Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Pressure effects on strained $FeSe_{0.5}Te_{0.5}$ thin films MELISSA GOOCH, BERND LORENZ, Department of Physics and TcSUH at the University of Houston, SUNXIANG HUANG, CHIA-LING CHIEN, Department of Physics and Astronomy at John Hopkins University, PAUL CHU, Department of Physics and TcSUH at the University of Houston; Lawrence Berkeley National Laboratory — FeSe is the simplest structure in the family of the iron pnictides, with a reported superconducting transition of 8K for the α-PbO- type structure. With the substitution of Te for Se, $FeSe_{0.5}Te_{0.5}$, was found to have an increased superconducting transition up to 15.2 K. To investigate the strain effect on the superconducting properties of the $FeSe_{0.5}Te_{0.5}$, thin films were grown under different conditions. The Tc and the normal state properties show a correlation to the induced strain of the system. The application of external pressure resulted in an increase of T_c, but at different rates depending on the pre-existent strain in the system.

Melissa Gooch
Department of Physics and TcSUH at the University of Houston

Date submitted: 19 Nov 2010 Electronic form version 1.4