Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Magnetotransport in Co_2TiSn ANKE HUSMANN, Toshiba Research Europe Ltd, Cambridge, UK, MARK HICKEY, University of Cambridge, Cambridge, UK, STUART N. HOLMES, Toshiba Research Europe Ltd, Cambridge, UK, MICHAEL PEPPER, Toshiba Research Europe Ltd and University of Cambridge, Cambridge, UK, TOSHIBA RESEARCH EUROPE LTD TEAM, UNIVERSITY OF CAMBRIDGE TEAM — The Heusler alloy Co_2TiSn is a ferromagnet with a Curie temperature of 355K. Our theoretical predictions by CASTEP as well as calculations done by others [1] show a high spin polarisation in the conduction band making it a promising candidate for a metallic spin injector. We study its magnetotransport properties as well as MOKE and magnetisation data on bulk crystals and find a large anomalous Hall coefficient indicating a significant spin-orbit coupling. We compliment our theoretical band structure calculations with point contact probe measurements between the magnetic metal surface and a superconducting tip to obtain the spin polarisation at the Fermi energy.

[1] A. Yamasaki et al., Phys. Rev. B **65**, 104410 (2002).

Anke Husmann
Toshiba Research Europe Ltd, Cambridge, UK

Date submitted: 26 Nov 2004 Electronic form version 1.4