

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Temperature-induced plasma excitations in gapped graphene and silicene ANDRII IUROV, University of New Mexico and Hunter College, CUNY, GODFREY GUMBS, Hunter College, CUNY and Donostia International Physics Center (DIPC), DANHONG HUANG, Air Force Research Laboratory, Space Vehicles Directorate — Both closed-form analytic and numerical results are presented for the polarization function, as well as the plasmon excitations of gapped graphene and silicene. The calculations are carried out within the random phase approximation (RPA). We investigate the behavior of the plasmon dispersion as a function of sublattice potential difference in silicene. These results could be used to compare the effective mass model with the tight-binding approximation at finite temperature in which spin-orbit coupling is included.

Andrii Iurov
University of New Mexico and Hunter College, CUNY

Date submitted: 27 Oct 2014

Electronic form version 1.4