

Abstract Submitted  
for the MAR15 Meeting of  
The American Physical Society

**Lateral hydrogenated graphene/h-BN Tunneling Magnetoresistance Devices** SHAYAN HEMMATIYAN, CRISTIAN CERNOV, ARTEM ABANOV, Department of Physics, Texas A&M University, College Station, Texas 77843-4242, USA, MARCO POLINI, NEST, Istituto Nanoscienze - CNR and Scuola Normale Superiore, I-56126 Pisa, Italy, ALLAN H. MACDONALD, Department of Physics, University of Texas at Austin, Austin, Texas 78712-1081, USA, JAIRO SINOVA, Institut für Physik, Johannes Gutenberg Universität Mainz, D-55099 Mainz, Germany — Based upon first principle calculations, we propose a practical heterostructure of hydrogenated graphene on the top of hexagonal-boron nitride, which exhibits ferromagnetic properties and relatively large spin orbit coupling. We propose to use this functional substrate for the lateral spin valve systems.

Shayan Hemmatiyani  
Department of Physics, Texas A&M University,  
College Station, Texas 77843-4242, USA

Date submitted: 14 Nov 2014

Electronic form version 1.4