

Abstract Submitted  
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**Role of Grain Boundaries in the Conductivity of Vanadium Dioxide Thin Films** FELIPE RIVERA, RICHARD VANFLEET, ROBERT DAVIS, Brigham Young University — Vanadium dioxide ( $\text{VO}_2$ ) single crystals undergo a structural first-order metal to insulator phase transition at approximately  $68^\circ\text{C}$ . This phase transition exhibits a resistivity change of up to 5 orders of magnitude in bulk specimens. We observe a 2-3 order of magnitude change in thin films of  $\text{VO}_2$  presumably due to the large number of grain boundaries in the film. The interface between grains was studied by TEM and appears amorphous. Electron energy loss spectroscopy shows  $\text{VO}_2$  like spectra with no additional surface oxidation.

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