

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

High-Temperature Electrical and Magnetic Properties of Undoped Iron Pnictides JIANNENG LI, Y. YANG, R. JIN, Louisiana State University, J.R. THOMPSON, The University of Tennessee, Oak Ridge National Laboratory, H. WANG, B.C. SALES, A.S. SEFAT, M.A. MCGUIRE, Oak Ridge National Laboratory, V. KEPPENS, The University of Tennessee, D. MANDRUS, Oak Ridge National Laboratory — We have investigated the electrical and magnetic properties of several parent compounds of Fe-based superconductors in a wide temperature range. In addition to the well-known transitions (one structural transition at T_s and one spin-density-wave (SDW) transition at T_M), all investigated parent compounds (BaFe_2As_2 , SrFe_2As_2 , LaFeAsO , FeTe) show unusual features in both magnetic susceptibility and electrical resistivity at high temperatures (T). Above T_s , their magnetic susceptibility increases more or less linearly with increasing temperature up to at least 700 K. On the other hand, the electrical resistivity exhibits non-monotonic temperature dependence, revealing non-metallic character at high temperatures. The implication of these results will be discussed.

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Date submitted: 16 Feb 2010

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