

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Density wave like transport anomalies in surface doped Na_2IrO_3 ¹
YOGESH SINGH, KAVITA MEHLAWAT, Indian Institute of Science Education and Research Mohali, India — We report that the surface conductivity of Na_2IrO_3 crystal is extremely tunable by high energy Ar plasma etching and can be tuned from insulating to metallic with increasing etching time. Temperature dependent electrical transport for the metallic samples show signatures of first order phase transitions which are consistent with charge or spin density wave like phase transitions recently predicted theoretically. Additionally, grazing-incidence small-angle x-ray scattering (GISAXS) reveal that the room temperature surface structure of Na_2IrO_3 does not change after plasma etching.

¹YS acknowledges DST, India for support through Ramanujan Grant # SR/S2/RJN-76/2010 and through DST grant # SB/S2/CMP-001/2013.

Yogesh Singh
Indian Institute of Science Education and Research Mohali

Date submitted: 13 Apr 2017

Electronic form version 1.4