Transition metal-doped $\text{Sb}_2\text{Te}_3$ magnetic semiconductor thin films.\(^1\) CHANG-PENG LI, YI-JIUNN CHIEN, LYNN DAVIES ENDICOTT, CTI-RAD UHER, Physics Dept., Univ. Michigan — With the doping of vanadium in tetradymite-based $\text{Sb}_2\text{Te}_3$, magnetic semiconductor thin films $\text{Sb}_{2-x}\text{V}_x\text{Te}_3$ 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 $\text{Sb}_{1.55}\text{V}_{0.45}\text{Te}_3$.

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