**ABSTRACT**

 We theoretically studied the performance of various noble metals with Au nanocomposites. A thin nanocomposite layer of the required composition is coated over the core. By varying the thickness of the nanocomposite layer, the performance parameters of the proposed sensor were studied and analyzed. The thickness of the layer(25nm) is optimized for various proportion of x. The overall performance of the sensor is studied in terms of FWHM , sensitivity, Q factor and SNR ratio. On comparing the results obtained, the best nanocomposite suitable for sensor applications has been predicted.