

國立台灣大學技術行銷表

台大案號: 06A-091020 (由產學組填寫)

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產品/技術名稱	具垂直磁異向性之單層鐵磁性合金薄膜
發明人/單位	陳勝吉、沈智隆、林哲平、孫達皇、郭博成、張慶瑞
產品/技術說明	本發明將 10 nm 厚之單層 FePt 合金薄膜經升溫速率 100°C/秒加熱至 700°C 持溫 180 秒後，其垂直方向頑磁力($H_{c\perp}$)大於 6000 Oe、飽和磁化量(M_s)大於 450 emu/cm ³ 、垂直方向角形比(S_{\perp})大於 0.7、平均晶粒尺寸下降至 9.7 nm。
應用範圍	任何相關之磁記錄媒體。
產品/技術優勢	本發明可更進一步簡化膜層結構與降低製造成本，具有產品或技術之競爭性，並具有應用於垂直磁記錄媒體之可行性。
市場潛力	本發明之平均晶粒尺寸和薄膜厚度比值趨近於 1，且磁區結構傾向孤立不連通，此有助於提升磁記錄密度及降低媒體雜訊，具備應用於超高密度垂直磁記錄媒體之潛力。
產品/技術 智財權保護方式	(由技轉組填寫) 以報備方式 自行申請台灣、美國、歐洲專利

Marketing Abstract of NTU's Invention Disclosure

NTU's docket no: _____ (由技轉室填寫)

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Title	SINGLE-LAYERED FERROMAGNETIC THIN FILM WITH A PERPENDICULAR MAGNETIC ANISOTROPY
Inventor (s)	Sheng-Chi Chen, Chih-Lung Shen, Ger-Pin Lin, Ta-Huang Sun, Po-Cheng Kuo, Ching-Ray Chang
Brief Description	(≤ 100 words of non-confidential information) In the present invention, single layered FePt film with thickness of 10 nm was annealed with a thermal rate 100°C/sec to 700°C for 180 sec. After annealing, the perpendicular coercivity ($H_{c\perp}$), saturated magnetization (M_s) and perpendicular squareness (S_{\perp}) of FePt film are large than 6000 Oe, 450 emu/cm ³ and 0.7 respectively. The average grain size could be decreased to 9.7 nm.
Fields of Application	Any related magnetic recording media.
Advantages	(when compared to the existing technologies) The present invention can further simplify the structure of magnetic recording media and reduce the manufacturing cost. It posses competitiveness on magnetic recording product or technology, and thus can be a candidate for perpendicular magnetic recording media.
Market Potential	The average grain size of the present invention is close to the thickness of ferromagnetic layer. And the present invention can promote the recording density and decrease the noise of media due to its isolated magnetic domains. Therefore, it has a potential for applying in an ultra-high density perpendicular magnetic recording media.
IP Right(s)	