



# M.I.E.T. ENGINEERING COLLEGE

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai)  
UG - CSE, EEE & MECH Programs Accredited by NBA, New Delhi.  
(An ISO 9001:2015 Certified Institution)  
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## 3.5 Collaborative Activities

### 3.5.1. Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year

#### Student Collaboration- Industrial Visit

Sl. No	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participant	Year of collaboration	Duration	Nature of the activity	Page No
1.	Industrial Visit	Pentagon Switch Gear Pvt.Ltd, Coimbatore	IV Year EEE-58	2016	One Day	Industrial Visit	2-5
2.	Industrial Visit	TECH7 Automation PVT. LTd., Coimbatore	III Year EEE-38	2016	One Day	Industrial Visit	6-9

  
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**INDUSTRIAL VISIT DETAILS**

Academic Year 2016-2017

S.No	Year	Date	Industry
1	IV	05.08.2016	Pentagon switchgear private limited, Coimbatore
2	III	06.08.2016	TECH7 Automation Pvt Ltd, Coimbatore

  
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DEPARTMENT OF  
ELECTRICAL & ELECTRONICS ENGINEERING  
INDUSTRIAL VISIT REPORT

Class : Final year  
Date : 5-08-2016  
Company Name : Pentagon switch gear pvt ltd.  
Time : 10:30 -1:00 PM  
No. of students : 58  
No. of faculty : 03

1. Mr. Arun kumaran, AP/EEE
2. Mr. Samaya sanjeevi, AP/EEE
3. Mrs. Bharani, AP/EEE

### Company Profile

Pentagon Switchgear Private Limited has been established in the year of 2005 by top notch engineering professionals having nearly 15 to 25 years of experience in Switch gears, who are experts in Design, Manufacturing, Marketing, Quality Control and after Sales Service.

Pentagon Switchgear Private Limited offers quality and reliable products to the Utilities and various Industries. We endeavor for excellence in the Electrical Industry through stringent quality measures, latest technology and effective processes. Our vision is to become leading Switchgear Company, globally known for its capabilities to offer best designs and engineering solutions.

  
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In this company they are producing the switch gear especially for HT protection. The switch gear ratings is from 3.3 kv to 33 kv. The switch gear voltage ratings are 3.3kv, 6.6kv, 11kv, 12.5kv, 12kv, 15kv, 17.5kv, 22kv, 24kv, 33kv

The switch gear used to protect the following five types :

- Transformer primary side
- Under ground
- Capacitor bank
- Motor
- Generator

#### VCB :

- Vacuum circuit breaker is used to protect the transformer primary winding. It consists of two coils, they are closing coil and tripping coil.
- The VCB is operated by both manual and electrical operation. In electrical operation the 230v AC is applied.
- Vacuum circuit breaker consists of a CGL bottle. There is a 6mm gap is available inside the bottle.
- VCB also contains a potential transformer.
- 3 over current/earth fault relay is located above the VCB.
- Microprocessor 8086 is the heart of the switch gear.
- The voltmeter range is 11kv/430v and ammeter range is depends on the demand.
- The digital meters are available for the house purpose and the analog meters are available for the EB.

#### LOAD BREAK SWITCH:

- This load break switch is divided into two types. The first one is standard and other is mimic.
- The standard is used for the genset and the mimic is used for the transformer.

- It consists of a off load isolator and on load isolator.

The outside body for the switch gear is fabricated in this plant itself. It consists of a cutting machine, bending machine etc.,

**Current transformer :**

- The rating of the CT is given by the ratio 20/5-5.
- This is used for both metering and protection.
- The connections are 1S1, 1S2, 2S1, 2S2 and 1S1, 1S2 are used for metering and 2S1, 2S2 are used for the protection.

Primary current : 5A to 3000A

Secondary current: 5A

Accuracy class : 20.05%

**Potential transformer:**

- The PT is located at the HT side i.e step downside (11kv-430v).

Primary current : 11000, 11000/r3

Secondary current: 110, 110/r3

Accuracy class : 0.1%

**Moulding :**

- The epoxy powder is used for the moulding purpose. The powder is mixed in the mixer and it is moulded by using the resin.
- It moulds for both ammeter and voltmeter.



HOD/EEE



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DEPARTMENT OF  
ELECTRICAL & ELECTRONICS ENGINEERING  
INDUSTRIAL VISIT REPORT

Class : THIRD YEAR  
Date : 06-08-2016  
Company Name : TECH7 AUTOMATION PVT LTD.  
Time : 11:00 AM -3:00 PM  
No. of students : 38  
No. of faculty : 03

1. Mr. E.MUTHUKUMARAN, AP/EEE
2. Mr. GOPI, AP/EEE
3. Mrs. RAJA LAKSHMI, AP/ECE

  
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## Company Profile

In this company they are producing the CIRCUIT BREAKER & PANELS especially for low voltage. The voltage rating is 5KV. This company is well known for AUTOMATION

The products manufactured by this company are,

- Air Circuit Breaker Panel (ACB)
- Automatic Power Factor Controller (APFC)
- Automatic Frequency Controller (AFC)
- Starter Panels (star, delta & DOL)
- MCB Distribution Panels

### PRODUCTION UNIT:

- In panel board production unit, we get lot of ideas and how to make panel board according to design specification.

### PANEL BOARD:

- The main panel board is mainly used to control incoming & outgoing power. it contains the ACB(air blast circuit breaker). The ABC is used to control the main power circuit, that is during faulty period the ABC get trip signal from protection relay circuit and get isolate the faulty line from healthy bus.

### POWER FACTOR CONTROLLER:

- The automatic power factor control panel is also manufacture, it consist of capacitor banks. The main purpose of capacitor bank is to improve the power factor

Due to inductive load the power factor can be reduced, so it is to be maintained atleast near to unity. So the capacitor bank is connected as per required power factor if power factor goes lesser then 0.8, then the automatically connects the capacitor bank .

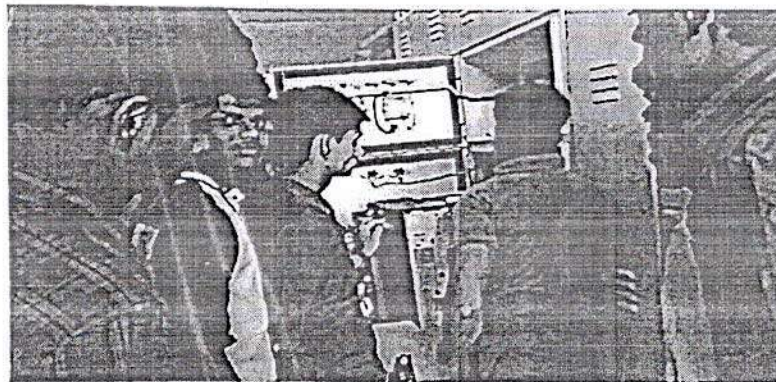
  
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#### VARIOUS BUS BARS:

- The copper and aluminium bars are used as connecting bus bars. The size of the bus bar is based on the current level. The in each line can be measured in ammeter which is conneted in secondary of current coil. The current coil is used to reduce the current in the ratio of (100:5).

#### CONTROL PANEL:

- The motor control panels also manufactured, which contains VFD (variable frequency drive). To control the induction motor at variable frequency control mode.




*J. J.*  
HOD/EEE

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**Industrial Visit Feedback form from Industry**

Course & Department	ELECTRICALS AND ELECTRONICS ENGR
Sem / Year	V SEM / III YEAR
Date(s) of Visit and Time	06/08/16 - 11:00 A.M
No. of Students visited	38
Accompanying Staff Members	3
Name & Address of the Company	Tech 7 Automation Systems (I) Pvt. Ltd. Srinivasam Buildings 6/93-3, Sakkarai Kosa Thottam, Urumanadam Palayam. G.N. Mills (Post) Coimbatore - 641 029
Feedback about the students	Students were very imitative to learn about the elec. equipments and keen in asking about the functions & specifications.
Technical details about the Company	Manufacturers of Low Voltage Switchgear & Controlgear panel assemblies.
Authorized Signatory with Name / Designation and Seal	S.V. Kothanda S.V. KOTHANDAN GENERAL MANAGER 
Any other comments	

  
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