

ABSTRACT**IRON-COBALT-TANTALUM-ZIRCONIUM ALLOY SPUTTERING TARGET
AND METHOD FOR MANUFACTURING THE SAME**

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The present invention provides a method for manufacturing an iron-cobalt-tantalum-zirconium (Fe-Co-Ta-Zr) alloy sputtering target. A raw material containing Fe, Co, Ta, Zr is melted and cast, and subsequently atomized to obtain a pre-alloyed Fe-Co-Ta-Zr powder. Then, the pre-alloyed Fe-Co-Ta-Zr powder is compacted and solidified at 800~950°C to obtain the Fe-Co-Ta-Zr alloy sputtering target. Furthermore, the present invention also provides a Fe-Co-Ta-Zr alloy sputtering target, which is essentially consisted of the pre-alloyed Fe-Co-Ta-Zr powder having a base phase containing iron-cobalt alloy. By using only one pre-alloyed Fe-Co-Ta-Zr powder as a raw material, the composition uniformity can be effectively controlled.

10 Hence, the Fe-Co-Ta-Zr-based alloy sputtering target in accordance with the present invention present invention has a PTF not less than 20% and a thickness not more than 12 mm.

[FIG. 1]