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Low Temperature Resistive Switching Behavior in a Manganite CHRISTOPHER SALVO, MELINDA LOPEZ, STEPHEN TSUI, California State University San Marcos — The development of new nonvolatile memory devices remains an important field of consumer electronics. A possible candidate is bipolar resistive switching, a method by which the resistance of a material changes when a voltage is applied. Although there is a great deal of research on this topic, not much has been done at low temperatures. In this work, we compare the room temperature and low temperature behaviors of switching in a manganite thin film. The data indicates that the switching is suppressed upon cooling to cryogenic temperatures, and the presence of crystalline charge traps is tied to the physical mechanism.

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