High Voltage Engineering Laboratory

1) OPERATION AND APPLICATION OF HORN GAP APPARATUS

This is the most identical equipment for the class demonstration to explain the phenomenon of corona formation due to high `voltage sparking. This is self-contained and compact unit

SPECIFICATION OF THE TRANSFORMER

1. Input Voltage : 230 V
2. Output voltage : 20 kV
3. Output current : 20 mA
4. Operation duty : Continuous
5. Type of cooling : Air cooled

2) DIELECTRIC STRENGTH TEST OF LIQUID

Liquid dielectrics are user for filling transformer, circuit breakers and as impregnates in high voltage cables and capacitors. The breakdown phenomena of liquids include

- Electronic breakdown
- Suspended solid particle mechanism
- Cultivation and Bubble Theory
- Stressed oil volume Theory

THE TEST SET OPERATES FROM SINGLE-PHASE MAINS SUPPLY. THE UNIT COMPRISE OF THE FOLLOWINGS:

1.Auto-variable transformer :0-2A, 230V,50Hz

2.Step up transformer :230/60,000V,AC

3.Control panel

3) DIELECTRIC STRENGTH TEST OF SOLID

50 kV High voltage insulation tester with control panel to test Insulating materials like paper, rubber, mica etc.

4) DIELECTRIC STRENGTH (AC/DC) TEST OF GASES (USING DIFFERENT TYPES OF ELECTRODE)

Insulation plays a very important role in way or other in one way or other in almost all the electrical equipment, machines and households. So, it become necessary to have complete knowledge of the insulating materials which are used in fabricating these items. Sometimes, it becomes necessary to study the effect of A.C. and D.C. and its polarities on the insulation materials. The equipment can be used to measure dielectric strength of:

- Solid insulating materials.
- Insulating materials.
- Transformer oils.
- Filling components.

COMPONENTS

- High voltage transformer (0-100 kV)
- Rectifier (70kV)
- Filter (70kV)
- Resistance divider (70kV)
- Control panel

- **ROD GAP ASSEMBLY. (100KV)**
  DIFFERENT ELECTRODES : PLATE, NEEDLE AND SQUARE

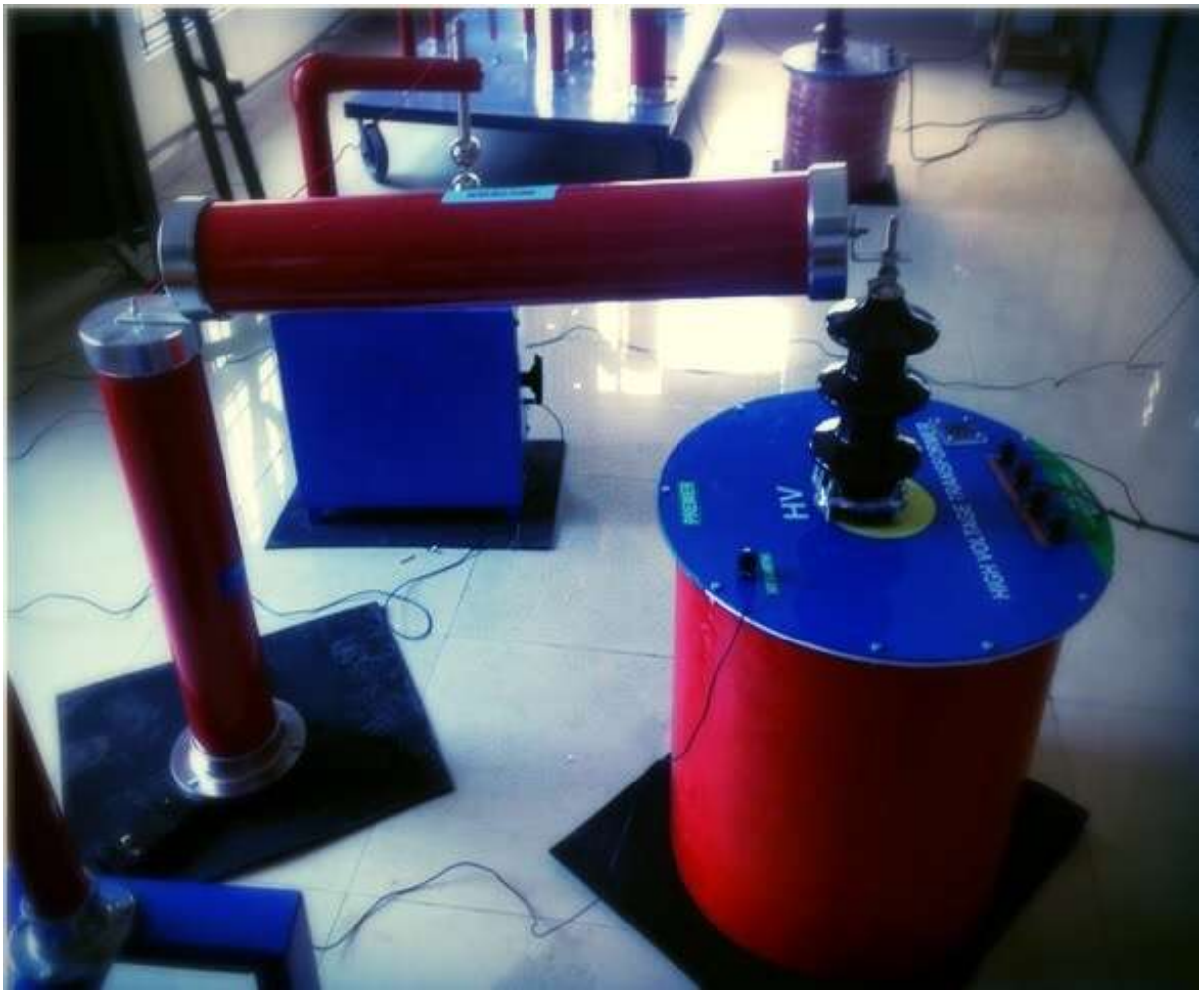
- **SPHERE GAP ASSEMBLY.(100KV)**
  DIAMETER OF SPHERE100MM
  ACCURACY 0.1MM

5) 100 KV TESTING TRANSFORMER WITH CONTROL PANEL.

INPUT : 230 V, 50HZ.

OUTPUT : 100 KV AC / 100KV DC.

RECTIFIER AND FILTER


HV

6) ELECTROLYTIC TANK METHOD OF FIELD PLOTTING

Electrolytic tank is a useful tool to draw equipotential lines. Equipotential line is the path along which the voltage remains the same. This experiment plays very important role for the analysis of electric field or electric stress of a dielectric. Geometrically simple models can be taken and equipotential lines can be drawn.

7) IMPULSE GENERATOR.

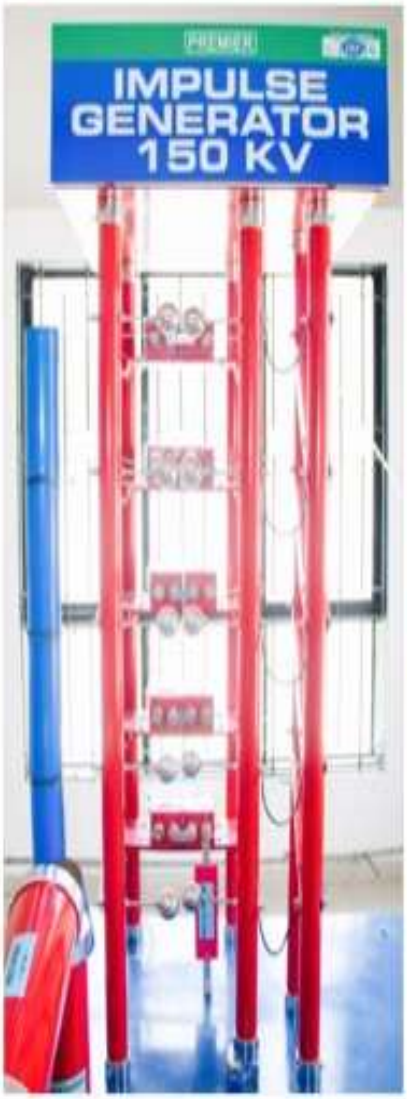
150 KV, 225 JOULE, 5 STAGES COMPUTERIZED OPERATING, WITH WAVE SHAPING RECORDING OSCILLOSCOPE WITH SOFTWARE.


IMPULSE
GENERATOR
150 KV


IMPULSE
GENERATOR
50 KV

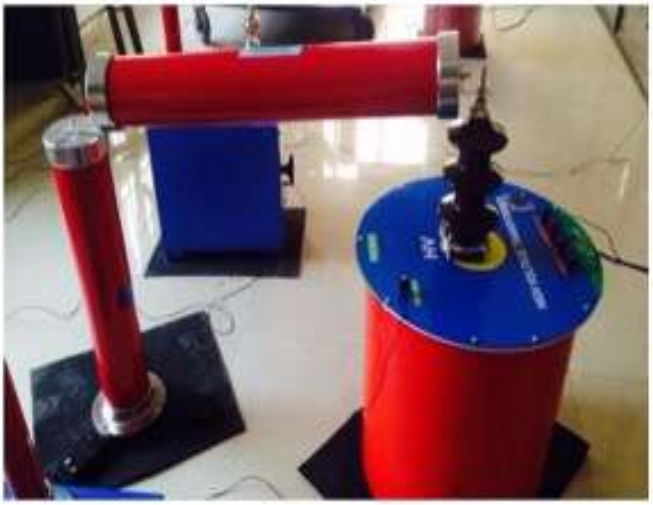
8) TAN DELTA MEASUREMENT TEST KIT


IMPULSE
GENERATOR
150 KV


IMPULSE
GENERATOR
150 KV


IMPULSE
GENERATOR
150 KV


HIGH VOLTAGE TRANSFORMER




& TAN-DELTA CALIBRATOR
HV
C
PREMIER


PREMIER
HV
HIGH VOLTAGE TRANSFORMER


HORN GAP ASSEMBLY
20 KV


DANGER


PREMIER OIL TESTING KIT


DANGER
150 KV


IMPULSE
GENERATOR
150 KV


HORN GAP ASSEMBLY
20 KV