

# Electromagnetic Energy

It is a form of energy that is reflected or emitted from objects in the form of electrical and magnetic waves that can travel through space

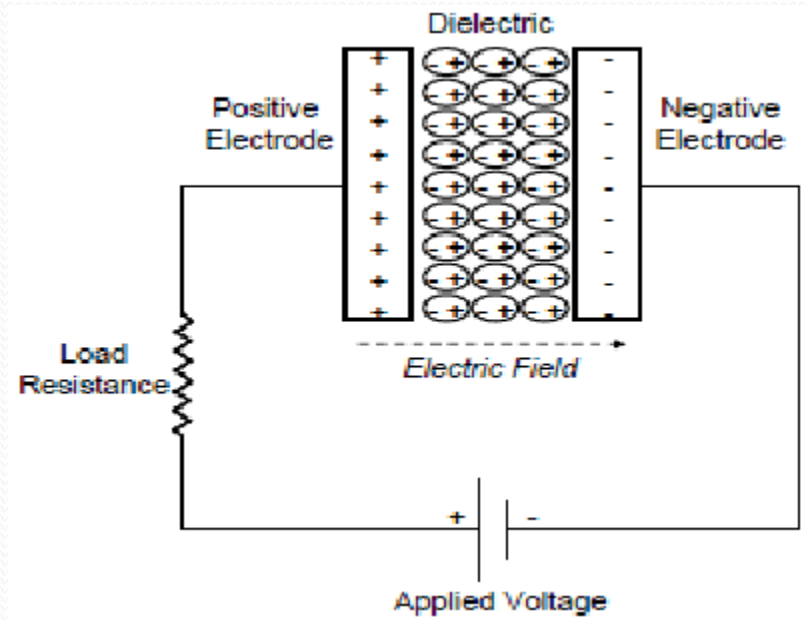
# Electromagnetic Storage Devices

- Capacitor, and
- Superconducting magnetic energy storage ( SMES)

# Capacitor

- A capacitor has two parallel plates or electrodes to which we connect an external battery and in the middle we have a dielectric material as shown in figure.

# Capacitor



- Electrons start entering one plate and exiting other. So, one plate becomes positively charged and other negatively charged. Then correspondingly the side of the dielectric material that faces the negative electrode becomes positively charged, and the side of dielectric material that is facing the positive electrode becomes negatively charged.
- There is overall charge neutrality because of just the same amount of positive and negative charge.
- Charge is given as  $Q=CV$
- Where,  $v=$  Voltage
- $c=$  capacitance

- The energy being stored is in the form of electrical energy there is no chemical change.
- Regions in capacitor are flat. So, this is the way in which the capacitor is functioning and in this process energy is stored.