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**Characterizing oxide surfaces for successful interfacial resistive switching** NILANJAN DAS, STEPHEN TSUI, WAQI WANG, YUYI XUE, TCSUH, C.W. CHU, Hong Kong University of Science and Technology, TCSUH, Lawrence Berkeley National Laboratory — Resistive switching has been observed in many oxide-metal interfaces upon application of electric pulses. However, the mechanisms behind the phenomenon and the conditions for obtaining a successful switch are still matters of debate. It has been suggested that local defect rearrangement plays a role in the switching, which suggests that a defect-rich interface is required. There has also been indication that the local application of an electric field greater than some threshold is enough to induce a switch. We attempt to differentiate between these two scenarios by measuring samples with different surface treatments using a needle electrode method. Ac measurements have also been made to characterize the difference between switching and non-switching samples. The results suggest that the switching interface is a percolative layer.

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