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**Interface structure and magnetic anisotropy of Fe/Pd(001) and Pd/Fe/Pd(001) monatomic films** TETSURO UENO, MASAHIRO SAWADA, KAZUHITO FURUMOTO, TETSURO TAGASHIRA, AKIO KIMURA, HIROFUMI NAMATAME, MASAKI TANIGUCHI, Hiroshima University — Fe and Pd are known to form  $L1_0$ -ordered alloy, which exhibits easy magnetization axis perpendicular to the atomic stacking plane. In order to reveal the origin of the uniaxial magnetic anisotropy in the point of view of atomic structure, we performed the experiments on bare and Pd-covered Fe monatomic films on Pd(001) surface. Interface structure analysis was done by means of intensity-voltage analysis of low-energy electron diffraction (LEED I-V), and the magnetic anisotropy was investigated by X-ray magnetic circular dichroism (XMCD). Sample fabrication and XMCD experiments were performed at HiSOR-BL14 of Hiroshima Synchrotron Radiation Center, Hiroshima University. It is revealed that the intermixing between Fe films and Pd substrate occurs at room temperature growth, and Pd-overlayer compresses the interlayer distance around Fe layer. Fe thickness dependent XMCD revealed that the spin reorientation transition from perpendicular to in-plane direction occurs in bare Fe/Pd(001) with Fe thickness increase. On the contrary, in-plane magnetic anisotropy is stable in Pd/Fe/Pd(001). We attributed the perpendicular magnetic anisotropy in Fe/Pd(001) to the  $L1_0$ -like interface structure which realized in this system.

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