

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Scanning Tunneling Microscopy of Manganites¹ ICON MAZZACCARI, HYOUNGJEEN JEEN, AMLAN BISWAS, Department of Physics, University of Florida, Gainesville, FL 32611 — We have built a scanning tunneling microscope (STM) which employs a mechanical coarse approach mechanism. We have tested the mechanical and electronic components of the system and calibrated the piezoelectric scanning mechanism by imaging highly ordered pyrolytic graphite (HOPG) at room temperature. Atomic resolution HOPG images were obtained when the STM was placed inside a vibration isolated liquid helium dewar. We have also scanned single crystals and thin-films of hole-doped manganese oxides (manganites) and obtained images on the scale of about 100 nm to about 10 nm. After obtaining satisfactory images at room temperature, we will cool the apparatus first down to liquid nitrogen temperature (77 K) and then down to liquid helium temperature (4.2 K) to investigate micrometer and nanometer scale phase separation in manganites.

¹NSF DMR-0804452

Icon Mazzaccari
University of Florida

Date submitted: 18 Nov 2010

Electronic form version 1.4