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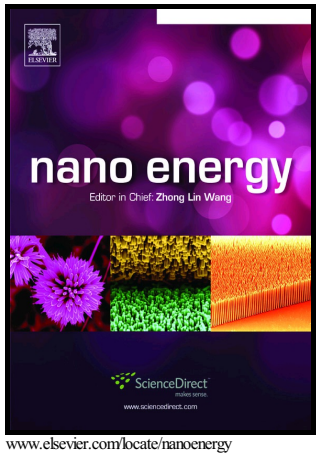

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Reduced propagation loss of surface plasmon polaritons on Ag nanowire-Graphene hybrid

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Abstract

The propagation loss of surface plasmon polaritons (SPPs) on metal nanowires (NW) has limited their applications in integrated nanophotonic devices. In order to reduce propagation loss, the ohmic loss and leaky radiation when NWs placed on substrates should be restrained. In this work, through integration with graphene, the ohmic loss can be decreased and the leaky radiation of hybridized plasmon modes H_1 and H_2 mode can be prominently suppressed, resulting in the reduced propagation loss. Finite element method (FEM) has been utilized for theoretical