

수직자기기록매체 CoCrMo 박막의 구조와 자기적 성질  
Structural and Magnetic Properties of Perpendicular  
Recording Medium CoCrMo thin Film

남 인탁 강원대학교 재료공학과  
홍 양기 동양화학 (주) 중앙연구소 전자재료연구실

In Tak Nam, Department of Materials Engineering  
Kang-Won University

Yang Ki Hong, Materials Research Laboratory, Research Center,  
Oriental Chemical Ind. Co., Ltd.

Structural and magnetic properties of Co-Cr-Mo films were investigated in connection with sputtering conditions. Films were prepared using a conventional RF sputtering system. X-ray diffractometry, scanning electron microscopy and transmission electron microscopy were employed to investigate structural properties. Vibrating sample magnetometry was used for coercivity and saturation magnetization measurements. Co-Cr-Mo films displayed reasonable values of perpendicular coercivity and saturation magnetization for perpendicular recording media and showed good perpendicular orientation of the hcp c-axis to the film surface.

Perpendicular coercivity was strongly dependent upon substrate temperature. The films deposited using the rotating substrate technique showed better c-axis orientation than those using the stationary substrate. Co-Cr-Mo films of 2.9 at.% Mo content showed maximum perpendicular coercivity and saturation magnetization. The films deposited at lower Ar pressure showed good magnetic properties. There was no explicit relationship between the columnar structure and c-axis orientation. Co-Cr-Mo films was found to have suitable structural and magnetic properties for perpendicular recording media.