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Mossbauer Study of Low Temperature Magnetic and magnetooptic Properties of Amorphous Tb/Fe Multilayers ATAUR CHOWDHURY, University of Alaska Fairbanks — Magnetic and magnetooptic properties of multilayers critically depend on detailed magnetic and structural ordering of the interface. To study these properties in Tb/Fe multilayers, samples with varying layer thicknesses were fabricated by planar magnetic sputtering on polyester substrates. Mossbauer effect spectra were recorded at different temperatures ranging between 20 K and 300 K. The results show that perpendicular magnetic anisotropy (PMA) increases as temperature decreases for samples that show parallel anisotropy at room temperature, and for samples that show strong PMA at room temperature, no significant change in PMA is observed at low temperature (<100 K). Hyperfine field of samples that display parallel anisotropy at room temperature shows oscillatory behavior, reminiscent of RKKY oscillations, at low temperatures (<100 K). Plausible causes of these properties will be discussed in the paper.

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