

ABSTRACT



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A magnetic recording medium is provided which can record and reproduce high-density information by maintaining perpendicular orientation of a magnetic recording layer even with a decrease in thickness of nonmagnetic layers from an intermediate layer to a seed layer while decreasing the grain size of magnetic crystal grains to be consistent with an increase in recording density. A manufacturing method thereof and a magnetic recording and reproducing apparatus are also provided. The magnetic recording medium is a perpendicular magnetic recording medium including at least an underlying layer, an orientation control layer, a magnetic recording layer, and a protective layer formed on a nonmagnetic substrate. Here, the orientation control layer includes two or more layers of a seed layer and an intermediate layer from the substrate side. Materials of the seed layer and the intermediate layer are selected so that a contact angle of the intermediate layer material with respect to the seed layer material, which is amorphous, is in the range of 10 to 100 degrees.