

Investigation on Temperature Dependent Switching Current In NiO Films For the Application of ReRAM

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We have investigated temperature dependent transport of a Pt-NiO-Pt structure which is one of candidate materials for Resistive RAM (ReRAM). It is well known that NiO shows a reversible resistance switching characteristics between different two current levels, low-resistance ON and high-resistance OFF states. However, its switching mechanism is still uncertain. In this study, we will clearly show that the principal transport mechanisms for the ON and OFF currents are different. While the OFF current shows a thermal activation, the ON current is relatively independent of temperature.