Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Hall effect in tungsten-bronze thin films[1] AKIO TSUKADA, ROBERT HAMMOND, THEODORE GEBALLE, MALCOLM BEASLEY, Stanford University — Hall effect in tungsten-oxide thin-films is investigated. Tungsten oxides (M_xWO_{3-y}) have long been studied for their interesting structural, electronic and electro-chromic properties. A pure tungsten trioxide (WO_3) is an insulator and doping of M (M = alkali or alkali-earth element) or oxygen deficiency makes the system conducting and sometimes superconducting. Indeed, even some very high T_c anomalies have been reported. We have succeeded in growth of superconducting K_xWO_{3-y} thin films and noticed that oxygen composition strongly affect the superconducting properties. Few reports for oxygen non-stoichiometry effects on the superconductivity in tungsten oxides are available, and the relationship between these normal state electronic properties and the superconducting properties of these materials has not yet been fully clarified. In this presentation, we will discuss relationship between superconductivity, oxygen non-stoichiometry and Hall coefficient.

[1]This work is supported by Air Force Office of Scientific Research.

Akio Tsukada
Stanford University

Date submitted: 20 Nov 2009 Electronic form version 1.4