Condensed Matter Science, DC Field CMS

Abstract Submitted
for the GEBPC17 Meeting of
The American Physical Society

Layer Dependent Raman Spectroscopy of $FePS_3$[1] JUAN MACY[2], Florida State University, LUIS BALICAS, National High Magnetic Field Laboratory - Florida State University — Metal Phosphorous Trichalcogenides are a group of compounds that are intrinsically magnetic, and exhibit wide range band gaps. Out of this family of compounds, we have found that Iron Phosophorous Trichalcogenides ($FePS_3$) have shown environmental stability down to the monolayer limit. It has been shown that exfoliating these compounds down to a few atomic layers leads to emergent properties that differ from the bulk e.g. different band gaps, which have yet to be explored for these materials. However, it remains unclear how its magnetic phase transition is affected by the exfoliation process or if it survives down to the single layer limit. Thus, our goal is to examine the structural and magnetic stability of $FePS_3$ when exfoliated down to a few atomic layers through the evolution of its Raman spectra.

[1]Funded by the American Physical Society Bridge Program - NSF Grant No. 1143070

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Date submitted: 13 Jan 2017 Electronic form version 1.4