

Abstract Submitted
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The spin-Seebeck effect in a GaMnAs/MnAs bilayer CHRISTOPHER JAWORSKI, Department of Mechanical Engineering, The Ohio State University, JING YANG, Department of Materials Science and Engineering, The Ohio State University, SHAWN MACK, DAVID AWSCHALOM, Center for Spintronics and Quantum Computation, University of California, Santa Barbara, JOSEPH HEREMANS, Department of Mechanical Engineering and Department of Physics, The Ohio State University, ROBERTO MYERS, Department of Materials Science and Engineering and Department of Physics, The Ohio State University — The spin-Seebeck effect, recently discovered in ferromagnetic metals such as permalloy, semiconductors such as GaMnAs and insulators such as YIG, consists of a thermally generated spin redistribution. This effect is measured by detecting an inverse spin Hall voltage that varies spatially across a sample due to the thermally generated local spin currents. Here, we describe measurements of the spin-Seebeck effect in metallic ferromagnetic MnAs thin films grown on GaMnAs. The difference in H_c and T_c of each layer allows independent measurement of spin-Seebeck signals arising from MnAs from that of GaMnAs. We discuss the effect of the exchange bias between these layers on the spin-Seebeck effect above and below the magnetic phase transition. Work support in parts by NSF, NSF-CBET-0754023, ONR, and DMR-0820414.

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