

Abstract Submitted
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Ferromagnetism in epitaxial InMnSb films NIDHI PARASHAR, BRUCE WESSELS, Northwestern University — The structure and ferromagnetic properties of epitaxial $\text{In}_{1-x}\text{Mn}_x\text{Sb}$ semiconductor films deposited using metal-organic vapor phase epitaxy were investigated. Films were single phase as determined by x-ray diffraction for $x = 0.01$ to 0.05 . A rocking curve width of 0.3 degrees was measured in θ - 2θ x-ray scans. XRD ϕ -scans indicated that the films were epitaxial. Films are ferromagnetic at room temperature as indicated by hysteretic behavior. For an $\text{In}_{0.965}\text{Mn}_{0.035}\text{Sb}$ epitaxial film a saturation magnetization (M_s) and coercive field (H_C) of 20 emu/cm^3 and 240 G respectively were measured at 295 K . The field cooled and zero field cooled magnetization curves exhibit reversible behavior confirming the absence of any impurity phase. The temperature dependent magnetization was well-described by a Brillouin function. The Curie temperature (T_C) was above 400 K as determined from the field cooled magnetization temperature dependence. High temperature SQUID measurements will also be presented.

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