

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Studies of magnetoresistance in organometal halide perovskite based spin-valves*¹ JINGYING WANG, DALI SUN, CHUANG ZHANG, Z. VALY VARDENY, Univ of Utah, VARDENY GROUP TEAM — Lead-based organometal halide perovskites (OHP) have recently attracted substantial research interest due to their potential photovoltaic and optoelectronic applications as well as non-traditional semiconductor physics. The carrier spin characteristic properties in these compounds are influenced by the large spin-orbit coupling of the Pb and halogen atoms, and consequently offer a new class of semiconductors for spintronic applications. We have studied magnetoresistance (MR) in OHP-based spin-valves using LSMO/OHP/Co trilayer devices. We report sizable ‘giant-MR’ and ‘tunneling-MR’ in spin-valves based on several 3D and 2D OHP active layers. The two types of MR responses were studied and compared as a function of the applied bias voltage and temperature, respectively. *Supported by the DOE grant DE-SC0014579 and NSF-MRSEC (DMR-1121252).

¹Supported by the DOE grant DE-SC0014579 and NSF-MRSEC (DMR-1121252).

Jingying Wang
Univ of Utah

Date submitted: 11 Nov 2016

Electronic form version 1.4