## The Perpendicular Magnetic Anisotropy Effect and the Directional Structure Ordering of CrPt<sub>3</sub> the Epitaxial Films

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The epitaxial cubic symmetric CrPt<sub>3</sub> films exhibit a perpendicular magnetic anisotropy (PMA) with large Kerr rotation angles. In order to understand the PMA effect of such a cubic CrPt<sub>3</sub> thin film, the directional chemical order parameters S and polarization dependent x-ray absorption fine spectroscopy (XAFS) were measured in both inplan and plane-normal directions. The best PMA effect can be found when the plane normal order parameter is largest while the in-plane one is still low. At the same time, Cr-Cr bond-distance have slight distortion by XAFS analysis. This anisotropic directional long range chemical order might be due to the anisotropic interdiffusion and the compound formation between the Cr and Pt layer. For a short-range order analysis, the PMA effect might be attributed to the difference of the Cr-Cr bond-distance between plane-normal and in-plane directions.

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