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Bipolar resistive switching in $Ba_{0.5}Sr_{0.5}Co_{0.2}Fe_{0.8}O_3$ thin films ZHONGWEN XING, Dept. of Materials Science and Engineering, Nanjing University, NAIJUAN WU, ALEX IGNATIEV, Center for Advanced Materials and Department of Physics, University of Houston — Five-component perovskite Ba0.5Sr0.5Co0.2Fe0.8O3 (BSCFO) thin films are reported to have polarized electrical-pulse-induced resistance (EPIR) change at room temperature. Such an EPIR change is attributed to a combined effect of the resistance change of the Schottky barrier and the oxygen ion/vacancy movement near the interface. In the BSCFO, the lower threshold voltage of the electric pulse that leads to nonvolatile resistive changes is close related to its higher oxygen permeability.

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