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Transition metal-doped Sb_2Te_3 magnetic semiconductor thin films.[1] CHANG-PENG LI, YI-JIUNN CHIEN, LYNN DAVIES ENDICOTT, CTIRAD UHER, Physics Dept., Univ. Michigan — With the doping of vanadium in tetradymite-based Sb_2Te_3, magnetic semiconductor thin films $Sb_{2-x}V_xTe_3$ have been prepared on (0001) sapphire substrates by low-temperature molecular beam epitaxy. X-ray diffraction measurements and RHEED patterns confirm single crystalline films growing along the c-axis direction. Magnetic and anomalous Hall measurements clearly show stable ferromagnetic ordering with the easy axis along c-axis direction up to Curie temperature, which increases nearly linearly with the content of V incorporated in the lattice. So far, a high Curie temperature of 213 K has been achieved for the composition of $Sb_{1.55}V_{0.45}Te_3$.

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