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TITLE

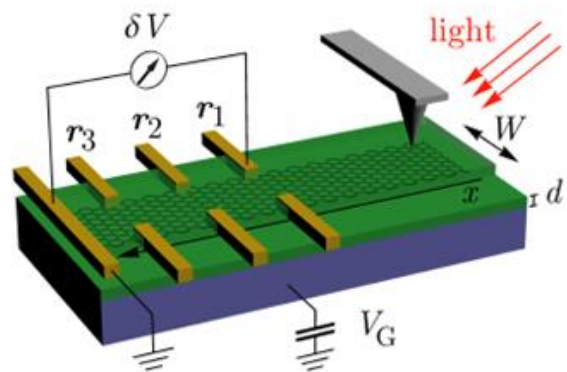
All-electrical plasmon detector

INVENTORS

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DESCRIPTION

The invention relates to a plasmon detector that is characterized by a particular architecture allowing a simple all-electrical detection of plasmons in a plasmonic waveguide. The electrical plasmon detector is based on non-linear hydrodynamic equations of plasmon motion that describe transport in the waveguide at room temperature and in a wide range of carrier densities. These non-linearities yield a dc voltage in response to the oscillating field of a propagating plasmon. In particular the waveguide is more efficient if it is made of graphene. The proposed device paves the way for the integration of graphene plasmonic waveguides in electronic circuits.



APPLICATIONS

Electronic circuits, plasmon detection

KEYWORDS

Plasmon, waveguide, detection, graphene

BIBLIOGRAPHIC DATA

All-electrical plasmon detector

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