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Orientation Studies of Recrystallized Vanadium Dioxide FELIPE RIVERA, MIKE CLEMENS, Brigham Young University, LAUREL BURK, University of Nebraska - Lincoln, ROBERT DAVIS, RICHARD VANFLEET, Brigham Young University — Crystalline films and isolated vanadium dioxide particles were obtained through thermal annealing of amorphous vanadium dioxide thin films on silicon dioxide. Vanadium dioxide undergoes an insulator to metal transition near 66 °C. Orientation Imaging Microscopy (OIM) was used to study the phase and orientation of the crystals formed, as well as to differentiate from different vanadium oxide crystal structures. Kikuchi patterns for the tetragonal phase of vanadium dioxide were used for indexing as the Kikuchi patterns for the two phases are indistinguishable by OIM. There is a preferred orientation for the growth of these crystals with the c axis of the tetragonal phase parallel to the plane of the specimen. Resistance and Capacitance measurements on these films are being performed to study the electronic chracteristics of this phase transition. The results of this study will be presented.

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