

Abstract Submitted
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Raman Scattering from Pt Island-Decorated Graphene¹ AWNISH GUPTA, HUMBERTO GUTIERREZ, Department of Physics, Pennsylvania State University, PETER EKLUND, Department of Physics, Department of Material Science and Engineering, Pennsylvania State University — We performed microRaman studies of decorated n -Graphene Layers (n GLs). Nano-islands (NI; dia \sim 5-10 nm) of Pt were created by deposition on the n GL with gaps between the NI in the range of few nm. When the NI were present, we observed D and D' Raman bands as well as splitting of the G-band into G^+ and G^- (most pronounced for 1GL). The observations may be related to graphene “confined” in the interstitial spaces between NIs. The D and D' bands show the following properties: (1) Intensity of D and D' relative to G band decreases with increasing number of layers n in the n GL. (2) Peak frequencies, ω_D decreases linearly with $1/n$ while $\omega_{D'}$ remains constant. (3) Linewidth Γ_D decreases linearly with $1/n$, while $\Gamma_{D'}$ increases linearly with $1/n$. Our results will be discussed in terms of results theoretically predicted by zone folding (Jishi *et al*).

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