High Pressure Transport Studies of NdIn₃

KENNETH PURCELL, Univ of Southern Indiana, DAVID GRAF, National High Magnetic Field Laboratory, TAKAO EBIHARA, Shizuoka University — NdIn₃ is a cubic antiferromagnetic metal that orders with a Neel temperature of 5.9 K and belongs to a family of rare earth intermetallic compounds RIn₃ that have a cubic AuCu₃-type crystal structure. At 0.5 K and the magnetic field applied in 100 direction, NdIn₃ exhibits metamagnetic transitions at 7.8 T and 8.9 T before entering a field induced paramagnetic state at 11.1 T. We report high pressure transport studies of single crystal NdIn₃ and the effect that pressure has on the Neel temperature, critical field, and metamagnetic transitions observed in the magnetoresistance. Comparisons to the behavior of the pressure induced superconductor CeIn₃ will be discussed.

Kenneth Purcell
Univ of Southern Indiana

Date submitted: 06 Nov 2014