

Growth and magnetic properties of MnBi thin films

Jiyoun Choi*, Sungyoul Choi, Jeongyong Choi, Soon Cheol Hong, and Sunglae Cho

Department of Physics, University of Ulsan, Ulsan 680-749, South Korea

Yongsup Park, Kyu-Won Lee, and Hyun-Min Park

Korea Research Institute of Standards and Science, Taejon, 305-600, South Korea

It is well known that the intermetallic MnBi has a NiAs-type crystal structure and exhibits unique properties such as ferromagnetism with $T_c = 633$ K and large magneto-optic Kerr rotation. Up to now, MnBi have been prepared by using various methods such as sintering, arc melting, thermal evaporation and MBE [1-4]. MnBi thin films have been usually prepared by the annealing method which the deposited Mn/Bi multilayers were annealed at various temperature [2,4]. Although many efforts were devoted to produce MnBi thin films, its single phase have not been reported.

We have grown MnBi thin films on Si(111) and CdTe(111) substrates by using solid source MBE (molecular beam epitaxy). The base pressure of growth chamber is below 3.0×10^{-9} Torr. The growth rate of MnBi is 0.36 Å/s. We will discuss the growth and magnetic properties of MnBi thin films.

References

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