

CURIE TEMPERATURE KIT

FOR FERROELECTRIC MATERIAL

Ferroelectric materials exhibit electric dipole moment even in the absence of an external electric field. Ferro-electric materials are of theoretical and technical interest as they have usually high and unusual temperature dependent values of the dielectric constant, the piezoelectric effects etc. Ferroelectricity usually disappears above a certain temperature called the Curie temperature. Knowledge of the Curie temperature and the variation of the dielectric constant below and above the Curie temperature is of interest to the physicists and the engineers. A simple experimental set-up is designed to measure the Curie temperature of ferroelectric materials. In this experiment dielectric constant is studied as a function of temperature and transition temperature (Curie temperature) is observed as shown in figure 2.. Block diagram of the apparatus is shown in figure 1.

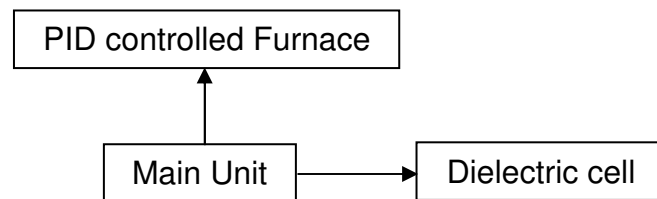
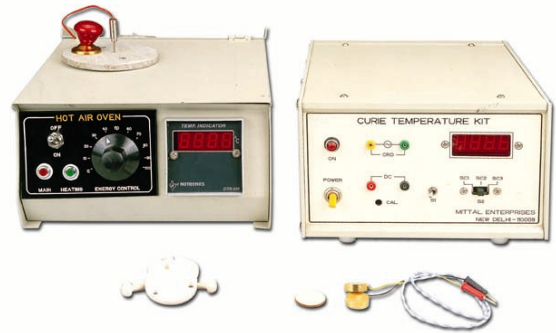
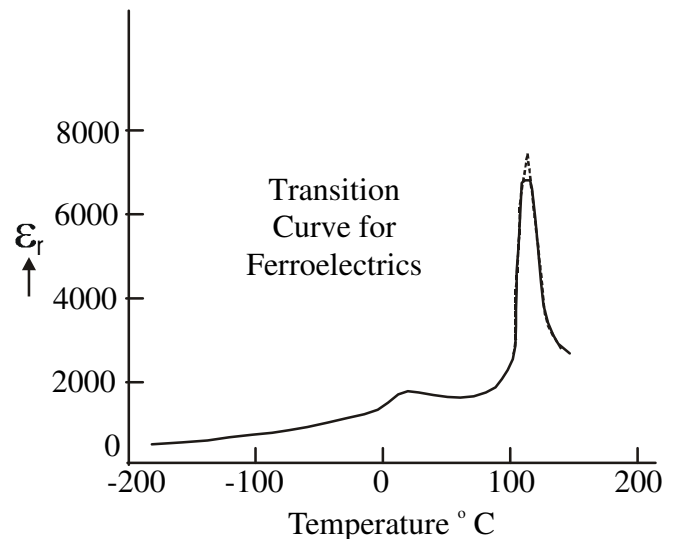


Figure 1

- Main unit consists of
 - a) Digital voltmeter (0-9.99 V ac)
 - b) Audio oscillator (1KHz)
 - c) Standard Capacitors (pf, nf)
- Dielectric cell consists of two 1" dia. gold plated brass discs fitted in between the cell holder.
- Furnace : PID Controlled (RT – 250 °C)
- Thermocouple



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