

# Introduction to Electrostatic Fields

by

**Dr P A Sunny Dayal**

Associate Professor, Dept of ECE

Centurion University of Technology and Management

Andhra Pradesh

# Introduction

- *Electrostatic fields* are also called as static electric fields or steady electric fields. These fields are time invariant.
- They are produced by static charges or charge distributions.
- These fields have wide range of applications.

# APPLICATIONS OF ELECTROSTATIC FIELDS

- The *Electrostatic Fields* are used
  - in Ink-jet printers to obtain the speed of printing and quality of print
  - In LCDs
  - in Touch pads
  - in Capacitance keyboards /Electrical Switchboards
  - in ECGs, EEGs, ERG, EMG, EOG
  - in X-ray machines
  - in Spray Painting
  - in Electrodeposition

## APPLICATIONS OF ELECTROSTATIC FIELDS (Cont'd.)

- The *Electrostatic Fields* are used
  - in Cathode ray oscilloscopes to obtain the electron beam deflection
  - in ore separators to sort out minerals, to sort out seeds in agriculture and for spraying plants and trees
  - in Electrostatic generators
  - to produce Potential
  - to produce Force on charges for their mobility
  - in Electric Power Transmission
  - in Lightning Protection

## APPLICATIONS OF ELECTROSTATIC FIELDS (Cont'd.)

- The *Electrostatic Fields* are used
  - to measure Moisture content
  - to Spin cotton
  - in Field Effect Transistors
  - in Capacitors
  - in Electrochemical machining