

Abstract Submitted
for the OSF06 Meeting of
The American Physical Society

Infrared and magneto-optical studies of novel condensed matter systems LEE KOHLMAN, SASA DORDEVIC, The University of Akron — We will present the results of our recent infrared and magneto-optical measurements on high temperature superconductors $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$, heavy fermion metal $\text{YbFe}_4\text{Sb}_{12}$ and half-metallic ferromagnet Mn_5Ge_3 . The results demonstrate the power of spectroscopic techniques, which allow one to study materials in extreme experimental conditions, such as temperature as low as 4.2 K and magnetic field as high as 33 Tesla. The results reveal failure of free-electron model for these novel condensed matter systems and importance of electron-electron correlations.

Sasa Dordevic
The University of Akron

Date submitted: 22 Sep 2006

Electronic form version 1.4