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X-ray Absorption Spectroscopy Studies of PZT Heterostructures MIKEL HOLCOMB, JINLING ZHOU, DISHENG CHEN, West Virginia University, ANDREAS SCHOLL, Advanced Light Source, Lawrence Berkeley National Laboratory — X-ray absorption spectroscopy (XAS) and photoemission electron microscopy (PEEM) are techniques commonly used to determine the magnetic properties of thin films, crystals, and heterostructures. Recently, these methods have been used in the study of magnetoelectrics, possessing both ferroelectric and magnetic order; however, the additional sensitivity to the ferroelectricity in these films complicates the analysis. Angular studies of the ferroelectric contribution to x-ray linear dichroism reveal a similar dependence to that of magnetic samples, allowing a formula for linear dichroism in complex samples. In materials with both ferroelectric and magnetic contributions, temperature dependent measurements reveal the weighting of the components. This development allows this dynamic approach to be used to study the effect of ferroelectricity on interface coupling in a variety of material combinations.

> Mikel Holcomb West Virginia University

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