



**Vel Tech**  
Rangarajan Dr. Sagunthala  
R&D Institute of Science and Technology  
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF ELECTRICAL & COMMUNICATION**

**IN-PLANT TRAINING  
SUMMER SEMESTER(2023-2024)**

**SUPERVISED BY**

**DR.D.FRRLIN DEVA SHAHILA**

**PRESENTED BY**

**A.YASHWANTH**

**vtu21166**

**K.NARAYANA RAO**

**vtu21322**

**S.DURGA SRINIVAS PRASAD**

**vtu21225**

# OUTLINE



- Implant Training at PRECISION ELECTRONIC COMPONENTS MFG. CO HYDERABAD, India started from 12th JUNE 2023 - 17nd June 2023.
- Main objective was to learn about the process of making different types of resistors , potentiometer and rotary switch.

# Overview of the Organisation



- Precision electronics company was started in the year 1972, since then in manufacturing process of Wire Wound Resistors.
- Our other associate unit, Electronic Enamels & Glasses Pvt Ltd. (EEG) started production from 1975.
- Here they are preparing lots of Silicon Resistors, Ceramic Coated Resistor .
- Precision electronics have work of force of 400, working altogether in PEC, EEG and its associated companies.

# CONTENTS

- Introduction to precision electronic components MFG.CO.
- Services & major function
- Customer
- Product developed
- Types of planting processes
  - Winding
  - Spot welding
  - Enamel coating
  - PPA coating
  - Injunction moulding



# CERTIFICATIONS



## Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

Precision Electronic Components Mfg. Co.  
B 51, Electronic Complex  
Kushaiguda  
Hyderabad 500 062  
Telangana  
India

Holds Certificate No:

**EMS 755620**

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The Design, Manufacture & Supply of, Standard & Custom-built Resistive Components, for applications in Electrical and Electronic equipment, Telecom, Control and Instrumentation Sectors, Military and Avionics equipment, Automotive and Traction, and Power Electronics for White & Brown Goods.

For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2021-11-07

Latest Revision Date: 2021-11-07

Effective Date: 2021-11-07

Expiry Date: 2024-11-06

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QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

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Hyderabad 500 062  
Telangana  
India

Holds Certificate No:

**FM 609082**

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The Design, Manufacture & Supply of, Standard & Custom-built Resistive Components, for applications in Electrical and Electronic equipment, Telecom, Control and Instrumentation Sectors, Military and Avionics equipment, Automotive and Traction, and Power Electronics for White & Brown Goods.

For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 2013-12-16

Latest Revision Date: 2020-01-06

Effective Date: 2020-01-21

Expiry Date: 2023-01-20

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# SERVICES AND MAJOR FUNCTIONS



- Winding
- Spot winding
- Enamel coating
- PPA coating
- Injection moulding

# TYPES OF PLANTING PROCESS

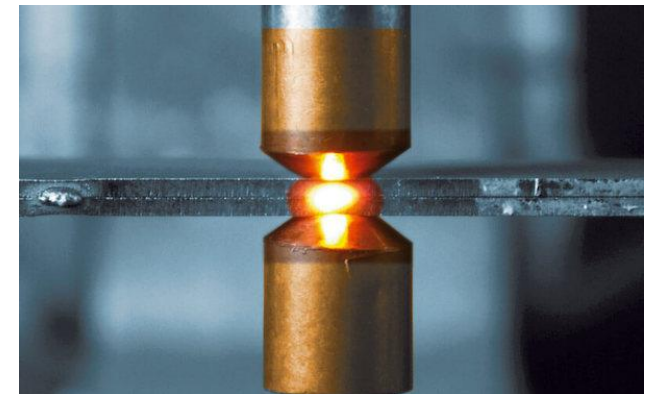
## 1. WINDING :

Enameled copper wire is used for the winding. Copper wire is wound on the ceramic rod by a semi automatic winding machine . A wire wound resistor is a resistor where a wire with a high resistivity is wrapped around an insulating core to provide the resistance.



## 2.SPOT WELDING

- Spot welding is a type of electric resistance welding used to weld various sheet metal products , through a process in which contacting metal surface points are joined by the heat obtained from resistance to electric current.
- Spot welding works by applying pressure and heat to the weld area using copper alloy electrodes. These electrodes transport an electrical current through the weld segments. As the material melts the parts are fused.





# 3.ENAMEL COATING

- The vitreous enamelling process provides the resistor alloy with optimum protection against mechanical and climatic influences. Vitreous enamel provides exceptionally good protection to the wire element and is essentially impervious to moisture. The resistors can safely be used in harsh environmental conditions .



## 4.PPA COATING

- PPA coating, in the context of resistors, refers to the application of a protective layer called Polyphthalamide (PPA) onto the resistor's surface. PPA is a thermoplastic material known for its excellent thermal and electrical insulation properties. The PPA coating helps to protect the resistor from environmental factors such as moisture, dust, chemicals, and temperature fluctuations.



# 5. INJECTION MOULDING:

- Injection molding is a manufacturing process that involves injecting molten material into a mold cavity to create a desired shape or component. While injection molding is commonly used for producing plastic parts, it is not typically employed directly on resistors. Resistors are typically manufactured using different methods such as film deposition, wire winding, or thick-film technology.



# PRODUCTS DEVELOPED







# CONCLUSION

- In conclusion , the precision electronics company manufactures different types of resistors. During the training , I had the opportunity to work with experienced professionals who shared their experience and guided me through various tasks and projects. This collaborative environment my growth and allowed me to enhance my technical abilities, problem solving skills and from work capabilities. I am confident that the lesson learned during this training will sever as a solid foundation for my future and I look forward to apply the knowledge gained to contribute meaningfully to the industry.





***THANK YOU***