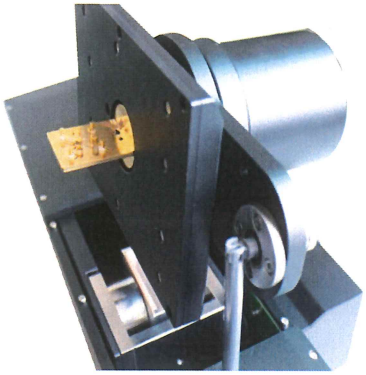

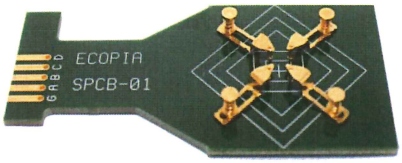

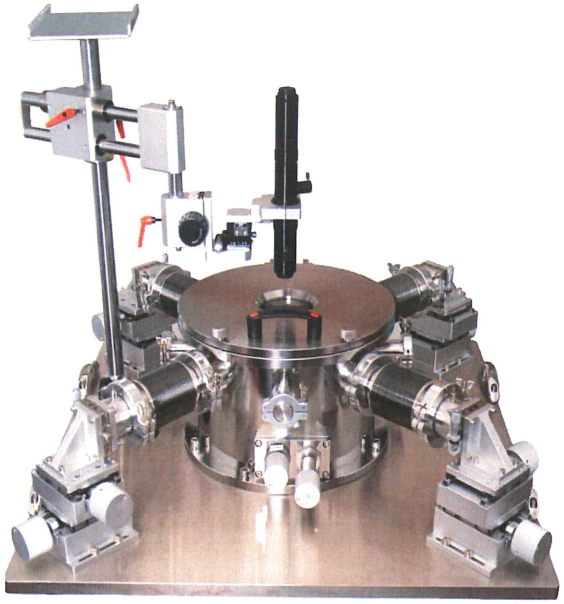

Hall effect, Probe station, and Accessories

Introduction

Ecopia' Hall effect measurement system is very easy to use ,convenient to install and complete system in desktop design.

You can get below electrical parameters of semiconductor materials as per temperature variation.

* Carrier density (1/cm3)
* Mobility (cm2/volt.sec)
* Resistivity (ohm.cm)
* N/P type decision
* Hall Coefficient

Basic theory for hall effect – Lorentz force

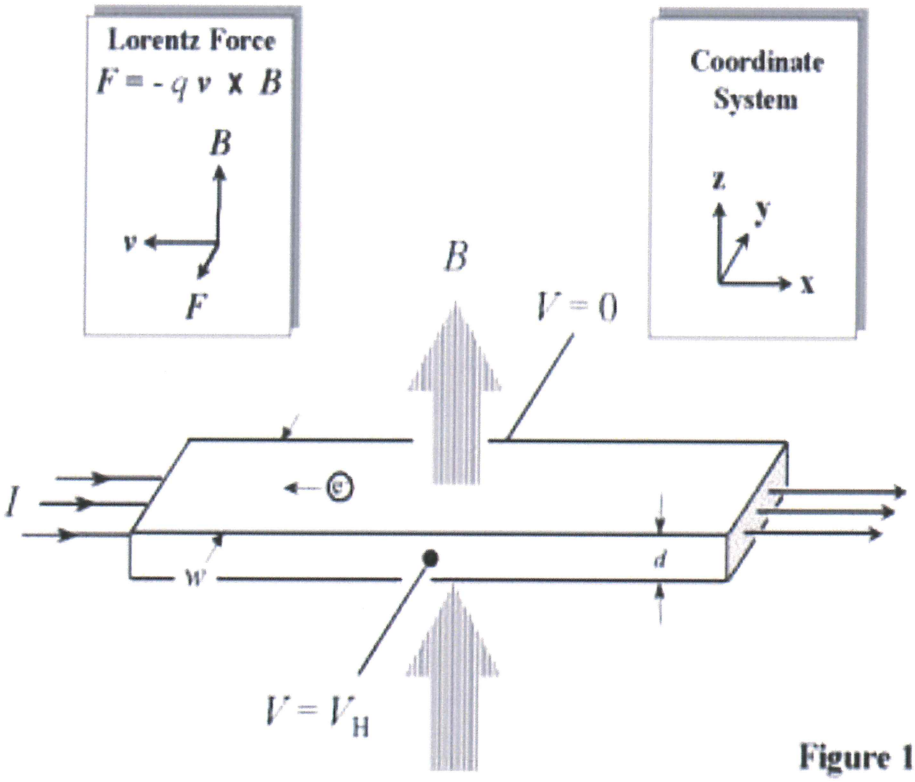

Figure 1

Basic theory for hall effect – Vander pauw Technique

The van der Pauw Method is a technique commonly used to measure the Resistivity and the Hall Coefficient of a sample. Its power lies in its ability to accurately measure the properties of a sample of any arbitrary shape, so long as the sample is approximately two-dimensional (ie. it is much thinner than it is wide) and the electrodes are placed on its perimeter.

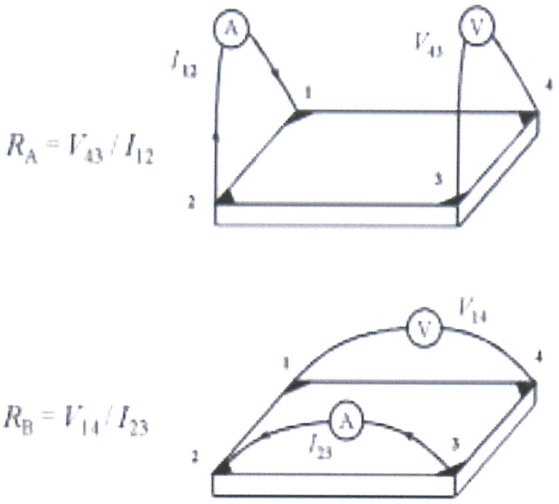

Figure 2

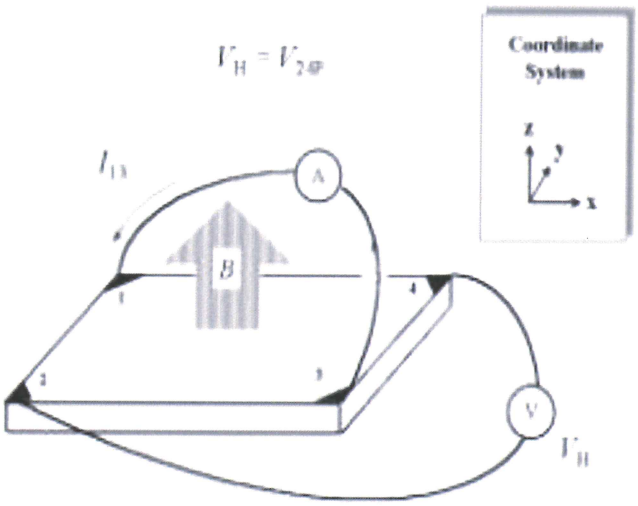

Figure 3

There are five conditions that must be satisfied to use this technique:

1. The sample must have a flat shape of uniform thickness
2. The sample must not have any isolated holes
3. The sample must be homogeneous and isotropic
4. All four contacts must be located at the edges of the sample
5. The area of contact of any individual contact should be at least an order of magnitude smaller than the area of the entire sample.