

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Spin transport in graphene strongly coupled to ferromagnetic leads¹ JELENA TRBOVIC, HAGEN AURICH, GUNNAR GUNNARSSON, CHRISTIAN SCHOENENBERGER, University of Basel — We study low temperature spin transport in graphene layers by using NiPd alloy as ferromagnetic contacts. This type of contacts has been successfully used in realizing carbon nanotube-based spin devices. The measurements are done in the temperature range between 240 mK and 1.6 K with average electrode separation of 0.7 μm . We find a clear two-terminal spin-valve signal while sweeping the magnetic field in plane of the device, with about 3% effect. However, the signal rapidly decays with increasing temperature and vanishes above 1.6 K. We believe that the observed rapid dephasing is due to the strong coupling of PdNi contacts to the graphene layer. In addition, three-terminal measurements (quasi non-local) have been done in the same temperature range in order to study the influence of a single NiPd electrode on the observed spin transport.

¹This work has been supported by the Swiss Institute on Nanoscience, the Swiss National Science Foundation and the EU HYSWITCH project.

Jelena Trbovic

Date submitted: 27 Nov 2007

Electronic form version 1.4