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Magnetism of Fe-Pt surface alloy formed on Pt(110) CHANYONG HWANG, W.D. KIM, Y.S. PARK, Korea Research Institute of Standards and Science, M.B. HOSSAIN, C.G. KIM, Chungnam National University — Ordered Fe-Pt surface alloys(local (2×1) and (2 ×2) phase) are formed on Pt(110) surface. Scanning tunneling microscope and core-level photoemission spectroscopy have been applied to characterize the atomic structure of these surface alloys. Surface magnetism has been probed with the magneto-optic Kerr effect. These two phases are ferromagnetic and it has been confirmed by the first principles calculation. The surface of these surface alloys is very interesting since the hysteresis obtained by the SMOKE shows the atomistic evidence of magnetic dipolar interaction on magnetization reversal. The position of two adjacent off-axis Fe atoms and the direction of its spin form a critical angle, where the magnetic dipolar interaction is zero. In addition to this magnetic dipolar interaction, role of the exchange interaction and induced ferromagnetic order in Pt atom will be discussed.

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