

Abstract Submitted  
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**Temperature Effect on the Static Polarization of Monolayer and Bilayer Phosphorus** DIPENDRA DAHAL, CUNY-Graduate Ctr, ANTONIOS BALASSIS, Fordham University, Bronx, NY, GODFREY GUMBS, Hunter college, CUNY — The polarizability of monolayer and bilayer phosphorus is calculated. Results will be presented at various temperatures as well as when a vertical electric field is applied. We employ our polarization function in calculating the static shielded potential of a nonmagnetic impurity in its vicinity. We also investigate the way in which this static shielding is modified for a scaffold structure involving a thick conductor forming a substrate for the phosphorus layers. Our calculations make use of the inverse dielectric function which we obtain in the random-phase approximation. We also report on our calculations when the impurity distance from the conductor surface or 2D layer is varied.

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