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Nonreciprocal propagation of surface plasmon mode guided through graphene layer on magnetized semiconductor

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Highlights

- Fundamental antisymmetric mode supported by the waveguide structure shows appreciable nonreciprocal dispersion.
- Mode behavior is highly tunable with excitation wavelength, external biasing magnetic field and graphene layer chemical potential.
- Cutoff wavelength is observed for backward propagating mode, proposing the feasibility of realizing one way propagating waveguides.
- Cutoff wavelength of backward propagating mode is identified to be a function of different waveguide parameters.