

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  $c$  is given by

$$c = 2\Delta m g / AH^2$$

If the sample is in the form of powder, it is filled in a long nonmagnetic tube which is then suspended from the pan of the balance.



The set up consists of the following:

**(a) Scientific Balance**

- Capacity : 200 gms
- 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 Device 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

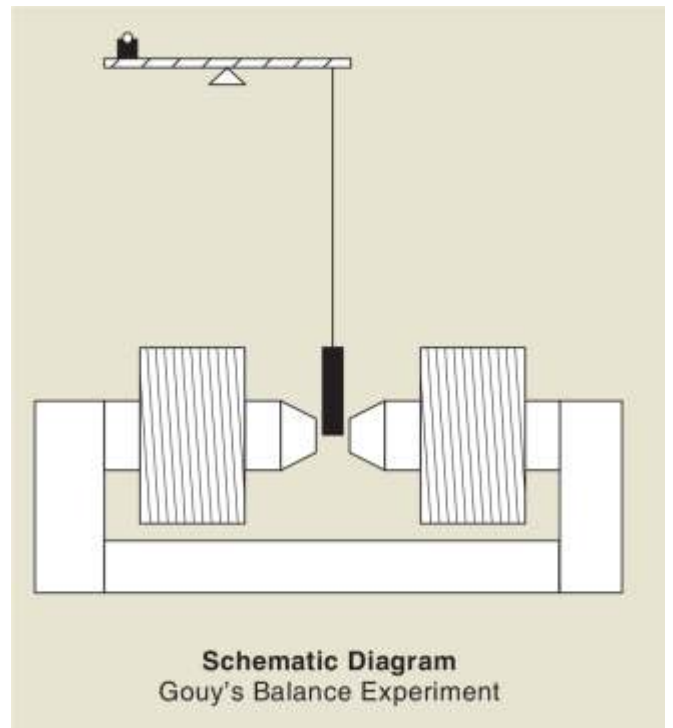
**(b) Sample in the form of a long rod:** Set of samples

**(c) Electromagnet**

- Pole Pieces : 75mm tapered to 25mm
- Mag. Field : 20KG mm airgap
- Energising Coils : Two of approx. 13W each
- Power : 0-90Vdc, 3A, for coils in series  
0-45Vdc, 6A, for coils in parallel

**(d) Constant Current Power Supply**

**(e) Gaussmeter**



Note: Specifications are subject to change.

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