

Controlling Magnetic Leakage Flux In Sputtering Targets Containing Magnetic And Non-Magnetic Elements

ABSTRACT

Various exemplary embodiments of the present invention relate to a method for controlling magnetic leakage flux in a sputtering target containing magnetic and non-magnetic elements. The method relates to selecting a particle size of at least one non-magnetic phase in a microstructure, where the particle size of the non-magnetic phase is greater than or equal to one micron. The non-magnetic phase is combined with at least one magnetic phase in the microstructure, where the magnetic phase is greater than or equal to 10 atomic percent and is greater than one micron in size. The selected particle size of the non-magnetic phase decreases the diffusion between the magnetic and non-magnetic phases in the microstructure, and may increase the pass through flux (PTF) of the sputtering target. The magnetic phase and non-magnetic phases may be combined in the microstructure by hot isostatic pressing, sintering, spark plasma sintering, or vacuum hot pressing.

Fig. 1