

Abstract Submitted
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Studies Thermoelectric and Magneto Transport of the Phase Change material Ge₂Sb₂Te₅ MING YIN, MOHAMMED ABDI, ZIBUSISU NOIMANDE, GODWIN MBAMALU, Benedict College, LEI WANG, TIMIR DATTA, University of South Carolina — Phase Change materials (PCM) such as Ge₂Sb₂Te₅ can be reversibly and rapidly switched between amorphous and crystalline phases by an electrical pulse. Hence PCM are used in flash memory applications. However, the thermoelectric properties of these materials are interesting. It is important to understand thermoelectric behavior of PCM for the optimal operation of these devices. But the low temperature experimental data is limited. Here we report measurements of Seebeck and magneto transport Coefficients at low temperature of GST225. In the temperature range from 9 K to 300 K, the Seebeck Coefficient of our sample increases with temperature increase from 1.5e-6 V/K to 33e-6 V/K. At low temperatures a positive magneto-resistance (MR) was observed for dc magnetic field (B) up to 9 Tesla. The temperature and field dependence of the electrical properties (MR) from 2.8 K to 20 K and 0 to 10 T will be reported.

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