

ABSTRACT

PERPENDICULAR MAGNETIC RECORDING MEDIUM AND METHOD OF MANUFACTURING THE MEDIUM

A perpendicular magnetic recording medium is provided, in which a soft magnetic layer used as a low K_u layer can be stably produced with high performance, and thermal stabilization of magnetization, ease of writing by a magnetic head, and SNR are further improved, and a method of manufacturing the medium is provided. A perpendicular magnetic recording medium includes at least a nonmagnetic underlayer, a magnetic recording layer, and a protective layer formed in this order on a nonmagnetic substrate; wherein the magnetic recording layer includes a low K_u layer having a relatively small perpendicular magnetic anisotropy constant (K_u value), and a high K_u layer of which the K_u value is relatively large, and the low K_u layer includes a soft magnetic thin film including an iron-group-element based microcrystal structure, in which a nitrogen element is added to a ferromagnetic material mainly containing one of metals of Co, Ni and Fe or an alloy of the metal, the thin film having a crystal structure of a face-centered cubic lattice or hexagonal close package, and a preferred crystal orientation plane parallel to a plane of the film is made to be a (111) plane in the face-centered cubic lattice structure, and a (002) plane in the hexagonal close package structure.

Fig 1