

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Temperature and Spatial Dependence of the Superconducting and Pseudogap of $\text{NdFeAsO}_{0.86}\text{F}_{0.14}$. X.B. HE, Louisiana State University, Baton Rouge, LA, M.H. PAN, Oak Ridge National Laboratory, Oak Ridge, TN 37831, G.R. LI, University Of Tennessee, Knoxville, TN 37996, J.F. WENDELKEN, Oak Ridge National Laboratory, Oak Ridge, TN 37831, R.Y. JIN, Louisiana State University, Baton Rouge, LA 70803, A.S. SEFAT, M.A. MCGUIRE, B.C. SALES, D. MANDRUS, Oak Ridge National Laboratory, Oak Ridge, TN 37831, E.W. PLUMMER, Louisiana State University, Baton Rouge, LA 70803 — Scanning tunneling microscopy/spectroscopy are used to investigate the superconducting gap and pseudogap of Fe based high-Tc superconducting material $\text{NdFeAsO}_{0.86}\text{F}_{0.14}$ at various temperatures from 17 K to 150 K. The superconducting gap (SG) in the tunneling spectra follows the BCS prediction and closes at Tc of the bulk material. Surprisingly, a pseudogap (PG) opens abruptly just above Tc and closes at 120 K, strongly suggesting that the SG and PG states have competing order parameters in contrast to the cuprates. The PG state may be related to spin fluctuations in the doped materials. Research was supported in part at ORNL by Laboratory Directed Research and Development funds and by the Division of Materials Sciences and Engineering, Office of Basic Energy Sciences, US DOE.

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Date submitted: 16 Dec 2008

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