

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Measuring the Absolute Penetration Depth in Superconducting Materials. NICHOLAI SALOVICH, University of Illinois at Urbana-Champaign, RUSSELL GIANNETTA, University of Illinois at Urbana Champaign, RUSLAN PROZOROV, PAUL CANFIELD, Iowa State University, Ames Laboratory, SERGEY BUD'KO — The absolute penetration depths of a variety of superconductors were measured using a method involving a high precision tunnel diode oscillator and an Aluminum film coating method [1]. Variations of the Al film geometry (thickness, coverage area, etc) and microstructure (grain size, RRR, etc) were used to test the reliability and versatility of the coating technique. A variety of supplemental techniques (dual beam SEM, EBS, AFM, XRD, etc) were used to independently characterize the films and control their quality. Special emphasis was placed on measurements of cobalt doped iron pnictide samples given the well established quality of such samples now available. Work at UIUC supported by NSF DMR 10-05708, and Center for Emergent Superconductivity USDOE Award No. DE-AC02-98CH10886. Work at the Ames Laboratory was supported by the division of Materials Science and Engineering, Basic Energy Sciences, Department of Energy (US DOE), under Contract No. DEAC02-07Ch11358.

[1] R. Prozorov, et al, Appl. Phys. Lett 77,1202 (2000)

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Date submitted: 03 Jan 2011

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