



Late Shri Vishnu Waman Thakur Charitable Trust's
VIVA Institute of Technology
At: Shirgaon, Virar (East), Tal: Vasai, Dist: Thane-401305, Maharashtra.



REPORT

INDUSTRIAL VISIT

COPPER TRACK INDUSTRIES,

Nashik

20th February, 2016



Organized by:

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Details And Purpose of Visit

Under the guidance of our HOD, Mrs .Archana Ingle, Viva Institute Of Technology, an Industrial visit was organised on 10th Feb,2017 to Copper track Industries, Ambad, Nashik. It was conducted for one day visit.

The group of 51 Students were made for the visit. A group of three professors, i.e. Nikita Thalia, Shoaib Shaikh & Ankit Bhoir accomplished the students to industry. Along with the students of SE EXTC took the hard efforts and initiative which made the visit a grand success.

The first session was a workshop based on Printed Circuit Board (PCB) making by Mr. Bag. It was a very good informative lecture by him.

❖ Purpose of Visit :

The purpose of the visit was to enhance the knowledge of students towards PCB manufacturing and their marketing.

It also helped the students to know the industries, work on large scale and automation level.

INFORMATION ABOUT THE INDUSTRY

Copper Track Industries is established in the year 1992.The Company started with manufacturing and designing of Printed Circuit Boards.[Single side,double sided,PTH].today, it has positioned itself as a leading PCB manufacturer in Nashik and north Maharashtra.

The Company has its own vision as :-

“To provide all the facilities to customers like PCB designing,PCB manufacturing,PCB assembly services and Transformer manufacturing under one roof.”

It is located in MIDC area in Ambad,Nashik with factory building around 6000 sq. feet.It is also has manpower of 50 persons.

‘SINIC Electronics pvt.ltd;Crompton Greaves ltd.; etc are some of its prestigious customers

Mr.Gaikwad S. Madhukar & Rakibe U. Madhukar are the company’s directors who are well qualified in the respective field.



PCB (Printed Circuit Board)

WHAT WE LEARNT FROM THE VISIT

The training centre in-Charge Mr. Bag delivered very good and Informative lecture on PCB manufacturing.

The lecture was as follows :-

- ❖ Why PCB is required for/in any electronic products ?

The answer is as follows :

- Small in size /portable.
- Easy for transportation
- Reliability-Handling
- Quality improvement
- Reduce manpower
- Backbone of electronic products.

So as the PCB is required in many ways, it is very important to manufacture it with proper designing.

The requirements of PCB designing are as follows :-

- Proper arrangements of electronic components.
- Occupy the minimum space
- Minimum jumpers.
- Proper track width to be provided
- Proper i/p and desired o/p positions.

Printed Circuit board are of two types

- 1) Rigid PCB :
(can not be bend easily)
- 2)flexible PCB
(Bends Easily)

1. Single sided

USES: laptop, calculators,

❖ Manufacturing processes of PCB

- Artwork design

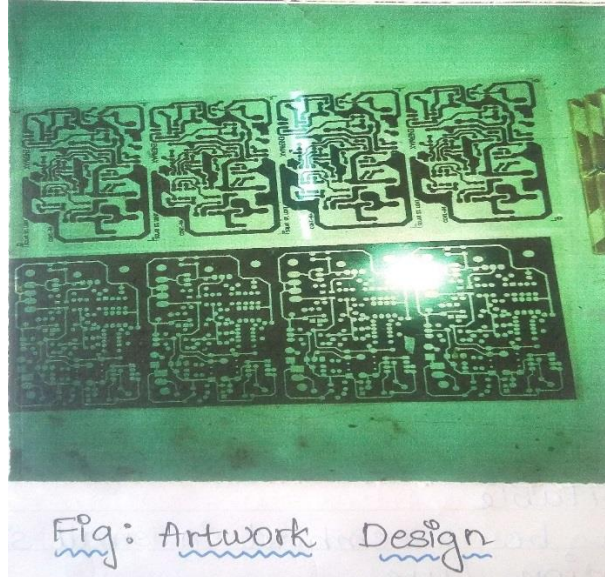


Fig: Artwork Design

- Film-Making



Fig: film making

1. ARTWORK

Types of Artwork are as follows

- Track Solder Side
It is used to Tracking Printing operation
- Masking solder side
It is used for green masking Operation
- Ledger/ Board marking component side
it is used for component layout printing operation .
- Drilling Details
To select drilling size

2. Film Making And Material selection

The material used for manufacturing of PCB is called as FR.ie. Fire Resistant it has certain grades normally,

FR1,FR2,FR3 and FR4.

This material has property to resist the fire.also other material used such paper phenolic etc.

This materials are available in 0.8 mm,1.0mm,1.2mm,1.5mm,2.4mm,3.2mm thickness in single and double sided copper clad.

3. Cutting

Raw material is cut in specified size from sheet of (say 4' 3') each.

4. Track Printing

It is done by two different processes eg. Screen printing and photo printing . desired track layout is printed on copper clad

5. Quality Control

After above processes board is suppose to check for short circuit. And for proper track width.



Fig:Drilling machine



Fig: Cutting



Fig:Etching

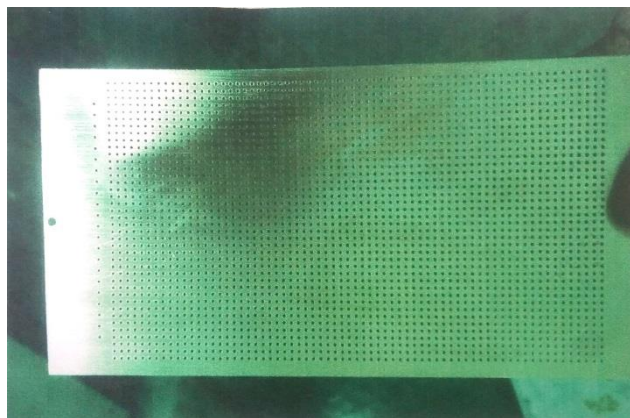


Fig:Drilled PCB



Fig : Green Masking

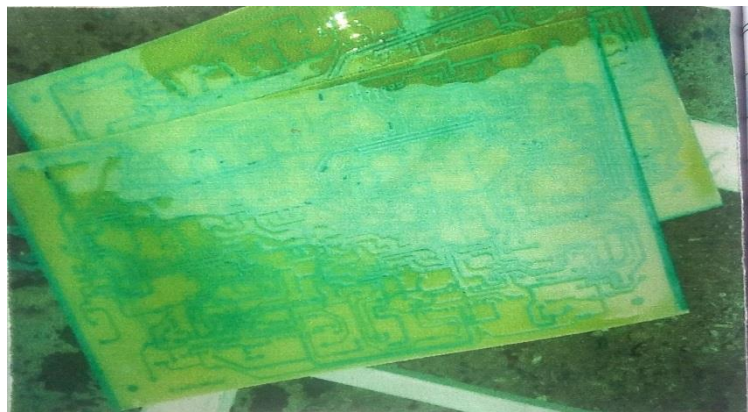


Fig: Ident Printing



Fig: Soldering

6. Etching

To etch means to extract the unwanted copper from the board. For smaller volume it is done with ($H_2SO_4 + H_2O + FeCl_3$) etching solution. For bigger volume, it is done with ammonia etchant.

7. Drilling

PCB is drilled with manual drilling machine.

8. Green Masking.

It is done with photo exposing or screen printing method. Ink used for this process is hardener based and it to be backed with electrical oven at particular temperature.

9. Ident Printing

This is required for assemblers ease out.

10. Solder Plating

Finally PCB's are plated with Silver/solder & if required with Gold also

11. Edge finishing

At last, PCB's are cut into final size and packed.

12. Packing

Hence, ready for use PCB's are packed accordingly. Hence, the manufacturing process is completed.

Practical session where in whatever that was thought in workshop was executed practically for more understanding, after the practical knowledge gained by us there was a certificate distribution and Photo-session.

Hence we all left the copper track industries by 4:45 pm and headed back to virar station and reached there by 10:00 pm.



Fig. Drilling



Fig:Scrubbing

STUDENTS REVIEWS

Educational visit to Copper track industries organised by EXTC department was very informative. The guiding staff, both college staff as well as site staff was very supportive to all students. We hope that this visit will help us in our future practical and bring a positive change in our thinking and practical behaviour regarding Education and specially engineering.



Hence, concluding the industrial visit was a great success and we are thankful to our principal 'Dr. Arun Kumar' and Head of Department 'Mrs. Archana Ingle', all the Teaching and Non-Teaching Staffs of electronic and telecommunication department and Students Co-ordinators of the visit.