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**Mn valences in $La_{0.7}Sr_{0.3}MnO_3/PbZr_{0.2}Ti_{0.8}O_3$ Heterostructures** JINLING ZHOU, SRINIVAS POLISETTY, EVAN WOLFE, CHARLES FRYE, DISHENG CHEN, MIKEL HOLCOMB, West Virginia University, CATHERINE JENKINS, ANDREAS SCHOLL, Lawrence Berkeley National Lab, YING-HAO CHU, National Chiao Tung University — Magnetoelectric (ME) coupling—the electrical control of magnetic properties or vice versa—has promising applications in computer memory and logic, magnetic sensing and energy scavenging. Understanding the coupling mechanisms in a variety of magnetoelectric material systems is an important step as it will allow us to design better magnetoelectric systems. Our group studies the interfacial properties of the known magnetoelectric system of a ferromagnetic $La_{0.7}Sr_{0.3}MnO_3$ (LSMO) and a ferroelectric $PbZr_{0.2}Ti_{0.8}O_3$ (PZT). Through photoemission electron microscopy imagining, ME coupling was confirmed at the interface. X-ray absorption spectroscopy of Mn was taken across wedged samples of varying ferroelectric and ferromagnetic thicknesses. Here, we will show the changes of Mn valences at different thicknesses of LSMO and PZT, which helps to understand ME coupling and impact of thickness on the ME properties.

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