SEMINAR ANNOUNCEMENT

“Hall Effect in Conductors and Semiconductors”

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This project is concerned with the experimental determination of the primary charge carriers via the Hall effect experiment. The aim of this experiment is to exhibit the effects of a magnetic field ($\vec{B}$) on a current carrying conductor or semiconductor. During the experiment, it was observed that when a control current carrying copper plate is placed in a magnetic field perpendicular to the direction of the current, a voltage is created across the copper plate in a direction perpendicular to both the magnetic field and the direction of the current. This phenomenon is called the Hall Effect. This effect is useful in determining the types of charge carriers in a conductor or semiconductor, be they p-type or n-type; the number density of charge carriers; and the mobility of charge carriers. The Hall coefficient is a manifestation of the level to which the Hall effect takes place in a conductor or semiconductor. The higher the Hall coefficient is, the greater the voltage generated by the Hall effect for any given magnetic field intensity and current value. In this experiment the Hall coefficient of copper was found to be -6.4×10^{-11} $m^3/(A\cdot s)$. The negative sign indicates that the dominant charge carriers in copper are negative, i.e. electrons, as expected.