



University of Engineering & Technology

Lahore

**Department of
Electrical Engineering
High Voltage Lab**

Objective:

The Lab came in existence from the time when the Saint MaClaun College was founded back in 1950's. It not only serves as a Lab for Teaching and Research purposes. It is also used for commercial testing for the local industries from which the lab extends a very huge helping hand in form of funds to the University.

The Lab serves as a teaching hand for the following courses:

- Power Transmission
- High Voltage Engineering

Commercial Testing for the following Equipments is available:

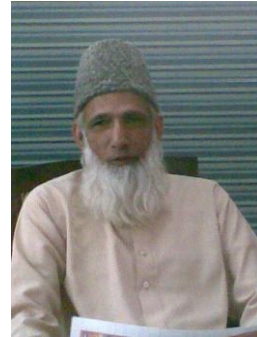
- Distribution Transformers (All Ranges)
- 11KV Panel Testing
- Insulator Testing
- Wire Strength & Measurement Tests



Venue:

Main Block, Ground Floor

Lab Director:



Hafiz Tehzeeb-ul-Hassan
(Associate Professor)

Lab Staff:

- 1.
- 2.
- 3.

Power Transmission Experiments

The following experiments are performed in the lab:

1. Study of High Voltage Lab in University of Engineering and Technology Lahore (Introduction)
2. Determine the flashover voltage of a pin type insulator
3. Determine the flashover voltage of suspension type insulator and to observe the corona effects
4. Compare the flashover voltages wet and dry for a typical outdoor insulator.
5. Investigate the voltage distribution over a suspension insulator string without guard ring.
6. Investigate the voltage distribution over a suspension insulator string with guard ring.

Courses Taught

1. Power Transmission
2. High Voltage Engineering

Lab Equipments

1. Standard Spherical Air Gap



2. Impulse Generator ($\pm 500\text{KV}$)



3. Standard Capacitor



High Voltage Engineering Experiments

The following experiments are performed in the lab:

1. Calibrate a Sphere Gap using its breakdown strength against gap setting
2. Calibrate a Rod Gap using its breakdown strength against gap setting
3. Calibrate a Cone Shaped Gap using its breakdown strength against gap setting
4. Calibrate Flat Surface Gap using its breakdown strength against gap setting
5. Calibrate Cone-Flat Surface Gap using its breakdown strength against gap setting
6. Find out the 50% Critical Impulse Flash-Over Voltages on the 11KV type Insulator with
 - Positive Impulse
 - Negative Impulse
7. Study of relationship between String Efficiency & the no of Insulators (units) used in a String Insulator.
8. Study of relationship between String Efficiency & the no of Insulators (units) used in a String Insulator with Guard Ring

4. HV Testing Transformer (150KV)

5. Cable Testing Transformer

6. Cathode Ray Oscilloscope



7. DC Generator (± 50 KV)

8. Induction Voltage Regulator (IVR)

Testing Facility





THE END

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