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XAS and XMCD study of $3d$ - $4d$ hybridization in Ni/Pd films J.-S. LEE, B. H. SEUNG, B.-G. PARK, J.-H. PARK, J.-Y. KIM, Dept.of Physics, POSTECH, KOREA, K.-B. LEE, PAL, POSTECH, KOREA, ESSC AND DEPT. OF PHYSICS TEAM, PAL TEAM — X-ray Absorption Spectroscopy (XAS) and X-ray Magnetic Circular Dichroism (XMCD) measurements at the Ni $L_{3,2}$ - and Pd $M_{3,2}$ -edge were carried out to reveal changes in intrinsic electronic and magnetic structures of Ni-Pd films prepared in various configurations, such as Ni, Ni/Pd, Ni/Pd- multilayer, and NiPd-alloy. All films were grown by *in situ* e- beam evaporation system in the measurement chamber. The satellite structures (6 eV and 4 eV) of bulk Ni, which are present in XAS and XMCD spectra, disappear as portion of Ni/Pd interface increases such as multilayer, while XMCD signal of Pd became enhanced. Effects of the increased portion of Ni/Pd interface were also revealed in NiPd alloy film. The findings strongly imply that increased intermixing at the interface gives rise to the d -electron charge transfer at the interface and results in the modified orbital moments, which is a direct evidence for a close relation between the modified magnetic property and the interfacial $3d$ - $4d$ hybridization in Ni-Pd films.

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