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Electrical transport and thermodynamic properties of $\gamma - Mo_4O_{11}$
ARIANA DE CAMPOS, M.S. DA LUZ, B.D. WHITE, J.J. NEUMEIER, Montana State University — Low-dimensional systems have attracted a lot of attention during the last two decades because of their unusual chemical and physical properties [1]. $\gamma - Mo_4O_{11}$ is one such system exhibiting strong structural anisotropy, which is reflected in the electronic structure. This gives rise to uncommon features such as low-dimensional transport, metal insulator and metal−metal transitions, and periodic lattice distortions and charge density waves (CDW) [2]. In this work the properties of $\gamma - Mo_4O_{11}$ single crystals are revisited. The single crystals were grown using a temperature- gradient flux method [3]. Electrical resistance as a function of temperature was determined with the Logan-Montgomery methods [4, 5] and was compared with reported measurements. We will report results of heat capacity and high-resolution thermal expansion measurements as well. [1] M.A.Valbuena, et al. Appl. Surf. Sci., 254, 40 (2007). [2] C. Schlenker, et al. Philos. Mag. B, 52, 643 (1985). [3] W. H. McCarroll and M. Greenblatt, J. Solid State Chem. 54, 282 (1984). [4] H. C. Montgomery, J. Appl. Phys. 42, 2971 (1971). [5] B. F. Logan, S. O. Rice, and R. F. Wick, J. Appl. Phys. 42, 2975 (1971). This material is based upon work supported by the Brazilian Agency CNPq (Grant No. 201439/2007-7), the NSF (Grant No. DMR- 0504769) and U.S. DOE Office of Basic Energy Sciences (Grant No. DE-FG-06ER46269).

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