

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Antiferromagnetism in Bulk Rutile RuO<sub>2</sub>**<sup>1</sup> T. BERLIJN, Oak Ridge National Laboratory, P. C. SNIJDERS, P. R. C. KENT, T. A. MAIER, Oak Ridge National Laboratory, University of Tennessee, H.-D. ZHOU, University of Tennessee, H.-B. CAO, O. DELAIRE, Y. WANG, Oak Ridge National Laboratory, M. KOEHLER, University of Tennessee, H. H. WEITERING, University of Tennessee, Oak Ridge National Laboratory — While bulk rutile RuO<sub>2</sub> has long been considered to be a Pauli paramagnet, we conclude it to host antiferromagnetism based on our combined theoretical and experimental study. This constitutes an important finding given the large amount of applications of RuO<sub>2</sub> in the electrochemical and electronics industry. Furthermore the high onset temperature of the antiferromagnetism around 1000K together with the high electrical conductivity makes RuO<sub>2</sub> unique among the ruthenates and among oxide materials in general.

<sup>1</sup>This work was supported by the U.S. Department of Energy, Office of Science, Basic Energy Sciences, Materials Sciences and Engineering Division.

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Date submitted: 16 Nov 2015

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