In-situ 3D micro-sensor model using embedded plasmonic island for biosensors

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Abstract

The design of the microsensor system for biosensors using the plasmonic island is proposed. The sensor head is formed by the stacked layers of silicon-graphene-gold materials. The dual-mode operations of the sensor can be performed using the relationship of the changes between the electron mobility and optical phase, where the exciting environment can be light intensity (phase), electrical transient, heat, pressure, flavour and smoke, The change in light phase (intensity) in silicon and conductivity (mobility) in gold layers cause change in the output measurands. The design and simulation interpretation of the sensor is presented. The sensor manipulation using the MCM arrangement is simulated and interpreted for biosensor applications 3D imaging can also be applied to the MCM function, where the 3D in situ sensor

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