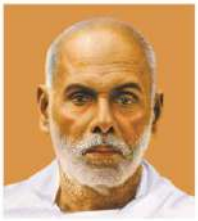
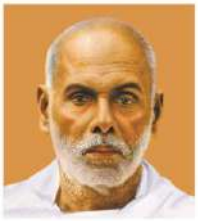
Sree Narayana Guru College
of Engineering & Technology
CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



LED MANUFACTURING UNIT

Sree Narayana Guru College
of Engineering & Technology
CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



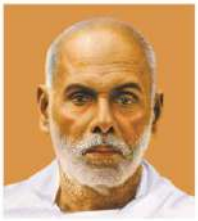
LED MANUFACTURING UNIT

ACTIVITIES

Est. 2003

Sree Narayana Guru College of Engineering & Technology

CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



2023-2024

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

EVENT PROPOSAL FORM

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	WORKSHOP
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	No,Electrical And Electronics Engineering
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	27-11-2023 – 01.12.2023 09:00am – 4:00pm
6	**Venue**	LED Manufacturing Unit
7	**Whether any professional body is associated with the event?** **If yes, name the body**	No
8	**Participants / Target Audience**	All EEE students
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No, SKILL DEVELOPMENT
10	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs.

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PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
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		2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
11	**Expected Outcomes**	The students should be able to make LED bulbs
12	**Connected PO / PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
13	**Justification for PO / PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
14	**Name of the resource person(s)**	Mr. Manu C(AP EEE) ,)
15	**Designation of the resource person (may attach separate sheet to indicate the profile)**	Asst. Professor , SNGCET,
16	**Resource requirements**	**1. Tools Required** • Tikki punching machines • Crimbing tool • Screw driver • Cutter • Multimeter

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		• Plier • Tester • Soldering Iron Soldering Lead • Flex • Soldering stand **2. Raw Materials** • 9W LED HPF driver • Diffuser • Aluminium case • B22 cap • Alumini plate • LED chip **3. Presentation materials** • MS Power point Presentation **4. Documentation:** • Cameras and recording equipment for documenting the program. • Photographers and videographers if necessary. **5. Transportation and Accommodation:** • If required, arrangements for the resource person's transportation and accommodation. **6. Registration and Feedback System:** • Registration desk and materials for participants. • Feedback forms and data collection tools for evaluation. **7. Budget Allocation:** • Allocation of funds for resource person's honorarium, travel expenses, and any other related costs. **8. Cleaning and Maintenance:** • Cleaning services for the venue before and after the event. • Maintenance services for technical equipment. **9. COVID-19 Precautions:** • Adherence to local health guidelines, including mask-wearing, social distancing, and sanitization.
17	**Any fund from external source will be received? If yes, mention it.**	No
18	**Whether budget for the event is attached? (use separate sheet to indicate**	YES

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PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
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KANNUR

	the estimated budget)	
19	**Any other relevant information**	Nil
20	**Name of the event coordinator(s)**	Mr. Manu C
21	**Dated signature of the coordinator(s)**	22/11/23

II. TO BE FILLED BY THE DEPARTMENT HOD (any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	
2	**Recommendation [Put a tick □ on whichever is applicable]**	**Recommended** **Not Recommended**
3	**Name**	Abhilash Krishnan T.K
4	**Dated Signature**	22-11-23

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVED

DATED SIGNATURE OF THE PRINCIPAL:

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

Payyanur, Kannur, Kerala, Pin-670307
Promoted by Sree Bhakthi Samvardhini Yogam, Kannur
Affiliated to APJ Abdul Kalam Technological University & Approved by AICTE, New Delhi

www.sngcet.ac.in Email-info@sngcet.ac. in

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Presents

Five days Training Program

on

LED BULB MANUFACTURING & SOLDERING PRACTICE TRAINING PROGRAM

Participants: Students of EEE

: 27-11-2023 to 01-12-2023

: 09.00 am to 4.00 pm

: LED Bulb Manufacturing unit

Staff Coordinator

Mr. Manu C
Assistant Professor

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Student Coordinator

Mr. Hrishikesh P V
S5 - EEE

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LED BULB MANUFACTURING & SOLDERING PRACTICE TRAINING PROGRAM

Registration Form

Date: 27/11/2023 to 01/12/2023

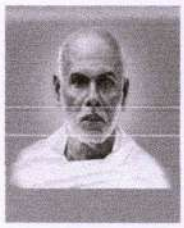
Venue: Led Bulb Manufacturing Unit

Sl.No	Name of Students	Semester	Branch
1	ABHINAV C	S7	EEE
2	ASWATHI PP	S7	EEE
3	AMAL KP	S5	EEE
4	HRISHIKESH	S5	EEE
5	SHINOY BIJU	S5	EEE
6	ADITHYA K	S3	EEE
7	DIYA KC	S3	EEE
8	VISMAYA PP	S3	EEE
9	GAZAL V	S3	EEE
10	PRANAV N P	S3	EEE
11	SOUVIND PADENI	S3	EEE
12	AKSHAY	S3	EEE
13	ABHAY RAM A V	S1	EEE
14	ABHISHEK P ASHOKAN	S1	EEE
15	ABHISHEK PK	S1	EEE
16	JYOTHIRMAYI TP	S1	EEE
17	MIDHULA MANOHARAN	S1	EEE
18	P Y SIDHY	S1	EEE

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

(PROMOTED BY SREE BHAKTHI SAMVARDHINI YOGAM, KANNUR)
CHALAKKODE P.O., PAYYANUR, KANNUR–670307, KERALA



DESIGN ANF FABRICATION OF LED BULBS

Agenda

Prayer

Welcome Address

Mr.Manu C , Assistant Professor, EEE Department

Principal's Address

Dr. Leena A. V

Felicitation

Dr. Susan Abraham, Dean UG and PG Studies

Mr.Abhilash Krishnan T K , Associate Professor, HoD EEE

Vote of Thanks

Mr.Hrishikesh P V, S5- EEE

HODEEE

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Date: 27-11-2023 **Time: 9.00 am** **Venue: LED Bulb, Manufacturing Unit**

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

(Promoted by Sree Bhakthi Samvardhini Yogam, Kannur)
(Affliated to APJ Abdul Kalam Technological University and Approved by AICTE, New Delhi)
Chalakkode P.O, Payyanur, Kannur-670307, Kerala

CERTIFICATE OF COMPLETION

This is to crtify that

ASWATHI P P

has suscessfully completed Five days training program on LED Bulb manufacturing and soldering practice organised by Department of Electrical and Electronics Engineering from 27-11-2023 to 01-12-2023

PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR KANNUR

Coordinator
Mr. Manu C
Assistant Professor

HoD
Mr. Abhilash Krishnan T K
Associate Professor

Pricipal
Dr.Leen A V

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

POST EVENT ANALYSIS FORM

I. TO BE FILLED BY THE EVENTCOORDINATOR(S)

1	**Event type conducted**	WORKSHOP
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Date and time of the event conducted**	27.11.2023 – 01.12.2023 09:00am – 04:00pm
4	**Venue**	LED MANUFACTURING ROOM
5	**Whether the event was interdepartmental? If yes,mention the department(s) Associated with**	NO. Electrical and Electronics Engineering
6	**Mode of conduct [online \offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, Mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	No
9	**Any funds received from the professional body? Indicate the amount**	No YES
10	**Participants/Target Audience**	All EEE students

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11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No, Skill development
12	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
13	**Expected Outcomes**	Hands on experience in making LED bulbs
15	**Connected PO /PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
16	**Justification forPO/PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
17	**Whether feedback forms from audience and resource personis collected?**	Yes
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	
20	**Name of the resource person**	Mr. Manu C(AP EEE)
21	**Designation of the resource person(s)**	Asst. Professor , SNGCET
22	**Any other relevant information**	Nil
23	**Name of the event coordinator(s)**	Mr. Manu C(AP EEE), Hrishikesh P V (S5 EEE)
24	**Dated signature of the coordinator(s)**	27/11/23

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II. **TOBEFILLEDBYTHEDEPARTMENTHOD(anyone of the HoD,in case if the event is jointly conducted by various department(s))**

List of enclosures–To be maintained in the file

Sl No:	ITEM	AVAILABILITY[YES /NO]
1	Posters	Yes
2	Schedule of the Event	Yes
3	Registration form sample copy	No
4	All registration forms duly filled and signed	No
5	Profile of the resource eperson(s)	NO
6	Feedback forms filled by participants and resource person	YES
7	Feedback analysis sheet	YES
8	CO attainment calculation sheet	No
9	Study Materials(if any)	No
10	Letters or printoutsofe-mail communication Relevant to the event	Yes
11	Documents relatedtoprofessionalbodyassociatedwiththeevent	Yes

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SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
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12	**Photographs of the event**	Yes

1	**Comments about the conduct of the event**	
2	**Comments about the resource person and impact of the event**	
3	**Name**	Abhilash Krishnan T.K
4	**Dated Signature**	29-11-23

COMMENTS FROM PRINCIPAL

DATEDSIGNATURE OFTHEPRINCIPAL:

29/11/23

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REPORT ON LED BULB MANUFACTURING & SOLDERING PRACTICE TRAINING PROGRAM

The Department of Electrical and Electronics Engineering conducted Five days LED manufacturing training session and soldering practice for students of Electrical and Electronics Engineering from 27/11/2023 to 01/12/2024. A Total of 18 students participated in the training session. The students gained hands on experience in manufacturing LED bulb.

The event was inaugurated by Dr. Leena A V, Principal, SNGCET. Welcome addresse was delivered by Mr. Abhilash Krishnan (HoD, EEE). Dr. Susan Ebraham (Dean Academics) and Mr. Manu C (AP, EEE) delivered felicitation speech and Mr. Hrishikesh PV, student coordinator delivered vote of thanks. The inaugural session concluded at 10:00 a.m., after which the training session started.

The objective of the 5-days LED manufacturing and soldering practice training program was to provide participants with a comprehensive understanding of LED technology, manufacturing processes, soldering techniques, quality control measures, and troubleshooting methods. Through a combination of theoretical sessions and hands-on practical exercises, the program aimed to equip participants with the necessary skills to excel in LED manufacturing environments.

Participants developed a solid understanding of LED technology, manufacturing processes, and soldering techniques. Hands-on practice enabled participants to gain confidence in handling soldering equipment and performing assembly tasks. Quality control and testing training equipped participants with the ability to identify defects and ensure product quality. Advanced techniques and troubleshooting sessions prepared participants to tackle complex manufacturing issues effectively.

The 5-days LED manufacturing and soldering practice training program successfully provided participants with a well-rounded skill set essential for thriving in LED manufacturing environments. By combining theoretical knowledge with practical experience, participants are now equipped to contribute effectively to the production of high-quality LED products. Continued practice and refinement of these skills will further enhance participants' capabilities in this field.

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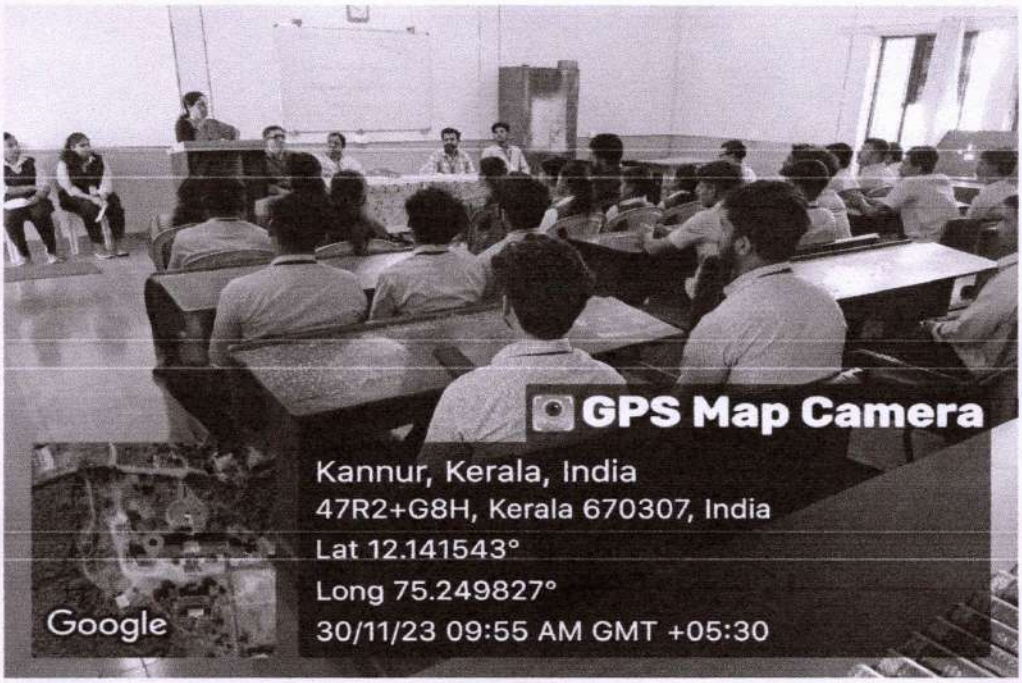

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Est. 2003

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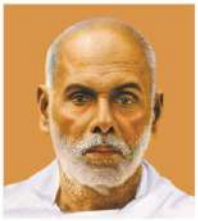

2022-2023

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

EVENT PROPOSAL FORM

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	WORKSHOP
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	No,Electrical And Electronics Engineering
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	22-03-2023 09:30am – 03:45pm
6	**Venue**	LED Manufacturing Room
7	**Whether any professional body is associated with the event?** **If yes, name the body**	No
8	**Participants / Target Audience**	All EEE students
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	Yes EST 130
10	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs.

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PRINCIPAL
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		2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
11	**Expected Outcomes**	The students should be able to make LED bulbs
12	**Connected PO / PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
13	**Justification for PO / PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
14	**Name of the resource person(s)**	Mr. Manu C(AP EEE)
15	**Designation of the resource person (may attach separate sheet to indicate the profile)**	Asst. Professor , SNGCET
16	**Resource requirements**	**1. Tools Required** • Tikki punching machines • Crimbing tool • Screw driver • Cutter • Multimeter

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		• Plier • Tester • Soldering Iron Soldering Lead • Flex • Soldering stand **2. Raw Materials** • 9W LED HPF driver • Diffuser • Aluminium case • B22 cap • Alumini plate • LED chip **3. Presentation materials** • MS Power point Presentation **4. Documentation:** • Cameras and recording equipment for documenting the program. • Photographers and videographers if necessary. **5. Transportation and Accommodation:** • If required, arrangements for the resource person's transportation and accommodation. **6. Registration and Feedback System:** • Registration desk and materials for participants. • Feedback forms and data collection tools for evaluation. **7. Budget Allocation:** • Allocation of funds for resource person's honorarium, travel expenses, and any other related costs. **8. Cleaning and Maintenance:** • Cleaning services for the venue before and after the event. • Maintenance services for technical equipment. **9. COVID-19 Precautions:** • Adherence to local health guidelines, including mask-wearing, social distancing, and sanitization.
17	**Any fund from external source will be received? If yes, mention it.**	No
18	**Whether budget for the event is attached? (use separate sheet to indicate**	No

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SREE NARAYANA GURU COLLEGE OF
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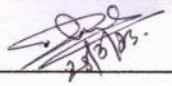
KANNUR

	the estimated budget)	
19	**Any other relevant information**	Nil
20	**Name of the event coordinator(s)**	Mr. Manu C
21	**Dated signature of the coordinator(s)**	

II. TO BE FILLED BY THE DEPARTMENT HOD (any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	
2	**Recommendation [Put a tick □ on whichever is applicable]**	**Recommended** **Not Recommended**
3	**Name**	Abhilash Krishnan T.K
4	**Dated Signature**	20-3-23.

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVED

DATED SIGNATURE OF THE PRINCIPAL:

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

Payyanur, Kannur, Kerala, Pin-670307
Promoted by Sree Bhakthi Samvardhini Yogam, Kannur
Affiliated to APJ Abdul Kalam Technological University & Approved by AICTE, New Delhi
Office-04985-201989, 7812911912 Email-info@sngcet.org

Dr. LEENA A. V.
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KANNUR

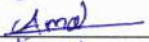
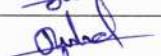
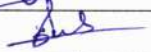
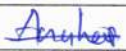
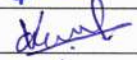
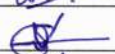
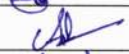
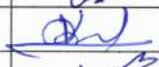
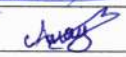
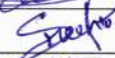
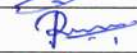
LED BULB MANUFACTURING TRAINING

For all EEE Students

on March 22, 2023

Venue : LED Bulb Manufacturing unit
Time : 09.30 AM

List of Students enrolled and attended

Sl. No.	Name of students	Signature
1	ABHINAV C	
2	ASWATHI K	
3	HRIDUL RAGH	
4	ADHIN O	
5	AMAL KP	
6	ANURAJ N	
7	HRISHIKESH PV	
8	NIHAD T	
9	SHINOY BIJU	
10	ANUSH JYOTHI	
11	DEVI KEERTHANA TP	
12	VAISHNAV TV	
13	VISHAL K	
14	ADITHYA K	
15	AKSHAY K V	
16	AMAYA AJITH T	
17	ANUVIND N.K	
18	DIYA K C	
19	GAZAL V	
20	MEGHITH SUKUMARAN	
21	MUHAMMED SHAFNAS K	
22	PRANAV M P	
23	SANGEETH CV	-Ab-
24	SHREYAS MANOHARAN	
25	SOUVIND PADENI	

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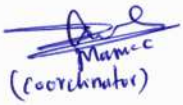
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

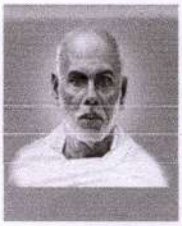

(Coordinator)


HOD

PRINCIPAL

SREE NARAYANA GURU
COLLEGE OF ENGINEERING & TECHNOLOGY

(PROMOTED BY SREE BHAKTHI SAMVARDHINI YOGAM, KANNUR)
CHALAKKODE P.O., PAYYANUR, KANNUR-670307, KERALA



DESIGN AND FABRICATION OF LED BULBS

Agenda

Prayer

Welcome Address

Mr.Abhilash Krishnan T K , Associate Professor, HoD EEE

Principal's Address

Dr. Leena A. V

Felicitation

Mr, Manu C , Assistant Professor, EEE Department

Vote of Thanks

Mr.Hrishikesh P V,

HODEEE

Date: 22-03-202 3 **Time: 9.30 am** **Venue: LED Bulb, Manufacturing Unit**

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SREE NARAYANA GURU COLLEGE of ENGINEERING & TECHNOLOGY

Promoted by : Sree Bhakthi Samvardhini Yogam, Kannur

Affiliated to APJ Abdul Kalam Technological University (KTU) & Recognised by AICTE, New Delhi

ESTD 2003

CERTIFICATE OF PARTICIPATION

This certificate is presented to

DEVI KEERTHANA T P **of** **SNGCET- PAYYANUR**

for participating in the training on

" LED BULB MANUFACTURING"

dated 22th March 2023

Organized by

Department of Electrical & Electronics Engineering

COORDINATOR

HOD
(EEE)

PRINCIPAL

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

POST EVENT ANALYSIS FORM

I. TO BE FILLED BY THE EVENTCOORDINATOR(S)

1	**Event type conducted**	WORKSHOP
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Date and time of the event conducted**	22.03.2023 09:30am – 03:45pm
4	**Venue**	LED MANUFACTURING ROOM
5	**Whether the event was interdepartmental? If yes,mention the department(s) Associated with**	NO. Electrical and Electronics Engineering
6	**Mode of conduct [online \offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, Mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	No
9	**Any funds received from the professional body? Indicate the amount**	No
10	**Participants/Target Audience**	All EEE students

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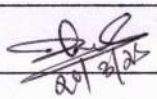
KANNUR

11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No, Skill development
12	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
13	**Expected Outcomes**	Hands on experience in making LED bulbs
15	**Connected PO /PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
16	**Justification forPO/PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
17	**Whether feedback forms from audience and resource personis collected?**	Yes
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	
20	**Name of the resource person**	Mr. Manu C(AP EEE)
21	**Designation of the resource person(s)**	Asst. Professor , SNGCET
22	**Any other relevant information**	Nil
23	**Name of the event coordinator(s)**	Mr. Manu C(AP EEE)
24	**Dated signature of the coordinator(s)**	

HODEEE

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II. **TOBEFILLEDBYTHEDEPARTMENTHOD(anyone of the HoD,in case if the event is jointly conducted by various department(s))**

List of enclosures–To be maintained in the file

Sl No:	ITEM	AVAILABILITY[YES /NO]
1	Posters	Yes
2	Schedule of the Event	Yes
3	Registration form sample copy	No
4	All registration forms duly filled and signed	No
5	Profile of the resource eperson(s)	Yes
6	Feedback forms filled by participants and resource person	No
7	Feedback analysis sheet	No
8	CO attainment calculation sheet	No
9	Study Materials(if any)	No
10	Letters or printoutsofe-mail communication Relevant to the event	Yes
11	Documents relatedtoprofessionalbodyassociatedwiththeevent	Yes

HODEEE

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12	**Photographs of the event**	Yes

1	**Comments about the conduct of the event**	
2	**Comments about the resource person and impact of the event**	
3	**Name**	Abhilash Krishnan. T.K
4	**Dated Signature**	25/3/23

COMMENTS FROM PRINCIPAL

DATEDSIGNATURE OFTHEPRINCIPAL:

25/3/23

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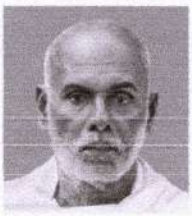
Sree Narayana Guru College of Engineering & Technology
CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307
Est. 2003

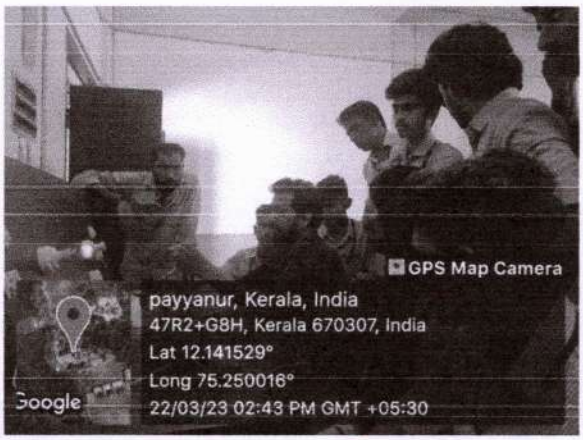


DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LED BULB MANUFACTURING TRAINING PROGRAM REPORT

The Department of Electrical and Electronics Engineering conducted one day LED manufacturing training session for students of Electrical and Electronics Engineering on 22/03/2023 in association with Department of EEE A Total of 24 students participated in the training session. The students gained hands on experience in manufacturing LED bulb.

The event was inaugurated by Dr. Leena A V, Principal, SNGCET. Welcome addresses were delivered by Mr. Abhilash Krishnan (HoD, EEE). Mr. Manu C (AP, EEE) delivered felicitation speech and Mr. Hrishikesh PV, student co coordinator delivered vote of thanks. The training session was concluded at 3.45pm.



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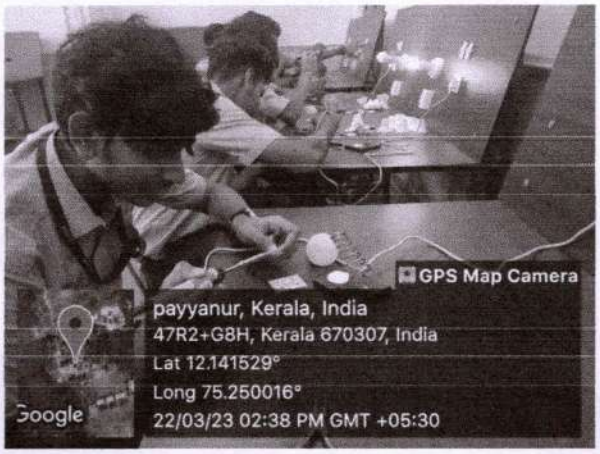
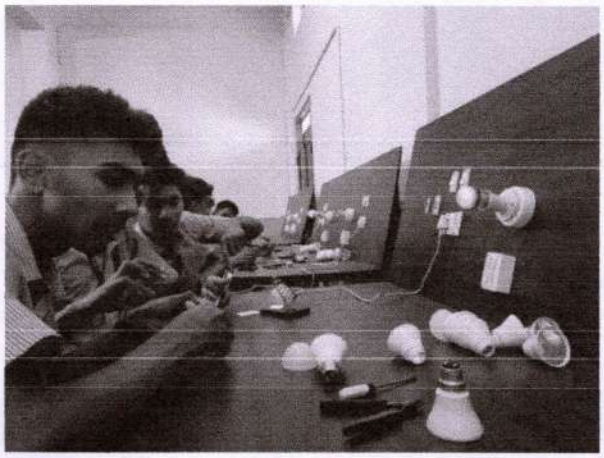
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Co ordinator





Coordinator

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Est. 2003

Sree Narayana Guru College of Engineering & Technology

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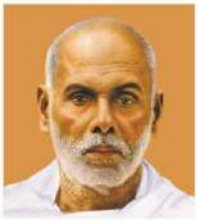

2021-2022

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

EVENT PROPOSAL FORM

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	Workshop
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	No
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	12-02-2022 to 16-02-2022 09:00am – 04:00pm
6	**Venue**	Power Electronics Lab
7	**Whether any professional body is associated with the event?** **If yes, name the body**	No
8	**Participants / Target Audience**	All students
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	Yes EST 130
10	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and

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		creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
11	**Expected Outcomes**	The students should be able to make LED bulbs
12	**Connected PO / PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
13	**Justification for PO / PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
14	**Name of the resource person(s)**	Mr. Manu C(AP EEE)
15	**Designation of the resource person (may attach separate sheet to indicate the profile)**	Asst. Professor , SNGCET
16	**Resource requirements**	**1. Tools Required** • Tikki punching machines • Crimbing tool • Screw driver • Cutter • Multimeter • Plier

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		• Tester • Soldering Iron Soldering Lead • Flex • Soldering stand **2. Raw Materials** • 9W LED HPF driver • Diffuser • Aluminium case • B22 cap • Alumini plate • LED chip **3. Presentation materials** • MS Power point Presentation **4. Documentation:** • Cameras and recording equipment for documenting the program. • Photographers and videographers if necessary. **5. Transportation and Accommodation:** • If required, arrangements for the resource person's transportation and accommodation. **6. Registration and Feedback System:** • Registration desk and materials for participants. • Feedback forms and data collection tools for evaluation. **7. Budget Allocation:** • Allocation of funds for resource person's honorarium, travel expenses, and any other related costs. **8. Cleaning and Maintenance:** • Cleaning services for the venue before and after the event. • Maintenance services for technical equipment. **9. COVID-19 Precautions:** • Adherence to local health guidelines, including mask-wearing, social distancing, and sanitization.
17	**Any fund from external source will be received? If yes, mention it.**	No
18	**Whether budget for the event is attached? (use separate sheet to indicate the estimated budget)**	No

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19	**Any other relevant information**	Nil
20	**Name of the event coordinator(s)**	Mr. Manu C(AP EEE), Ms. Anusha Jyothi (S6 EEE)
21	**Dated signature of the coordinator(s)**	6/12/22

II. TO BE FILLED BY THE DEPARTMENT HOD (any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	
2	**Recommendation [Put a tick □ on whichever is applicable]**	**Recommended** **Not Recommended**
3	**Name**	Prof. Raveendran K
4	**Dated Signature**	7/12/22

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVED

DATED SIGNATURE OF THE PRINCIPAL:

7/12/22

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PRINCIPAL
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KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

Payyanur, Kannur, Kerala, Pin-670307
Promoted by Sree Bhakthi Samvardhini Yogam, Kannur
Affiliated to APJ Abdul Kalam Technological University & Approved by AICTE, New Delhi
www.sngcet.ac.in Email-info@sngcet.ac. in

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Presents Five days Training Programe

on

LED BULB MANUFACTURING TRAINING PROGRAM

Participants all Students

From 12/02/2022 to 16/02/2022

Venue : Power Electronics Lab

: 09.00 am to 04.00 pm

Staff Coordinator

Mr. Manu C
Assistant Professor
Department of EEE

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Student Coordinator

Ms. Anusha Jyothi
S6- EEE
Department of EEE

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY			
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING			
LED BULB MANUFACTURING TRAINING PROGRAM			
Registration Form			
Date: 12/02/2022 to 16/02/2022		Venue: Led Bulb Manufacturing Unit	
Sl.No	**Name of Students**	**Semester**	**Branch**
1	ANUSHA JYOTHI	S6	EEE
2	DEVI KEERTHANA	S6	EEE
3	NIHAD T	S2	EEE
4	ANURAJ N	S2	EEE
5	ADHIN O	S2	EEE
6	SHINOY BIJU	S2	EEE
7	ASWANTH VALSAN	S8	EEE
8	ARJUN SHYLESH	S4	ME
9	ASHISH K	S4	ME
10	DHEERAJ K V	S4	ME

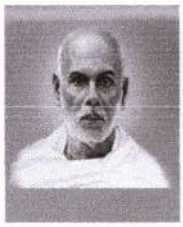
Co-ordinator

HOD(EEE)

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU
COLLEGE OF ENGINEERING & TECHNOLOGY

(PROMOTED BY SREE BHAKTHI SAMVARDHINI YOGAM, KANNUR)
CHALAKKODE P.O., PAYYANUR, KANNUR-670307, KERALA



BULB MANUFACTURING TRAINING PROGRAMME

Agenda

Prayer

Welcome Address

Mr. Abhilash Krishnan T K, AP EEE

Inaguration

Prof.Raveendran K.,HOD EEE

Felicitation

Mr.Manu C. (AP EEE)

Vote of Thanks

Ms. Anusha Jyothi (S6 EEE)

Date: 12-02-2022

Time: 9.00am

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE of ENGINEERING & TECHNOLOGY

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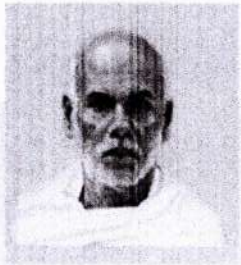
ESTD 2003



CERTIFICATE OF PARTICIPATION

This certificate is presented to

ANUSHA JYOTHI **of** **SNGCET- PAYYANUR**

for participating in the training on

"LED BULB MANUFACTURING TRAINING PROGRAM"

dated 12-02-2022 to 16-02-2022

Organized by

Department of Electrical & Electronics Engineering

COORDINATOR

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

HOD (EEE)

PRINCIPAL

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

POST EVENT ANALYSIS FORM

I. TO BE FILLED BY THE EVENTCOORDINATOR(S)

1	**Event type conducted**	Workshop
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Date and time of the event conducted**	12-02-2022 to 16-02-2022 09:00am – 04:00pm
4	**Venue**	Power Electronics Lab
5	**Whether the event was interdepartmental? If yes, mention the department(s) Associated with**	No
6	**Mode of conduct [online \offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, Mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	No
9	**Any funds received from the professional body? Indicate the amount**	No
10	**Participants/Target Audience**	All students

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11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	Yes, EST 130
12	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
13	**Expected Outcomes**	Hands on experience in making LED bulbs
15	**Connected PO /PSO**	**PO1,PO3,PO5,** **PO 9,PO 11,PO12**
16	**Justification for PO/PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
17	**Whether feedback forms from audience and resource person is collected?**	Yes
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	
20	**Name of the resource person**	Mr. Manu C(AP EEE)
21	**Designation of the resource person(s)**	Asst. Professor , SNGCET
22	**Any other relevant information**	Nil
23	**Name of the event coordinator(s)**	Mr. Manu C(AP EEE), Ms. Anusha Jyothi (S6 EEE)
24	**Dated signature of the coordinator(s)**	02/22

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
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KANNUR

II. TO BE FILLED BY THE DEPARTMENT HOD(anyone of the HoD,in case if the event is jointly conducted by various department(s))

List of enclosures–To be maintained in the file

Sl No:	ITEM	AVAILABILITY[YES /NO]
1	Posters	Yes
2	Schedule of the event	Yes
3	Registration form sample copy	No
4	All registration forms duly filled and signed	No
5	Profile of the resource person(s)	No
6	Feedback forms filled by participants and resource person	No
7	Feedback analysis sheet	No
8	CO attainment calculation sheet	No
9	Study Materials(if any)	No
10	Letters or printouts of e-mail communication Relevant to the event	No
11	Documents related to professional body associated with the event	No
12	Photographs of the event	Yes

1	Comments about the conduct of the event	
2	Comments about the resource person and impact of the event	
3	Name	Prof. Raveendranath
4	Dated Signature	19/2/22

COMMENTS FROM PRINCIPAL

DATED SIGNATURE OF THE PRINCIPAL

17/2/22

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PRINCIPAL
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SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REPORT ON LED BULB MANUFACTURING TRAINING PROGRAM

The Department of Electrical and Electronics Engineering conducted Five days **LED Bulb manufacturing training program** for all students from 12/02/2022 to 16/02/2022. A Total of 09 students participated in the training session. The students gained hands on experience in manufacturing LED bulb.

The event was inaugurated by Prof. Raveendran K, (HoD, EEE). Welcome address was delivered by Mr. Abhilash Krishnan, Professor, EEE. Mr.Manu C (Coordinator) Assistant Professor, EEE delivered felicitation speech and Mr. Anusha jyothi, student coordinator delivered vote of thanks. The inaugural session concluded at 10:00 a.m., after which the training session started.

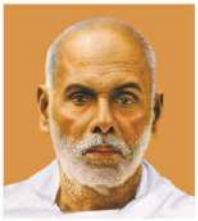
Participants gained insights into the principles of LED operation, various types of LEDs, their applications, and the overall LED manufacturing process. Fundamental soldering skills were imparted, covering solder types, techniques, equipment, and safety precautions. Participants engaged in hands-on soldering practice to develop proficiency. The program delved into the intricacies of LED assembly, including PCB preparation, solder paste application, pick and place processes, and reflow soldering techniques. Practical sessions allowed participants to apply their knowledge directly.

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Est. 2003

Sree Narayana Guru College of Engineering & Technology

CHALAKKODE P.O., KOROM, PAYYANUR, KANNUR-670 307



2020-2021

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

EVENT PROPOSAL FORM

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	Workshop
2	**Event name**	DESIGN AND FABRICATION OF LED BULBS
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	No
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	09-01-2021 to 13-01-2021 09:30am – 4:00pm
6	**Venue**	Power Electronics Lab
7	**Whether any professional body is associated with the event?** **If yes, name the body**	No
8	**Participants / Target Audience**	All students
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No
10	**Objectives of the event**	• **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. • **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. • **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum.

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		• **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
11	**Expected Outcomes**	The students should be able to make LED bulbs
12	**Connected PO / PSO**	**PO1,PO3,PO5,** **PO 9,PO 11,PO12**
13	**Justification for PO / PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
14	**Name of the resource person(s)**	Mr. Manu C(AP EEE)
15	**Designation of the resource person (may attach separate sheet to indicate the profile)**	Asst. Professor , SNGCET
16	**Resource requirements**	**1.Tools Required** • Tikki punching machines • Crimbing tool • Screw driver • Cutter • Multimeter • Plier • Tester • Soldering Iron Soldering Lead • Flex • Soldering stand **II. Raw Materials** • 9W LED HPF driver • Diffuser • Aluminium case • B22 cap • Alumini plate • LED chip **II. Presentation materials** • MS Power point Presentation **IV. Documentation:** • Cameras and recording equipment for documenting the program. • Photographers and videographers if necessary. **V. Transportation and Accommodation:** • If required, arrangements for the resource person's transportation and accommodation. **VI. Registration and Feedback System:**

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SREE NARAYANA GURU COLLEGE OF
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		• Registration desk and materials for participants. • Feedback forms and data collection tools for evaluation. **II. Budget Allocation:** • Allocation of funds for resource person's honorarium, travel expenses, and any other related costs. **II. Cleaning and Maintenance:** • Cleaning services for the venue before and after the event. • Maintenance services for technical equipment. **IX. COVID-19 Precautions:** • Adherence to local health guidelines, including mask-wearing, social distancing, and sanitization.
17	**Any fund from external source will be received? If yes, mentionit.**	No
18	**Whether budget for the event is attached? (use separate sheet to indicate the estimated budget)**	No
19	**Any other relevant information**	Nil
20	**Name of the event coordinator(s)**	Mr. Manu C (AP EEE)
21	**Dated signature of the coordinator(s)**	6/1/21

X. TO BE FILLED BY THE DEPARTMENT HOD (any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	
2	**Recommendation [Put a tick □ on whichever is applicable]**	**Recommended** **Not Recommended**
3	**Name**	Prof. Ravindran k
4	**Dated Signature**	6/1/21

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVEDDATED

SIGNATURE OF THE PRINCIPAL:

6/1/21

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

Promoted by Sree Bhakthi Samvardhini Yogam, Kannur
Affiliated to KTU & Recognised by AICTE, New Delhi
Payyanur, Kannur, Kerala, Pin-670307
Office-04985-201989, 7812911912 Email-info@sngcet.org

DESIGN AND FABRICATION OF LED BULB

ORGANIZED BY
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Date: from 09-01-2021 to 13-01-2021

Time: 9.30am to 4.00pm

Venue: Power Electronics Lab

Staff co ordinators

Mr. Manu C
Assistant Professor
Department of EEE

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Student co ordinators

Mr. Vaishakh MM
S8 EEE
Department of EEE

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LED BULB MANUFACTURING TRAINING PROGRAM
(DESIGN AND FABRICATION OF LED BULBS)

Registration Form

Fee - 100/-

Date: 09/01/2021 to 13/02/2021

Venue: Led Bulb Manufacturing Unit

Sl.No	Name of Students	Semester	Branch
1	VAISHAKH MM	S8	EEE
2	VIVEK VALSAN	S8	EEE
3	MUHAMED NABEEL	S8	EEE
4	VISHAL VV	S4	EEE
5	DEVIKEERTHANA	S4	EEE

Dr. LEENA A. V.
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SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LED BULB MANUFACTURING TRAINING PROGRAM
(DESIGN AND FABRICATION OF LED BULB)

Agenda

Prayer

Welcome Address

M s.Prabha Chandran(AP EEE)

Felicitation

Mr. Manu C (AP EEE)

Principal's Address

Prof. Raveendran K, HoD EEE,SNGCET.

Vote of Thanks

Mr. Vaishakh M M(S7EEE)

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Date: 9-01-2021

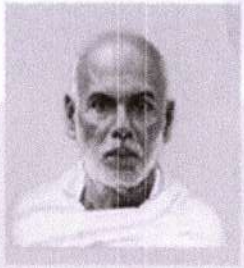
Time: 9.30 am

SREE NARAYANA GURU COLLEGE of ENGINEERING & TECHNOLOGY

Promoted by : Sree Bhakthi Samvardhini Yogam, Kannur

Affiliated to APJ Abdul Kalam Technological University (KTU) & Recognised by AICTE, New Delhi

ESTD 2003



CERTIFICATE OF PARTICIPATION

This certificate is presented to

VISHAL VV **of** **SNGCET- PAYYANUR**

for participating in the training on

"DESIGN AND FABRICATION OF LED BULB"

dated 09-01-2021 to 13-01-2021

Organized by

Department of Electrical & Electronics Engineering

COORDINATOR

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

HOD (EEE)

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

POST EVENT ANALYSIS FORM

I. TO BE FILLED BY THE EVENTCOORDINATOR(S)

1	**Event type conducted**	Workshop
2	**Event name**	DESIGN AND FABRICATION OF LED BULBS
3	**Date and time of the event conducted**	09-01-2021 to 13-01-2021 09:30am – 4:00pm
4	**Venue**	Power Electronics Lab
5	**Whether the event was interdepartmental? If yes, mention the department(s) Associated with**	No
6	**Mode of conduct [online \offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, Mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	No
9	**Any funds received from the professional body? Indicate the amount**	No
10	**Participants/Target Audience**	All students
11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No
12	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration

Dr. LEENA A. V.
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		through group activities.
13	**Expected Outcomes**	Hands on experience in making LED bulbs
15	**Connected PO /PSO**	**PO1,PO3,PO5, PO 9,PO 11,PO12**
16	**Justification for PO/PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
17	**Whether feedback forms from audience and resource person is collected?**	Yes
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	No
20	**Name of the resource person**	Mr. Manu C(AP EEE)
21	**Designation of the resource person(s)**	Asst. Professor , SNGCET
22	**Any other relevant information**	Nil
23	**Name of the event coordinator(s)**	Mr. Manu C (AP EEE)
24	**Dated signature of the coordinator(s)**	28/01/21

II. TO BE FILLED BY THE DEPARTMENT HOD(anyone of the HoD,in case if the event is jointly conducted by various department(s))

List of enclosures–To be maintained in the file

Sl No:	ITEM	AVAILABILITY[YES /NO]
1	**Posters**	Yes
2	**Schedule of the event**	Yes
3	**Registration form sample copy**	No
4	**All registration forms duly filled and signed**	No
5	**Profile of the resource person(s)**	No
6	**Feedback forms filled by participants and resource person**	Yes
7	**Feedback analysis sheet**	Yes
8	**CO attainment calculation sheet**	No
9	**Study Materials(if any)**	No
10	**Letters or printouts of e-mail communication Relevant to the event**	No

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ENGINEERING & TECHNOLOGY, PAYYANUR
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11	**Documents related to professional body associated with the event**	No
12	**Photographs of the event**	Yes

1	**Comments about the conduct of the event**	
2	**Comments about the resource person and impact of the event**	
3	**Name**	Prof. Raveendran k
4	**Dated Signature**	12/11/21

COMMENTS FROM PRINCIPAL

DATED SIGNATURE OF THE PRINCIPAL

14/11/21

Dr. LEENA A. V.
PRINCIPAL
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SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REPORT ON LED BULB MANUFACTURING TRAINING PROGRAM

The Department of Electrical and Electronics Engineering conducted Five days **LED manufacturing training program (DESIGN AND FABRICATION OF LED BULB)** for students of Electrical and Electronics Engineering from 09/01/2021 to 13/01/2021. A Total of 5 students participated in the training session. The students gained hands on experience in manufacturing LED bulb.

The event was inaugurated by Prof. Raveendran K. HoD EEE. Welcome addresse was delivered by Ms.Prabha Chandran (Assistant Professor, EEE). Mr. Manu C (Assistant Professor, EEE) delivered felicitation speech and Mr.Vaishakh MM, student coordinator delivered vote of thanks. The inaugural session concluded at 10:00 a.m., after which the training session started.

Participants gained insights into the principles of LED operation, various types of LEDs, their applications, and the overall LED manufacturing process. Fundamental soldering skills were imparted, covering solder types, techniques, equipment, and safety precautions. Participants engaged in hands-on soldering practice to develop proficiency. The program delved into the intricacies of LED assembly, including PCB preparation, solder paste application, pick and place processes, and reflow soldering techniques. Practical sessions allowed participants to apply their knowledge directly.

Dr. LEENA A. V.
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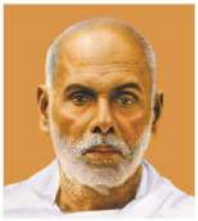

2018-2019

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

EVENT PROPOSAL FORM

I. TO BE FILLED BY THE EVENT COORDINATOR(S)

1	**Event type**	Workshop
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Whether the event is inter departmental? If yes, mention the other department(s) associated with**	No
4	**Mode of conduct [online / offline]**	Offline
5	**Date and time**	11-08-2018 to 15-08-2018 09:30am
6	**Venue**	Power Electronics Lab
7	**Whether any professional body is associated with the event?** **If yes, name the body**	No
8	**Participants / Target Audience**	All students
9	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No
10	**Objectives of the event**	• **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs.

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

	information	
20	**Name of the event coordinator(s)**	Mr. Abhilash Krishnan T K(AP EEE)
21	**Dated signature of the coordinator(s)**	Abhilash 8-8-2018.

X. TO BE FILLED BY THE DEPARTMENT HOD (any one of the HoD, in case if the event is jointly conducted by various department(s))

1	**Comments on the relevance of the event**	
2	**Recommendation [Put a tick □ on whichever is applicable]**	**Recommended** **Not Recommended**
3	**Name**	Prof. Raveendran k
4	**Dated Signature**	11/08/2018

COMMENTS FROM PRINCIPAL

APPROVED / NOT APPROVED

DATED SIGNATURE OF THE PRINCIPAL:

11/5/18

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

Payyanur, Kannur, Kerala, Pin-670307
Promoted by Sree Bhakthi Samvardhini Yogam, Kannur
Affiliated to APJ Abdul Kalam Technological University & Approved by AICTE, New Delhi

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Training Programe on LED BULB MANUFACTURING

Date : 11/08/2018 to 15/08/2018

Venue : Power Electronics Lab

Time : 09.30 AM

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

Coordinator

Mr. Abhilash Krishnan TK
Assistant Professor
Department of EEE

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LED BULB MANUFACTURING TRAINING PROGRAM

Registration Form

Fee : 100/-

Date: 11/08/2018 to 15/08/2018

Venue: Led Bulb Manufacturing Unit

Sl.No	Name of Students	Semester	Branch
1	SANJAY GANGAN K	S5	EEE
2	DEVIKA SATHISH	S5	EEE
3	KIRAN RAJI VIJAYAN	S5	EEE
4	VISHNU UNNIKRISHNAN	S7	EEE
5	THASLEEM. P.T.P	S7	EEE
6	ROHIT V K	S7	EEE
7	MUHAMMED IRSHAD	S7	EEE

Dr. LEENA A. V.
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ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

LED Bulb Manufacturing Training Program

Agenda

Prayer

Welcome Address

Mr. Abhilash Krishnan T K(AP EEE)

Principal's Address

Prof. Raveendran K, HoD EEE,SNGCET.

Vote of Thanks

Mr. Vishnu Unnikrishnan(S7 EEE)

Date: 11-08-2018 **Time: 9.30 am**

Dr. LEENA A. V.
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KANNUR

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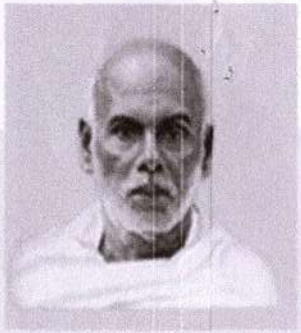
ESTD 2003



CERTIFICATE OF PARTICIPATION

This certificate is presented to

DEVIKA SATHISH **of** **SNGCET- PAYYANUR**

for participating 5 days training on

"LED BULB MANUFACTURING"

dated 11-08-2018 to 15-08-2018

Organized by

Department of Electrical & Electronics Engineering

OORDINATOR

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

HOD
(EEE)

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

POST EVENT ANALYSIS FORM

I. TO BE FILLED BY THE EVENTCOORDINATOR(S)

1	**Event type conducted**	Workshop
2	**Event name**	LED BULB MANUFACTURING TRAINING
3	**Date and time of the event conducted**	11-08-2018 to 15-08-2018 09:30am
4	**Venue**	Power Electronics Lab
5	**Whether the event was interdepartmental? If yes, mention the department(s) Associated with**	No
6	**Mode of conduct [online \offline]**	Offline
7	**Is there any deviation from the proposal in the date, time and venue of the event? If yes, Mention the reason for change**	No
8	**Whether any professional body was associated with the event?** **If yes, name the body**	No
9	**Any funds received from the professional body? Indicate the amount**	No
10	**Participants/Target Audience**	All students

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

11	**Whether the event is conducted for bridging the gap in syllabus?** **If Yes, name the course with code and the semester and year it the subject is handled**	No
12	**Objectives of the event**	1. **Educational Insight:** Provide B. Tech students with a unique educational opportunity to gain in-depth knowledge about the manufacturing of LED bulbs. 2. **Skill Enhancement:** Enhance students' skills and creativity by encouraging participation in training sessions.. 3. **Holistic Learning:** Encourage interdisciplinary learning by allowing students to engage in different types of activities that cater to their diverse interests and talents, aligning with the holistic nature of the B. Tech curriculum. 4. **Teamwork and Collaboration:** Promote teamwork and collaboration through group activities.
13	**Expected Outcomes**	Hands on experience in making LED bulbs
15	**Connected PO /PSO**	**PO1,PO3,PO5,** **PO 9,PO 11,PO12**
16	**Justification for PO/PSO [may use separate sheet if necessary]**	Engineering knowledge, Problem Analysis, Design / Development Of Solution, Modern tool usage, Individual and Team work, Project Management and Finance Life Long Learning
17	**Whether feedback forms from audience and resource person is collected?**	Yes
18	**Whether analysis of feedback is done? Use separate sheet to indicate the same**	Yes
19	**Attainment level of outcomes**	
20	**Name of the resource person**	Mr. Abhilash Krishnan T K(AP EEE)
21	**Designation of the resource person(s)**	Asst. Professor , SNGCET
22	**Any other relevant information**	Nil
23	**Name of the event coordinator(s)**	Mr. Abhilash Krishnan T K(AP EEE)
24	**Dated signature of the coordinator(s)**	Abhilash 8-8-2018.

Leena

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

II. TO BE FILLED BY THE DEPARTMENT HOD(anyone of the HoD,in case if the event is jointly conducted by various department(s))

List of enclosures–To be maintained in the file

Sl No:	ITEM	AVAILABILITY[YES /NO]
1	Posters	Yes
2	Schedule of the event	Yes
3	Registration form sample copy	No
4	All registration forms duly filled and signed	No
5	Profile of the resource person(s)	No
6	Feedback forms filled by participants and resource person	No
7	Feedback analysis sheet	No
8	CO attainment calculation sheet	No
9	Study Materials(if any)	No
10	Letters or printouts of e-mail communication Relevant to the event	No
11	Documents related to professional body associated with the event	No
12	Photographs of the event	Yes

1	Comments about the conduct of the event	
2	Comments about the resource person and impact of the event	
3	Name	Prof. Raveendran
4	Dated Signature	15/12/2018

COMMENTS FROM PRINCIPAL

DATED SIGNATURE OF THE PRINCIPAL

15/12/18

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REPORT ON LED BULB MANUFACTURING TRAINING PROGRAM

The Department of Electrical and Electronics Engineering conducted Five days **LED Bulb Manufacturing Training Program** for students of Electrical and Electronics Engineering from 11/08/2018 to 15/08/2018. A Total of 7 students participated in the training session. The students gained hands on experience in manufacturing LED bulb.

The event was inaugurated by Prof. Raveendran K, Head of the Department, EEE. Welcome addressed was delivered by Mr. Abhilash Krishnan (Assistant Professor, EEE).

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF
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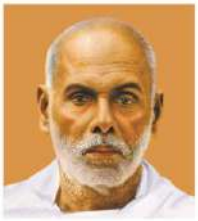

LED MANUFACTURING UNIT

ABOUT

To

The Principal
Sree Narayana Guru College of Engineering and Technology
Payyanur

Sub: Request for permission to start incubation center – reg.

Respected Madam,

On behalf of the Department of Electrical and Electronics Engineering I would like to kindly request to grant permission for starting an incubation center with respect to LED Bulb manufacturing unit. The detailed proposal is attached herewith. I am sure this incubation center will bring good technical exposure amongst students inside and outside the campus and also bring accolades to the college.

Thanking you

Yours faithfully
9/12/2022
Manu C
Assistant Professor
EEE Department

Through,
9/12/22
The HoD (EEE)

Encl:
1: Detailed Proposal

Forwarded to the Secretary
Sir,
The matter was discussed during the last visit of the management to college (on 07/12/22). Sir had informed to submit a proposal. Kindly see the attached estimation. Request to grant permission for same
9/12/22

Dr. LEENA A. V.
PRINCIPAL
SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR
KANNUR

ESTIMATION

SL NO	ITEMS	QTY	RATE	TOTAL
1	9W HPF 57MM LED BULB RAW MATERIALS WITH B22 CAP	100	50	5000
2	TIKKI PUNCHING MACHINES	1	4000	4000
3	CRIMPING TOOL (12 PIN) A GRADE	1	2000	2000
4	HEAT COMPOUND	500 KG	800	800
5	LEAD 18 SWG	500 KG	1200	1200
6	LEAD 22 SWG	10	130	1300
7	SOLDERING IRON-SOLDRON 25 W	5	320	1600
8	BULB COVER 57 MM	50	4.5	225
9	WIRE CUTTER	5	100	500
10	SOLDERING STAND	5	180	900
11	SOLDERING PASTE	5	15	75
12	SOLDERING WICK	10	15	150
13	COMBINATION PLIER	1	150	150
14	LINE TESTER- TAPARIA	2	75	150
15	SCREW DRIVER STAR SMALL	10	80	800
16	SCREW DRIVER MINUS SMALL	2	80	160
17	2-IN-1SCREWDRIVER (PLUS/MINUS) STANDARD SCREWDRIVER SET	1	150	150
18	OPERATING ROOM	1	-	-
19	TABLE AND CHAIR	4 EACH	-	-
	TOTAL			**19160**

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INAUGURAL CEREMONY

20th January 2023, 11:30 AM

Software Incubation Cell

Sri. K. P. BALAKRISHNAN

(President, SBSY)

LED Bulb Manufacturing Unit

Sri. K. P. PAVITHRAN

(Secretary, SBSY)

Mechanical Engineering Lab

Sri. T. K. RAJENDRAN

(Vice President, SBSY)

SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY,

Korom, Chalakode P.O., Payyanur, Kannur - 670307

Managed by Sree Bhakthi Samvardhini Yogam, Talap, Kannur

Affiliated to APJ Abdul Kalam Technological University and Approved by AICTE

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ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT

LED Bulb Manufacturing Unit

LED (Light Emitting Diodes) are the latest and most exciting technological advancement in the lighting industry. LEDs are small, solid light bulbs which are extremely energy efficient and long lasting. LEDs operate differently than traditional incandescent light bulbs. This makes LEDs far more rugged and durable than traditional incandescent light bulbs. LEDs are extremely energy efficient and consume **up to 90% less** power than incandescent bulbs with much lower greenhouse gas emission. LED lamps have a lifespan many times longer than equivalent incandescent lamps. LED bulbs are the best-suited way to save electricity and have a better quality light source at a reasonable rate. They are the future of lighting systems and have great demand thus, starting the LED bulb manufacturing business can be profitable as a business venture.

The **Department of Electrical and Electronics Engineering** familiarize the students with the practical aspects of this important technology and provide valuable hands-on experience.

The aim & scope of this training to empower students with technical skills needed for industry as well as day-to-day life. It would also enhance the employability of students. And also which makes a major step to sensitize students towards green technologies and make students socially responsible.

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Business Setup for LED Lighting Assembly

Light-emitting diodes (LEDs) are semiconductor devices that emit visible light when electric current passes through them. Compared to conventional lighting systems, these are smaller, have a longer operating life and involve a lower cost of ownership. Available in a wide range of colours, LED light bulbs are more durable and offer comparable or better light quality than other types of lighting.

LED bulbs produce light approximately 90% more efficiently than incandescent bulbs. These bulbs are based on solid state lighting, which emits the light from semiconductor chip, thereby generating lesser heat than incandescent bulbs. The useful life of these lamps is defined differently than other light sources such as compact fluorescent light or incandescent bulbs.

Residential LED lights, especially Energy Star rated products, consume at least 75 per cent less energy and last 25 times longer than incandescent lights. These also use significantly less power—a typical 84-watt fluorescent light can be replaced with a 36-watt LED to give the same level of light output.

Process

LED-based lighting system cum LED lamp assembly consists of the following steps:

1. Procure/import milliwatt-rated LED chips, circuit and other mounting devices
2. Embed milliwatt-rated LED chips on the PCB board with the rectifier circuit, filter circuit, etc

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3. Fit the PCB board with a holder cap and plastic modules fitted with Smokey reflector to form a compact unit
4. Test the assembled LED lighting system and package

Raw materials

For assembly of LED-based lighting systems up to 10W you may require:

1. LED chips
2. Rectifier circuit with filter
3. Heat-sink devices
4. Metallic cap holder
5. Plastic body
6. Reflector plastic glass
7. Connecting wire
8. Soldering flux
9. Miscellaneous items
10. Packaging material

Equipment required

LED light manufacturing or assembly is a complex process. Machines need to be selected on the basis of the specific LED type that is being produced and the raw material being used. However, major machines include:

1. LED PCB assembly machine
2. LED lights assembly machine
3. High-speed LED mounting machine
4. LED chip SMD mounting machine
5. Candlelight assembly machine for LED
6. LED tubelight assembly machine

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Other equipment that may be required:

1. Soldering machine
2. Sealing machine
3. Small drilling machine
4. Packaging machine
5. LCR meter
6. Digital multimeter
7. Continuity tester
8. Lux meter
9. Oscilloscope

Pollution control requirements

The following steps may help to control pollution wherever applicable:

1. Fumes and gases are released during hand soldering/wave soldering/dip soldering, which are harmful to people as well as the environment and end products. Alternative technologies may be used to phase-out the existing polluting technologies. Numerous new fluxes have been developed, which contain 2-10 per cent solids as opposed to the traditional 15-35 per cent solids.

2. CFCs, carbon tetrachloride and methyl chloroform are used for cleaning of printed circuit boards after assembly to remove flux residues left after soldering and various kinds of foams for packaging. Many alternative solvents could replace CFC-113 and methyl chloroform in electronics cleaning. Other chlorinated compounds such as trichloroethylene, per chloroethylene and methylene chloride have been used as effective cleaners in the electronics industry for many years. Other organic solvents such as ketenes and alcohols are effective in removing both solder fluxes and many polar contaminants

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LED light manufacturing business registration

The entrepreneur needs to obtain following registrations and licences from government authorities:

1. Company registration
2. Trade licence from municipal authority
3. Udyog Aadhaar MSME registration
4. BIS certification
5. Bureau of Energy Efficiency certification
6. NOC from Pollution Control Board
7. GST registration

However, specific licence and registration requirements will depend on the manufacturing process and the type of LED light that is being produced.

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ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT

LED MANUFACTURING UNIT

SHORT TERM GOALS

1. To conduct One day workshop on Soldering and practice so as to train students for manufacturing LEDs for 2nd , 3rd and Final year Students of SNGCET
2. To Conduct Training on LED manufacturing for 2nd, 3rd and Final year Students of SNGCET
3. To conduct Training workshop on one / 2 day for School Students, ITI students nearby the institution
4. To conducting training for kudumbasree unit for 10 days
5. Existing system can be used for manufacturing 7W,12W &15W Bulbs, Inverter Bulb of 9W

LONG TERM GOALS

1. To Conduct Internship Training for KTU students
2. To manufacture Bulbs for other Company like LUKER,BARCH,ACE..etc
3. To supply LED bulbs with meeting quality at Reasonable price out side the institution
4. To promote R&D in LED Manufacturing Technology

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ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT

LED BULB MANUFACTURING UNIT

LED bulb manufacturing unit inaugurated on 20th January, at 11.30am by the secretary Sri K.P. Pavithran (Secretary SBSY). The event was also graced by the presence of Sri. T K Rajendran (Vice President, SBSY), Dr Leena A V(Principal, SNGCET), Mr.Abhilash Krishnan T K (HoD EEE) who have been instrumental in making this LED manufacturing unit true. Mr. Manu C, Assistant Professor (EEE), welcomed all to the inaugural ceremony. Mr.Abhilash Krishnan T K (HoD EEE) delivered an inspiring keynote address that emphasized the role of incubation cell in nurturing young entrepreneurs and driving economic growth.

The ceremony also featured an address by Sri. K P Pavithran (Secretary, SBSY), who spoke about the vision behind establishing the Incubation Cell at SNGCET. Sri. T K Rajendran (Vice President, SBSY), the institution's commitment towards students in providing them with the necessary resources, mentorship, and opportunities to transform their innovative ideas into viable business. The unit will provide a platform for students study LED Bulb manufacturing and start a new start up.

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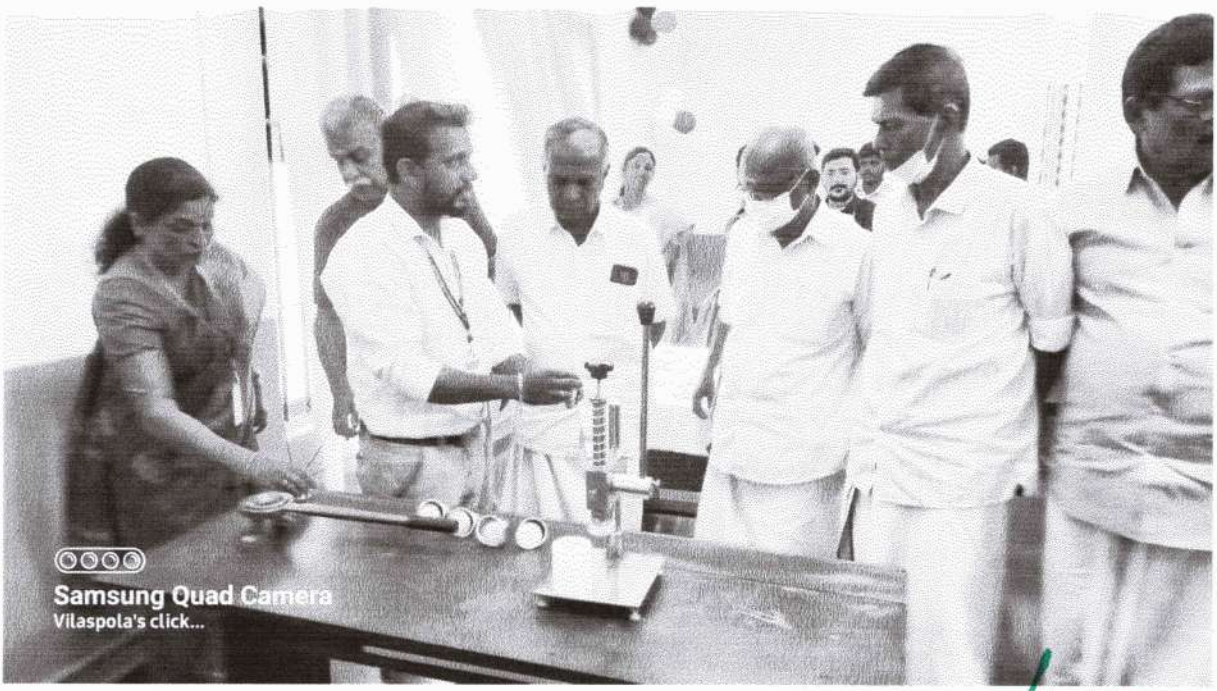

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