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Investigation of ferromagnetic/antiferromagnetic nanostructures using X-ray magnetic dichroism J. WU, National High Magnetic Field Laboratory, Florida State University, Tallahassee, Florida 32310, USA, J.S. PARK, Department of Physics, University of California at Berkeley, Berkeley, California 94720, USA, W. KIM, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, Koera, E. ARENHOLZ, M. LIBERATI, A. SCHOLL, Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California 94720, USA, CHANYONG HWANG, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, Koera, Z.Q. QIU, Department of Physics, University of California at Berkeley, Berkeley, California 94720, USA — The spin structure of epitaxially grown antiferromagnetic/ferromagnetic bilayer was investigated using X-ray Magnetic Circular Dichroism (XMCD) and X-ray Magnetic Linear Dichroism (XMLD) techniques. The XMLD measurement on the antiferromagnetic film (NiO or CoO) gives a direct probe of the spin orientation of the compensated antiferromagnetic spins. This capability enables us to give a clear clue to the mechanism of the exchange bias in the bilayer and to give a direct observation of the antiferromagnetic vortex.

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