MAGNETIC MEDIA WITH FERROMAGNETIC OVERLAY MATERIALS FOR IMPROVED THERMAL STABILITY

Abstract

A magnetic recording disk (10) has a magnetic recording layer that includes a ferromagnetic host layer (15) and a ferromagnetic overlay (17) deposited directly on the host layer (15) with an effective overlay thickness in the range of 1-40 Angstroms. The ferromagnetic material used in the overlay (17) contains Co, Fe and/or Ni and has a magnetic moment significantly greater than that of the material in the ferromagnetic host layer. The ferromagnetic overlays (17) improve the thermal stability of superparamagnetic grains contained within the host layers (15) by magnetically coupling the grains through bridging. The enhanced thermal stability of the media allows for the use of thinner ferromagnetic host layers, and leads to lower remanent magnetization-thickness product (M_rt)) values and higher recording densities.

Fig 2