

# Gouy's Experiment

GMX-01

SES Instruments Pvt Ltd.

## Apparatus for Measurement of Susceptibility of Paramagnetic Solids by Gouy's Method



### Description

In the Gouy's method of susceptibility measurement, the solid sample in the form of a long cylinder (area of cross section  $A$ ) is hung from the pan of a balance and is placed such that one end of the sample is between the pole-pieces of the magnet (field  $H$ ) and the other one is outside the field. The force exerted on the sample by the inhomogeneous magnetic field is obtained by measuring the apparent change ( $\Delta m$ ) in the mass of the sample. The susceptibility  $\chi$  is given By  $2 \chi = 2\Delta mg/AH$  If the sample

## Description of Experimental Set-up

### 1. Scientific Balance, KSB-07

Capacity : 200gms

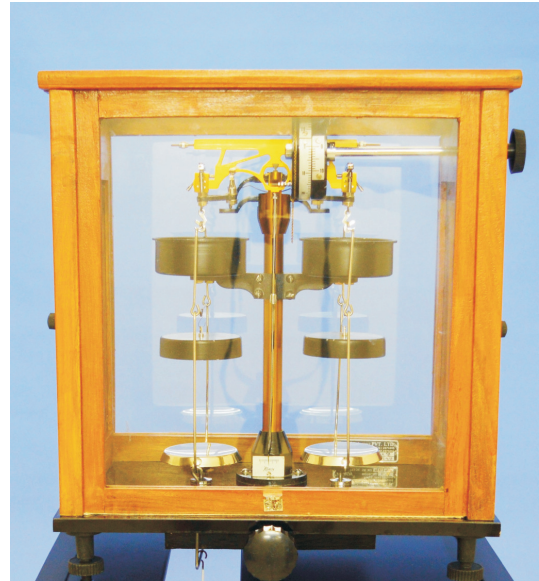
Sensitivity : 1/10 mg by vernier

Beam : Hard Bronze/ Brass

Arrestment : Circular, falling away type

Air Damping : Very quick and positive,  
beam coming to rest in 2-3 sec

Chainomatic Device: A gold plated chain is suspended from the beam with its other end screwed on the rotating drum on which a scale graduated from 0 to 10 div each division representing 1mg is installed. By the movement of this scale before a vernier, reading upto 1/10th mg is taken



### 2. Samples

Aluminium Sample is provided with the steep in the form of a long rod

### 3. Electromagnet, Model EMU-50T

Field Intensity : 9.0KG at 10mm air-gap with tapered pole pieces

Pole Pieces : 50mm diameter

Energising Coils : Two, each with a resistance of about  $3.0\Omega$

Power Requirement : 0-30Vdc, 4A, if coils are connected in series

Weight : 33Kg



### 4. Constant Current Power Supply, Model DPS-50

Current Range : Smoothly adjustable from 0-4A

Load Regulation : 0.1% for load variation from 0 to max.

Line Regulation : 0.1% for  $\pm 110\%$  mains variation

Display : 3½ digit, 7 segment LED DPM

Power : 220V  $\pm 10\%$ , 50Hz

## 5. Gaussmeter, Model DGM-202

Resolution : 1 gauss at 2 kilogauss range

Range : 2KG and 20KG

Accuracy :  $\pm 0.5\%$

Temperature : Upto 40°C

Display : 3½ digit, 7 segment LED DPM with auto polarity and overflow indication

Power : 220V  $\pm 10\%$ , 50Hz

Transducer : Hall Probe-GaAs

Special Feature : Indicates the direction of the magnetic field



## 6. GMX-01 Stand

## 7. KSB-07 Weight Box



***The setup is complete in itself***