Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Current induced Metal-Semiconductor Transition in VO2 grown on Pt JIWEI LU, SALINPORN KITTIWATANAKUL, STUART WOLF, University of Virginia — Vanadium dioxide (VO_2) exhibits a metal-semiconductor transition at 340K; this transition can also be triggered by an electric field or direct current injection. In this study VO_2 was grown on 100 nm thick Pt bottom electrodes. The top Pt contacts were added for the transport measurements. The transport behavior indicated a reduced transition temperature. We have shown that the switching voltage for a Pt/VO2/Pt structure was as low as 0.3 V, and at this voltage we observed two orders of magnitude change in the resistance. XPS will be used to determine the valence state.

Jiwei Lu
University of Virginia

Date submitted: 14 Nov 2012 Electronic form version 1.4