

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Light-induced pure spin current¹ JINGZHE CHEN,
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HONG GUO'S GROUP TEAM — We propose theoretically that a pure
spin current without an accompanying charge current can be generated
by light in magnetic tunneling junctions. The principle is based on a
photovoltaic effect combined with the spin selectivity of the magnetic
electrodes of the junction. We demonstrate this effect in graphene nano-
structures by atomic first principles calculation. The results show that
appreciable pure spin-currents and open circuit spin bias are generated
in pure graphene nanostructures, and it can reach significant values if
half metal with high spin polarization is used as the electrodes.

¹We gratefully acknowledge financial support by NSERC of Canada,
FRQNT of Quebec and CIFAR (H.G.). We thank CLUMEQ and
RQCHP for providing computation facilities.

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Date submitted: 11 Nov 2011

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