

Abstract Submitted
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Measurement Setup for Resistivity RAM Devices¹ JAMES TALBERT, DARRELL ADAMS, JOSE MAYORGA, WILHELMUS GEERTS, Department of Physics-Texas State University at San Marcos, Texas — The market for non-volatile memory is potentially about to hit a brick wall with the flash technology as it might not be scalable beyond the 14nm node. The need for other storage devices is a hot topic in said market, and one possibility is Resistive RAM (RRAM) devices. These devices can store information through a reversible switch from high to low resistance. The material that is being studied consists of NiO sandwiched between Pt electrodes. A shadow mask set consisting of three stainless steel masks was designed. Device test wafers with different oxygen concentration were made by rf magnetron sputtering. Each wafer contained 9 four-point probe devices with different dimensions. To measure the resistivity and switching properties of the device wafers, we created a measuring station. Electrical connections between the test station and the device wafers are made by a 6x6 array of pogo pins that can be lowered onto the sample. Connecting a device to four pogo pins allows for a voltage to be applied across two pins while the other pins can measure an IV curve. In addition to the setup preliminary results on an oxygen series of RRAM devices wafers will be discussed.

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