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Electro-Optical Plasmonic Switch Based On Graphene[1] SUK-YOUNG PARK, KYUNGSUN MOON, Dept. of Physics, Yonsei University — We have studied an electro-optical plasmonic waveguide, which controls the transmission of incident light by switching the coupling of the surface plasmon polariton (SPP) localized on graphene. It has been previously shown that the propagation length of the SPP localized on the copper surface can be effectively reduced by a factor of two or three by applying external bias potential. In our study, we have demonstrated that the propagation length of the SPP localized on graphene can be dramatically reduced by a factor of ten or so and the wavelength of SPP can be reduced by several hundredths of the incident light as well. This may help develop a nano-scale plasmonic switch.

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