Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

**Design of Low Temperature AC Susceptibility Measurement Scheme for Molecular Magnets** SIMCHA KORENBLIT, BYOUNG MOON, YOONSEOK LEE, University of Florida, REZA SULTAN, Canterbury High School — AC susceptibility is one of the most important physical properties in many materials such as magnetic materials and superconductors. Although there are many commercial AC susceptibility measurement systems which cover a broad range of temperatures, it is still a daunting task to extend their measurement range into the low millikelvins. We are currently developing a low temperature AC susceptometer for the mK range. As a part of this effort, we have developed a versatile low-cost computer controlled coil-winder to make various types of coils. We have designed primary and secondary coils and wound them using the machine, and performed characterization of the AC susceptometer. In this presentation, I will explain the basics of magnetic susceptibility, its measurement, design considerations for building an AC magnetic susceptometer, and discuss the details of an actual apparatus designed and realized by the authors.

Simcha Korenblit
University of Florida

Date submitted: 29 Nov 2005 Electronic form version 1.4