embodiments also refer to methods for forming the substrate. In a further aspect, various embodiments refer to a biosensor comprising the inventive substrate for the detection of an analyte in a sample by SERS, a method for the detection of an analyte in a sample by SERS using the biosensor, and use of the biosensor in SERS detection methods.

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