

Abstract Submitted
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Magnetic Properties of $\text{Ge}_{1-x}\text{Mn}_x\text{Te}$ Thin Films¹ JAMES R. ANDERSON, Dept. of Physics & Center for Nanophysics and Advanced Materials, University of Maryland, College Park, MD, W. KNOFF, MALGORZATA GORSKA, T. STORY, Institute of Physics, PAN, Al. Lotnikow 32/46, Warsaw, Poland, COSTEL R. ROTUNDU, Dept. of Physics & Center for Nanophysics and Advanced Materials, University of Maryland, College Park, MD — We have measured the magnetization of $\text{Ge}_{1-x}\text{Mn}_x\text{Te}$ thin films with $0.08 < x < 0.19$ at magnetic fields up to 7 T at temperatures from 2 to 385 K. The monocrystalline epitaxial layers of $\text{Ge}_{1-x}\text{Mn}_x\text{Te}$ were grown on (111)-oriented BaF_2 crystalline substrates in a home-built MBE system. The layer structure was rhombohedral, thickness in the range 0.5 – 1 micron, and hole carrier concentration of the order 10^{21} cm^{-3} . Magnetization measurements were made using a Quantum Design MPMS system. At low temperatures the samples were ferromagnetic. The ferromagnetic – paramagnetic transition was observed in various samples in a broad temperature range from 20 – 100 K. In some samples we have seen two peaks in the temperature dependence of the low-field magnetization. These peaks may be evidence of two chemical phases or of an electronic phase separation. The origin of this effect is under investigation at the present time.

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