Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Magnetotransport Properties of Magnetic Oxides WILL BRANFORD, FRIDRIK MAGNUS, Blackett Laboratory, Imperial College, Prince Consort Road, London, SW7 2BZ, U.K, YING LIN LIU, NEERAJ KHARE, MING WEI, JUDITH MACMANUS-DRISCOLL, Dept of Materials Science, University of Cambridge, Cambridge CB2 3QZ, UK, MARIA LUISA PARAMES, NICOLETA POPOVICI, ERNESTO JIMENEZ, OLINDA CONDE, Univ Lisbon, Fac Ciencias, Dept Fis, Ed C8, P-1749016 Lisbon, Portugal,, KELLY MORRISON, YASUYUKI MIYOSHI, STEVEN CLOWES, YURY BUGOSLAVSKY, LESLEY COHEN, Blackett Laboratory, Imperial College, Prince Consort Road, London, SW7 2BZ, U.K — Hybrid spintronic devices require high Curie temperature ferromagnets with a large transport spin polarization. It has been predicted that efficient spin injection is facilitated by matching the conductance of the ferromagnet to that of the semiconductor and in this respect dilute magnetic semiconductors look to be more attractive for application. Oxide dilute magnetic semiconductors are the only class to date that may offer Curie Temperatures above 300K. Here we review the effect of chemical substitution and/or growth parameters on the magnetic, magnetotransport and spin polarisation of charge carriers of a range of functional ferromagnetic oxides, such as Fe_3O_4, $Nd_2Mo_2O_7$, $Co_xTi_{1-x}O_2$ and $Co_xZn_{1-x}O$.

Will Branford
Blackett Laboratory, Imperial College
Prince Consort Road, London, SW7 2BZ, U.K

Date submitted: 02 Dec 2004 Electronic form version 1.4