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**Growth and characterization of MnAs on HOPG** SHRIDHAR HEGDE, EVERETT FRASER, JAESUK KWON, HAO ZENG, HONG LUO, Department of Physics, University at Buffalo, SUNY — MnAs thin films exhibit room temperature ferromagnetism and have been extensively studied on substrates such as GaAs and Si, for spintronic applications. Film properties, such as vertical transport measurements, are often hindered by the presence of underlying substrates. The non-reactive HOPG surface provides an ideal environment for studies of MnAs with minimal effect from the substrate. We grew MnAs on HOPG by MBE. AFM measurements indicated that the MnAs particles self-assemble on step edges of the HOPG surface, to form highly ordered wire-like structures. Magnetization measurements showed the MnAs/HOPG sample to be ferromagnetic at room temperature. A temperature dependent AFM/MFM study yielded a Curie temperature of 330K. Individual particles are found to be ferromagnetic and the neighboring particles are antiferromagnetically coupled. Modulation dI/dV measurements showed a clear difference between the electronic states in MnAs and in the HOPG substrate used as a reference.

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