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^{69}Ga Knight shift in semi-insulating GaAs observed by optically polarized NMR KANNAN RAMASWAMY, Washington University in St.Louis, STACY MUI, Washington University in St.Louis, SOPHIA HAYES, Washington University in St.Louis — Optical orientation in semiconductors continues to capture the attention of many researchers all over the world[1,2]. This is especially due to the emergence of a new area called "spintronics" where it is proposed that the spin of the electrons instead of its charge will be manipulated to create various devices. We report ^{69}Ga optically polarized NMR investigations in semi-insulating GaAs at 6K. In our investigations, we have observed ^{69}Ga Knight shifts for photon energies above and below the band gap. This observation is important in understanding the mechanism of NMR signal enhancement in semiconductors by polarized light. Our investigations also indicate that nuclear spin-diffusion plays a role in the NMR signal intensity for illumination times of the order of 100s and above. Furthermore, an estimate of $\sim$0.067 has been obtained for the average electron spin polarization which is 26% of the maximum achievable polarization in bulk GaAs. The cause for the reduction is under investigation. 1. Meier and B. P. Zakharchenya , Modern Problems in Condensed Matter Sciences, Vol 8, F. (1984)

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