

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Spin transfer in exchange biased magnetic nanopillars NICKOLAS ANTHONY, SERGEI URAZH DIN, West Virginia University — We present a study of the effect of current on the magnetic state of nanopatterned ferromagnetic/antiferromagnetic bilayers. We show that the magnetic state of the antiferromagnet can be affected by a high current density. First, the exchange bias can be altered by applying a pulse of current. The change is accompanied by an increase of coercivity. Additionally, the magnetic anisotropy depends on the value and the direction of the applied current. Our findings cannot be explained by the Joule heating, and indicate that a spin transfer effect similar to that previously demonstrated for ferromagnets is also responsible for the current-induced effects in nanopatterned antiferromagnets.

Nickolas Anthony
West Virginia University

Date submitted: 03 Dec 2006

Electronic form version 1.4