Hall Effect
Lecture-13

TDC PART -1

PAPER 1(GROUP B)

Chapter -4

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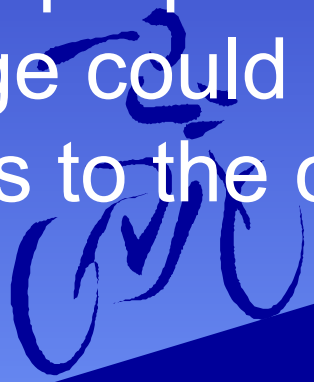
What is the principle of Hall effect?

- The Hall-effect principle is named for physicist Edwin Hall. In 1879 he discovered that when a conductor or semiconductor with current flowing in one direction was introduced perpendicular to a magnetic field a voltage could be measured at right angles to the current path



What is meant by Hall effect?

- The Hall effect is when a magnetic field is applied at right angles to the current flow in a thin film where an electric field is generated, which is mutually perpendicular to the current and the magnetic field and which is directly proportional to the product of the current density and the magnetic induction.

How do you calculate Hall effect?

When calculating the Hall voltage, we need to know the current through the material, the magnetic field, the length, the number of charge carriers, and the area.

$$v=IBlneA$$

The effect of temperature on Hall coefficient

- As temperature increases at different magnetic field Hall coefficient decreases ,carrier concentration increases and Hall mobility decreases. mount resistors. Semiconductor and effect of temperature on semiconductors is wide research field in electronics as well as thermal semiconductors.