

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Magnetotransport in Pulsed Laser Deposited Manganese Doped Lead Sulfide Films** GAURAB RIMAL, KESHAB SAPKOTA, Department of Physics & Astronomy, University of Wyoming, ARTUR MAKSYMOW, LEONARD SPINU, Advanced Materials Research Institute, University of New Orleans, WENYONG WANG, JINKE TANG, Department of Physics & Astronomy, University of Wyoming — Diluted magnetic semiconductors (DMS) have been proposed as promising candidates for spintronic applications. Most research in this field has been confined to III-V and II-VI semiconductor system. There are reports on IV-VI semiconductors, however reports on lead sulfide (PbS) based DMS is limited. We study the transport, magnetic and structural properties of manganese doped lead sulfide (Mn:PbS) films produced by pulsed laser deposition (PLD). The films are found to show hopping transport at low temperature. Low temperature magnetoresistance (MR) studies show that the sign of MR can be changed by application of gate voltage. The magnetic properties of the films were also studied which showed ferromagnetic behavior at room temperature.

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Date submitted: 03 Nov 2015

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