

S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Electrical and Electronics Engineering

Batch Allocation

Degree & Branch: B.E., Electrical and Electronics Engineering

Year & Semester: IV & VIII

Course Code & Name EE1821 & Project Work

Academic year & Sem.: 2023-24 (Even Semester)

36

Student's Strength:

S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
1.	1	20UEE011	920420UEE011	AMRUTHA SRI.G	Fabrication of low-cost digital meter for various electrical application	Dr. D. Prince Winston, Prof. & Head/EEE
2.	2	20UEE006	920420UEE006	SHALINI.D	Development of ecofriendly battery balancing kit for electric vehicle applications	Dr. D. Prince Winston, Prof. & Head/EEE
3.	2	20UEE016	920420UEE016	BHAVYA SREE.C	Development of ecofriendly battery balancing kit for electric vehicle applications	Dr. D. Prince Winston, Prof. & Head/EEE
4.	3	20UEE003	920420UEE003	GOBINATH .M	Maximization of output power for the different position of photovoltaic panel with reduced area: An Integrative experimental investigation	Dr. B. Gurukarthik Babu, AP/EEE
5.	3	20UEE004	920420UEE004	RAMKUM AR.K	Maximization of output power for the different position of photovoltaic panel with reduced area: An Integrative experimental investigation	Dr. B. Gurukarthik Babu, AP/EEE
6.	3	20UEE005	920420UEE005	VIJAY.K	Maximization of output power for the different position of photovoltaic panel with reduced	Dr. B. Gurukarthik Babu, AP/EEE



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S.P.G.C.	Nagar,	K.Vellakulam	- 625	701 (Near	VIRUDHUNAGAR).

S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
					area: An Integrative experimental investigation	
7.	3	20UEE013	920420UEE013	HARAI HARA PRABHU.R	Maximization of output power for the different position of photovoltaic panel with reduced area: An Integrative experimental investigation	Dr. B. Gurukarthik Babu, AP/EEE
8.	4	20UEE009	920420UEE009	DEVAKALI DASS.K	Integration and optimization of wireless electric vehicle charging infrastructure	Dr. G. Sakthivel, AP/EEE
9.	4	20UEE024	920420UEE024	BIJESH.A	Integration and optimization of wireless electric vehicle charging infrastructure	Dr. G. Sakthivel, AP/EEE
10.	5	20UEE008	920420UEE008	SANJAY BHARATHI .B	Performance assessment of a bifacial solar photovoltaic system: A Comparative analysis	Er. K. Ganesan, AP/EEE
11.	5	20UEE010	920420UEE010	MOHAMED LUQMAAN .P	Performance assessment of a bifacial solar photovoltaic system: A Comparative analysis	Er. K. Ganesan, AP/EEE
12.	5	20UEE034	920420UEE034	LOGESH.S	Performance assessment of a bifacial solar photovoltaic system: A Comparative analysis	Er. K. Ganesan, AP/EEE
13.	5	20UEE038	920420UEE038	M.ROHITH RAJU	Performance assessment of a bifacial solar photovoltaic system: A Comparative analysis	Er. K. Ganesan, AP/EEE
14.	6	20UEE002	920420UEE002	VISHAL.M. S	Performance evaluation of a vertical bifacial solar photovoltaic system: An experimental analysis	Er. K. Ganesan, AP/EEE



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S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
15.	6	20UEE019	920420UEE019	SANTHOS HKUMAR.P	Performance evaluation of a vertical bifacial solar photovoltaic system: An experimental analysis	Er. K. Ganesan, AP/EEE
16.	6	20UEE028	920420UEE028	SUDHARS ON.S	Performance evaluation of a vertical bifacial solar photovoltaic system: An experimental analysis	Er. K. Ganesan, AP/EEE
17.	6	20UEE033	920420UEE033	SRI SANJAY RAM. K	Performance evaluation of a vertical bifacial solar photovoltaic system: An experimental analysis	Er. K. Ganesan, AP/EEE
18.	7	20UEE021	920420UEE021	SHAILEAS H.M	Speed control of induction motor by ultrasonic radar object detection	Mr. R. Ganesan, AP/EEE
19.	7	20UEE025	920420UEE025	VIJAYAKU MAR.K	Speed control of induction motor by ultrasonic radar object detection	Mr. R. Ganesan, AP/EEE
20.	7	20UEE029	920420UEE029	NAVANEE THA KRISHNAN .N	Speed control of induction motor by ultrasonic radar object detection	Mr. R. Ganesan, AP/EEE
21.	7	20UEE030	920420UEE030	BALAMUR UGAN.N	Speed control of induction motor by ultrasonic radar object detection	Mr. R. Ganesan, AP/EEE
22.	8	20UEE017	920420UEE017	NISHITHA. S	Optimal tilt angle of solar panel	Er. S. Jegan, AP/EEE
23.	8	20UEE020	920420UEE020	SANTHIYA BHARATHI .K	Optimal tilt angle of solar panel	Er. S. Jegan, AP/EEE
24.	8	20UEE023	920420UEE023	KOWSIKA. K	Optimal tilt angle of solar panel	Er. S. Jegan, AP/EEE
25.	8	20UEE026	920420UEE026	KEERTHA NA.G	Optimal tilt angle of solar panel	Er. S. Jegan, AP/EEE



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S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
26.	9	20UEE001	920420UEE001	SAKTHIVE L.N	Artificial intelligence based adaptive protection for a microgrid with distributed energy resources	Er. T. Hariprasath, AP/EEE
27.	9	20UEE015	920420UEE015	SRIDHAR. K	Artificial intelligence based adaptive protection for a microgrid with distributed energy resources	Er. T. Hariprasath, AP/EEE
28.	9	20UEE018	920420UEE018	KIRUBHAK ARAN.G	Artificial intelligence based adaptive protection for a microgrid with distributed energy resources	Er. T. Hariprasath, AP/EEE
29.	9	20UEE032	920420UEE032	MOHAMED KALITH.S	Artificial intelligence based adaptive protection for a microgrid with distributed energy resources	Er. T. Hariprasath, AP/EEE
30.	10	20UEE007	920420UEE007	THIRUPPA THI.P	Preparation of ecofriendly fireworks composition with Prosopis julifora seed powder and analysis of static electricity	Er. T. Hariprasath, AP/EEE & Er. J. Uma Maheswari, AP/EIE
31.	10	20UEE035	920420UEE035	MARTIN SAIMAN.R	Preparation of ecofriendly fireworks composition with Prosopis julifora seed powder and analysis of static electricity	Er. T. Hariprasath, AP/EEE & Er. J. Uma Maheswari, AP/EIE
32.	10	20UEE036	920420UEE036	VIJAY.P	Preparation of ecofriendly fireworks composition with Prosopis julifora seed powder and analysis of static electricity	Er. T. Hariprasath, AP/EEE & Er. J. Uma Maheswari, AP/EIE



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S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
33.	10	20UEE037	920420UEE037	SRIDHAR. B	Preparation of ecofriendly fireworks composition with Prosopis julifora seed powder and analysis of static electricity	Er. T. Hariprasath, AP/EEE & Er. J. Uma Maheswari, AP/EIE
34.	11	20UEE012	920420UEE012	ANANTH.K	Controllable socket for timed electrical appliance activation	Mr. T. Hariprasath, AP/EEE
35.	11	20UEE014	920420UEE014	ARUN.M	Controllable socket for timed electrical appliance activation	Mr. T. Hariprasath, AP/EEE
36.	11	20UEE027	920420UEE027	SUDHARS AN.J	Controllable socket for timed electrical appliance activation	Mr. T. Hariprasath, AP/EEE

Staff in Charge Dr. B. Gurukarthik Babu

Assistant Professor/EEE Kamaraj College of Engineering and Technology, Virudhunagar.

HoD/EEE

Dr. D. Prince Winston

Professor & Head / EEE

Kamaraj College of Engineering and Technology, Virudhunagar.

FABRICATION OF LOW COST DIGITAL METER FOR VARIOUS ELECTRICAL APPLICATIONS

A PROJECT REPORT

Submitted by

G. AMRUTHA SRI (920420UEE011)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

ELECTRICAL AND ELECTRONICS ENGINEERING



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2024

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "FABRICATION OF LOW COST DIGITAL FOR

VARIOUS ELECTRICAL APPLICATIONS" is the bonafide work of

G. AMRUTHA SRI (920420UEE011) who carried out the project work

under my supervision.

SIGNATURE

Dr. D. Prince Winston M.E.,Ph.D., Head of the Department,Professor Dept. of EEE Kamaraj College of Engg & Tech, K.Vellakulam, Near Virudhunagar



Dr. D. Prince Winston M.E.,Ph.D., SUPERVISOR Head of the Department,Professor Dept. of EEE Kamaraj College of Engg & Tech, K.Vellakulam, Near Virudhunagar

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INTERNAL EXAMINER

Dr. B. Lyure Karthik Baby]

Milluo EXTERNAL EXAM

Dr.M.Muhaidheen MSEC.

DEVELOPMENT OF ECO FRIENDLY BATTERY BALANCING KIT FOR ELECTRIC VEHICLE APPLICATIONS

A PROJECT REPORT

Submitted by

SHALINI D (920420UEE006)

BHAVYA SREE C (920420UEE016)

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BONAFIDE CERTIFICATE

Certified that the project report "DEVELOPMENT OF ECO FRIENDLY BATTERYBALANCING KIT FOR ELECTRIC VEHICLE APPLICATIONS" is the bonafide work of D.SHALINI (920420UEE006) & C. BHAVYA SREE(920420UEE016) who carried out the project work under my

supervision.

SIGNATURE Dr.D.Prince Winston M.E.,Ph.D., Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar-626 001. A

SIGNATURE Dr.D.Prince Winston M.E.,Ph.D., SUPERVISOR, Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar-626 001.

ALL.

INTERNAL EXAMINER

[Or. B Guerkarthik Baby]

EXTERNAL EXAMINER Cpr. M. Muhaidheen DSPIEEF, MSEC]

MAXIMIZATION OF OUTPUT POWER FOR THE DIFFERENT POSITION OF PHOTOVOLTAIC PANEL WITH REDUCED AREA: AN INTEGRATIVE EXPERIMENTAL INVESTIGATION

A PROJECT REPORT

Submitted by

GOBINATH M (920420UEE003)

RAMKUMAR K (920420UEE004)

VIJAY K (920420UEE005)

HARIHARAPRABHU (920420UEE013)

in partial fulfillment for the award of the degree of

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BONAFIDE CERTIFICATE

Certified that the project report "A MAXIMIZATION OF OUTPUT POWER FOR THE DIFFERENT POSITION OF PHOTOVOLTAIC PANEL WITH REDUCED AREA : AN INTEGRATIVE EXPERIMENTAL INVESTIGATION" is the bonafide work of "M. GOBINATH (20UEE003), K. RAMKUMAR (920420UEE004), K. VIJAY (920420UEE005) & R. HARIHARA PRABHU (920420UEE013)" who carried out the project work under my supervision.

SIGNATURE

SIGNATURE

Dr. D. PRINCE WINSTON, M.E., Ph.D.,Dr. B. GURUKARTHIK BABU, M.E., Ph.D.,Head of The Department,Supervisor,

Professor,

"le -

Department of EEE,

Kamaraj College of Engg. & Tech.,

K.Vellakulam,

Virudhunagar - 625 701.

Assistant Professor, Department of EEE, Kamaraj College of Engg. & Tech., K.Vellakulam, Virudhunagar - 625 701.

INTERNAL EXAMINER

[Dr. B. yun kartlik babu] F.16.

EXTERNAL EXAMINER

(Dr. M. Muhandheen Porpfære, MgEC)

Integration and Optimization of Wireless Electric Vehicle Charging Infrastructure

A PROJECT REPORT

Submitted by

DEVAKALIDASS K (920420UEE009)

BIJESH A (920420UEE024)

in partial fulfillment for the award of the degree of

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KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "INTEGRATION AND OPTIMIZATION OF WIRELESS ELECTRIC VEHICLE CHARGING INFRASTRUCTURE" is the bonafide work of "DEVAKALIDASS K (920420UEE009) & BIJESH A (920420UEE024)" who carried out the project work under my supervision.

SIGNATURE Dr.D.Prince Winston Head of the Department, Professor EEE, Department of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625701. SIGNATURE Dr.G.Sakthivel SUPERVISOR, AP/EEE, Department of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar - 625701.

ERNAL EXAMINER

(Or - B. Junkanik balu)

EXTERNAL EXAMINER

(Dr. M. Mhaidheen ASPI FFE

F.16.1

PERFORMANCE ASSESSMENT OF A BIFACIAL SOLAR PHOTOVOLTIC SYSTEM: A COMPARATIVE ANALYSIS

A PROJECT REPORT

Submitted by

SANJAY BHARATHI .B (920420UEE008) LOGESH. S (920420UEE034) MOHAMED LUQMAAN. P (920420UEE010) ROHITH RAJU. M (920420UEE038)

in partial fulfillment for the award of the degree of

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(An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "PERFORMANCE ASSESSMENT OF A BIFACIAL SOLAR PHOTOVOLTIC SYSTEM: A COMPARATIVE ANALYSIS" is the bona fide work of SANJAY BHARATHI (920420UEE008), LOGESH.S (920420UEE034), MOHAMED LUQMAAN .P (920420UEE010), ROHITH RAJU. M (920420UEE038)" who carried out the project work under my supervision.

ii

SIGNATURE

Dr. D. Prince Winston, M.E., Ph.D. Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625701.

Pfle. INTERNAL EXAMINER [Dr. B. ywww.karthik baba]

Dr. K. Ganesan, M.E., Ph.D. SUPERVISOR, Assistant Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar - 625701.

> EXTERNAL EXAMINER CDr. M. Muhardhan Moller, Myrc

PERFOMANCEEVALUATIONOF AVERTICALBIFACIALSOLARPHOTOVOLTAICSYSTE M: ANEXPERIMENTAL ANALYSIS

APROJECTREPORT

Submittedby

VISHALMS(920420UEE002)SUDHARS ON S (920420UEE028)SRISANJAYRAM K (920420UEE033)SANTHOSHKUMARP(920420UEE019)

in partial fulfillment for the award of the degree of

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BONAFIDE CERTIFICATE

Certified that the project report "PERFOMANCE EVALUATION OF A VERTICAL BIFACIAL SOLARPHOTOVOLTAIC SYSTEM: AN EXPERIMENTAL ANALYSIS" is the bona fide work of VISHAL M S (920420UEE002), SUDHARSON S (920420UEE028), SRISANJAYRAM K (920420UEE033), SANTHOSHKUMAR P (920420UEE019)" who carried out the project work under my supervision.

SIGNATURE

Dr. D. Prince Winston, M.E., Ph.D. Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625701.

garegois SIGNATURE

Dr. K. Ganesan, M.E., Ph.D. SUPERVISOR, Assistant Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar - 625701.

INTERNAL EXAMINER [Dr. B. June kartik bola]

EXTERNAL EXAMINER (Dr.M. Munavidhan Asp(EEE, MSEC

11

VORTEX INDUCED VIBRATING WIND TURBINE

A PROJECT REPORT

Submitted by

SHAILEASH M (920420UEE021)

VIJAYAKUMAR K (920420UEE025)

NAVANEETHAKRISHNAN N (920420UEE029)

BALAMURUGAN N (920420UEE025)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

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ELRCTRICAL AND ELECTRONICS ENGINEERING



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

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BONAFIDE CERTIFICATE

Certified that the project report "VORTEX INDUCED VIBRATING WIND TURBINE" is the bonafide work of "M. SHAILEASH (920420UEE021),

K. VIJAYAKUMAR (920420UEE025), N. NAVANEETHAKRISHNAN (920420UEE029), N. BALAMURUGAN (20UEE030) " who carried out the project work under my supervision.

BIGNATURE Dr. D. Prince Winston, M.E., ph.D., Head of the Department, Designation,

Dept. of EEE,

Kamaraj College of Engg & Tech, K.Vellakulam,

Virudhunagar – 625 701.

INTERNAL EXAMINER

Gr. B. your karthik baba)

Mr. R. Ganesan, M.E. Ph.D.,

SUPERVISOR, Designation, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625 701.

EXTERNAL EXAMINER

(Dr.M. Muhandheen APPIELE, MEC

Optimal Tilt Angle of a Bifacial Solar PV Module for Maximum Power Output: A Case Study For KCET

A PROJECT REPORT

Submitted by

NISHITHA S (920420UEE017) SANTHIYA BHARATHI K (920420UEE020) KOWSIKA K (920420UEE023) KEERTHANA G (920420UEE026)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

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BONAFIDE CERTIFICATE

Certified that the project report "OPTIMAL TILT ANGLE OF A BIFACIAL SOLAR PV MODULE FOR MAXIMUM POWER OUTPUT: A CASE STUDY FOR KCET" is the bonafide work of " SANTHIYA BHARATHI K (920420UEE020), KEERTHANA G (920420UEE026), KOWSIKA K (920420UEE023),

NISHITHA S (920420UEE017) " who carried out the project work under my supervision.

Prince Winston. D M.E., Ph.D

Head of the Department, HoD/EEE.

Dept. of Electrical and Electronics Engineering,

Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625 701.

Sug-

Jegan. S M.E., Ph. D

Supervisor, AP/EEE,

Dept. of Electrical and Electronics Engineering

Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625701.

of ...

INTERNAL EXAMINER

F.16.1 F.16.1

fr-Mudia 30/4 EXTERNAL EXAMINER

(Dr.M. Muhandheen Aspiett, MJEC)

ARTIFICIAL INTELLIGENCE BASED ADAPTIVE PROTECTION FOR A MICROGRID WITH DISTRIBUTED ENERGY SYSTEM

A PROJECT REPORT

Submitted by

SAKTHIVEL N (920420UEE001)

SRIDHAR K (920420UEE015)

KIRUBHAKARAN G (920420UEE018)

MOHAMED KALITH S (920420UEE032)

in partial fulfillment for the award of the degree of

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BONAFIDE CERTIFICATE

Certified that the project report "ARTIFICIAL INTELLIGENCE BASED ADAPTIVE PROTECTION FOR A MICROGRID WITH DISTRIBUTED ENERGY SYSTEM" is the bonafide work of "N. SAKTHIVEL (920420UEE001), K. SRIDHAR (920420UEE015), G. KIRUBHAKARAN (920420UEE018) and S. MOHAMED KALITH (920420UEE032)" who carried out the project work under my supervision.

SIGNATURE Dr. D. Prince Winston, M.E., Ph.D., Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625701.

By II.

INTERNAL EXAMINER

Dr. B. yum karthi k babu]

6. Un Phone ungly 1 mg SIGNATURE

Er. T. Hari Prasath, M.E., SUPERVISOR, Assistant Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar - 625701.

EXTERNAL EXAMINER (Dr.m. Muraidher Aspitel, MECI

ii

PREPARATION OF ECO-FRIENDLY FIREWORKS COMPOSITION WITH PROSOPIS JULIFORA SEED POWDER

A PROJECT REPORT

Submitted by

THIRUPPATHI. P (920420UEE007) MARTIN SAIMAN. R (920420UEE035) VIJAY. P (920420UEE036) SRIDHAR. B (920420UEE037)

in partial fulfillment for the award of the degree of

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KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certifiedthat the project report "PREPARATION OF ECO-FRIENDLY FIREWORKS COMPOSITION WITH PROSOPIS JULIFORA SEED POWDER" is the bonafide work of "THIRUPPATHI P (20UEE007), MARTIN SAIMAN R (20UEE035), VIJAY P (20UEE036) and SRIDHAR . B (20UEE037)" who carried out the project work undermy supervision.

SIGNATURE

Dr. D. Prince Winston, M.E., Ph.D.
Head of the Department,
Professor,
Dept. of EEE,
Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 625701.

SIGNATURE

Er. T. Hari Prasath, M.E. SUPERVISOR, Assistant Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar - 625701.

INTERNAL EXAMINER

EXTERNAL EXAMINER

CONTROLLABLE SOCKET FOR TIMED ELECTRICAL APPLIANCE ACTIVATION

A PROJECT REPORT

Submitted by

ANANTH K (920420UEE012)

ARUN M (920420UEE014)

SUDHARSAN J (920420UEE027)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

ELECTRICAL AND ELECTRONICS ENGINEERING



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "CONTROLLABLE SOCKET FOR TIMED ELECTRICAL APPLIANCE ACTIVATION" is the bonafide work of "K.ANANTH (920420UEE012), M.ARUN (920420UEE014) & J.SUDHARSAN (920420UEE027)" who carried out the project work under my supervision.

SIGNATURE

Dr. D. PRINCEWINSTON, M.E., Ph.D., Head of the Department, Professor, Dept. of Electrical and Electronics Engineering,

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 625701.

6. U. Droughter

Mr. T. HARI PRASATH, M.E.,
SUPERVISOR,
Assistant Professor,
Dept. of Electrical and Electronics
Engineering,
Kamaraj College of Engg & Tech,
K.Vellakulam,
Virudhunagar - 625701.

MIL.

INTERNAL EXAMINER

(Dr. B. Gume karthik bobe)

EXTERNAL EXAMINER (Dr.M. Muraidhean ASP(ERF, MEC



S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Electrical and Electronics Engineering

Batch Allocation

Degree & Branch: M.E., Power Systems Engineering

Year & Semester: II & IV

Course Code & Name PS1421 & Project Work - Phase II

Academic year & Sem.: 2023-24 (Even Semester)

2

Student's Strength:

S. No.	Batch	Roll No.	Reg. No.	Student's Name	Project Title	Project Supervisor
1.	1	22PPS01	920422411001	Devisridhivy adharshini M	Comparative analysis of various reconfiguration techniques for partial shading conditions in Solar Photovoltaic systems	Dr. B. Gurukarthik Babu, AP/EEE
2.	2	22PPS02	920422411002	Dona Mol A S	Enhancing the efficiency of Solar Photovoltaic panel with the golden ratio for different partial shading scenarios	Dr. D. Prince Winston, Prof. & Head/EEE

Staff in Charge Dr. B. Gurukarthik Babu

Assistant Professor/EEE

Kamaraj College of Engineering and Technology, Virudhunagar.

HoD/EEE

Dr. D. Prince Winston

Professor & Head / EEE Kamaraj College of Engineering

and Technology, Virudhunagar.

COMPARATIVE ANALYSIS OF VARIOUS RECONFIGURATION TECHNIQUES FOR PARTIAL SHADING CONDITIONS IN SOLAR PHOTOVOLTAIC SYSTEMS

A THESIS

Submitted by

DEVISRIDHIVYADHARSHINI M (920422411001)

in partial fulfillment for the award of the degree of

MASTER OF ENGINEERING

IN

POWER SYSTEMS ENGINEERING



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701.

BONAFIDE CERTIFICATE

Certified that this Thesis titled "COMPARATIVE ANALYSIS OF VARIOUS RECONFIGURATION TECHNIQUES FOR PARTIAL SHADING CONDITIONS IN SOLAR PHOTOVOLTAIC SYSTEMS" is the bonafide work of DEVISRIDHIVYADHARSHINI M (920422411001) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE Dr. D. Prince Winston M.E., Ph.D., HEAD OF THE DEPARTMENT, Professor, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar – 625 701.

INTERNAL EXAMINER [Dr. B. Yum karthik Eahn]

SIGNATURE Dr. B. Gurukarthik Babu M.E., Ph.D., SUPERVISOR, Assistant Professor, Dept. of EEE, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar – 625 701.

EXTERNAL EXAMINER Dr. M. Munaidheen OSPIEEE, MSEC)

Enhancing the Efficiency of Solar Photovoltaic Panel with Golden Ratio for Different Partial Shading Scenarios

A THESIS

Submitted by

DONA MOL A S (92042241100)

in partial fulfillment for the award of the degree of

MASTER OF ENGINEERING

IN

POWER SYSTEMS ENGINEERING



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 625 701.

BONAFIDE CERTIFICATE

Certified that this Thesis titled "ENHANCING THE EFFICIENCY OF SOLAR PHOTOVOLTAIC PANEL WITH GOLDEN RATIO FOR DIFFERENT PARTIAL SHADING SCENARIOS" is the bonafide work of DONA MOL A S (920422411002) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE

Dr. D. Prince Winston M.E., Ph.D., Head of the Department, Professor, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar – 625 701.

INTERNAL EXAMINER Er B. June Kan huk Sabu)

SIGNATURE

Dr. D. Prince Winston M.E., Ph.D., Dr. G. Sakthivel M.E., Ph.D., Supervisors, Dept. of EEE, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar – 625 701.

EXTERNAL EXAMINER Cor. M. Muhardhean ASO (C-EE 199E (1)



S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF EEE

Industrial Training / Internship / Inplant Training details

S.No.	Roll Number	Register Number	Name of the Student	No. of Days	No. of Hours	From Date	To Date	Name of the Industry	Address of the Industry
1	21UEE002	920421105022	THIGAN.K.J	17	119	19.06.2023	05.07.2023	Azure soft tech	Azure soft tech, Madurai
2	21UEE003	920421105003	AJAY.M	17	119	19.06.2023	05.07.2023	Azure soft tech	Azure soft tech, Madurai
3	21UEE004	920421105018	SHREENACHIAAR.K.P	46	322	05.06.2023	20.07.2023	NIT, Trichy	NIT, Trichy
4	21UEE011	920421105006	DARSAN.S	30	210	10.06.2023	10.07.2023	Futurik technology	Futurik technology, Madurai
5	21UEE021	920421105016	SENTHIL VELAN.B	16	112	19.06.2023	05.07.2023	Azure soft tech	Azure soft tech, Madurai
6	21UEE022	920421105015	PRAKASH.A	16	112	19.06.2023	05.07.2023	Azure soft tech	Azure soft tech, Madurai
7	21UEE023	920421105012	KARTHICK GOWTHAM.	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd
8	21UEE025	920421105305	VISWAMBARAN.R	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd, Madurai
9	21UEE026	920421105301	JEGADEESH MANIYAN.A	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd, Madurai
10	21UEE027	920421105304	NARESHKUMAR.V	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd, Madurai
11	21UEE028	920421105303	NALLAIAH.M	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd, Madurai
12	21UEE030	920421105302	MOHAMEDSAJUDHEEN.	22	154	20.06.2023	11.07.2023	Friends electrical Pvt Ltd	Friends electrical Pvt Ltd, Madurai



AZURE Soft Tech Solution

Innevation Explored

July 05, 2023 Ref: ASTS/INT/2023/065

TO WHOM IT MAY CONCERN

This is to certify that Mr. THIGAN K J (Reg. No. 920421105022) Third year B.E – Electrical and Electronics Engineering student of Kamaraj College of Engineering & Technology, Virudhunagar, had been associated with AZURE Soft Tech Solutions as an Intern - and has successfully completed his mini project in Recent Frontend Frameworks for the period from June 19, 2023 to July 05, 2023.

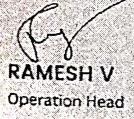
During the tenure with us, we found Mr. THIGAN K J, sincere and result oriented.

We wish Mr. THIGAN K J, all the best for his future endeavors.



For Azure Soft Tech Solutions

91-63693 12510



With @azuresentiachsolutions.com 0452-7968996 (iii) www.abureschechsolutions.com No.74 , Pandiyan Nagar Thirunagar . Madural Tamilnadu - 526005





AZURE Soft Tech Solutions

July 05, 2023 Ref: ASTS/INT/2023/066

TO WHOM IT MAY CONCERN

This is to certify that Mr. AJAY M (Reg. No. 920421105003) Third year B.E – Electrical and Electronics Engineering student of Kamaraj College of Engineering & Technology, Virudhunagar, had been associated with AZURE Soft Tech Solutions as an Intern – and has successfully completed his mini project in Recent Frontend Frameworks for the period from June 19, 2023 to July 05, 2023.

During the tenure with us, we found Mr. AJAY M, sincere and result oriented.

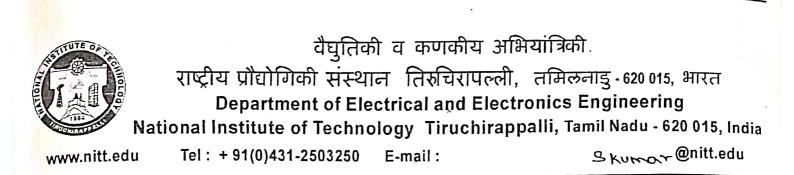
We wish Mr. AJAY M, all the best for his future endeavors.



For Azure Soft Tech Solutions

RAMESH V Operation Head





20th July 2023

INTERNSHIP CERTIFICATE

This is to certify that <u>Ms. K. P. SHREE NACHIAAR</u>, [21UEE004] from Kamaraj College of Engineering and Technology, S.P.G. Chidambara Nadar, C.Nagammal Campus, Vellakulam, Tamil Nadu-625701, has completed the internship program at Department of Electrical and Electronics Engineering, National Institute of Technology, Tiruchirappalli-620015.

Ms. K. P. SHREE NACHIAAR, started joining the program from 5th June 2023 to 20th July 2023. During her stay at NIT Tiruchirappalli as an Intern, <u>she learnt the Fundamentals</u>, Modelling and Simulation of Battery, Battery Management systems for Electric Vehicle (EV) Applications and also, she displays enthusiasm, leadership, self-discipline, and self-motivation.

We wish all the very best in her future endeavours.

Sincerely,

S. Donto 20/07/2023

हों.सु. सेंपिल कुमार / Dr. S. SENTHIL KUMAR सहयोगी पाप्यापक / Associate Professor देपुलिस व काक्षेत्र अग्रिजेस्ति / क्रिस्टेक्स्से सिंस्संट्रांस्ट क्रिस्टालंड क्रिडियालंड रापीय पीपालिको संस्थान / National Institute of Technology तिरुचिरापल्ले - 620 015 / Tiruchireppalii - 620 015. ततिरूलाइ. झारत / TamiiNadu, INDIA







AZURE Soft Tech Solutions

July 05, 2023 Ref. ASTS/INT/2023/067

TO WHOM IT MAY CONCERN

This is to certify that Mr. SENTHIL VELAN B (Reg. No. 920421105016) Third year B.E – Electrical and Electronics Engineering student of Kamaraj College of Engineering & Technology, Virudhunagar, had been associated with AZURE Soft Tech Solutions as an Intern – and has successfully completed his mini project in Recent Frontend Frameworks for the period from June 19, 2023 to July 05, 2023.

During the tenure with us, we found Mr. SENTHIL VELAN B, sincere and result oriented.

We wish Mr. SENTHIL VELAN B, all the best for his future endeavors.



For Azure Soft Tech Solutions

RAMESH V Operation Head





AZURE Soft Tech Solutions

July 05, 2023 Rel: ASTS/INT/2023/068

TO WHOM IT MAY CONCERN

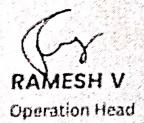
This is to certify that Mr. PRAKASH A (Reg. No. 920421105015) Third year B.E – Electrical and Electronics Engineering student of Kamaraj College of Engineering & Technology, Virudhunagar, had been associated with AZURE Soft Tech Solutions as an Intern – and has successfully completed his mini project in Recent Frontend Frameworks for the period from June 19, 2023 to July 05, 2023.

During the tenure with us, we found Mr. PRAKASH A. sincere and result oriented.

We wish Mr. PRAKASH A, all the best for his future endeavors.



For Azure Soft Tech Solutions





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FRIENDS ELECTRICALS

Director of Electrical BASKARAN 71, Anna Nagar, Samayanallur, Madural - 625402

DATE:11.7.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to certify that Mr.C. Karthick gowtham The students of Electrical and Electronics Engineering (EEE) from Kamaraj College Of Engineering and Technology has successfully completed internship training program on Busbar connection, Cable laying Learning and Working Process in our organization FRIENDS ELECTRICALS PVT LTD from 20.06.2023 to 11.07.2023 During the live project his performance is certified as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Electricals Pvt Ltd.,

For Friends Electric. **Director of Electrical**

CHE Re 19942277948 8754621775



FRIENDS ELECTRICALS

Director of Electrical BASKARAN

71/5, Anna Nagar, Samayanallur, Madurai - 625402

DATE:11.07.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to certify that Mr. R. VISHWAMBARAN. The students of Electrical and Electronics Engineering (EEE) from Kamaraj College. Of Engineering and Technology has successfully completed internship training program on Busbar connection, Cable Laying Learning and Working Process in our organization FRIENDS ELECTRICALS PVT LTD from 20.06.2023 to 11.07.2023 During the laye project his performance is certified as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Electricals Pvt Ltd.,

For Friends/Electricals

Director of Electrical

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FRIENDS ELECTRICALS

Denser of Decricol BASKARAN 71,15, Anna Magar. Sanaganalka, Madarar 625462

DATE 11.07.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to canthe that Mr. A. JEGADEESH MANIYAN The students of Flectrical and Deciminal Engineering (LEE) from Nameria College Of Log-sering and Fectinebogy has pacenthely completed internation training program on Backet connection, Cable Eying Learning and Working Process in *our organization* FRIENDS ELECTRICALS PVT LTD from 20.05.7023 to 11.07.2023 Unling the line project has performance is centered as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Bectricals Pot Ut.,

For Priends Electricals

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Authorized Separately

Cell No 994227048 8754621775



FRIENDS ELECTRICALS

Director of Electrical BASKARAN 71/5, Anna tiagar, Samayanallur, Madural - 675407

DATE:11.07.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to certify that Mr. NARESHKUMAR.V The students of Electrical and Electronics Engineering (EEE) from Kamaraj College Of Engineering and Technology has successfully completed internship training program on Busbar connection, Cable laying Learning and Working Process In our organization FRIENDS ELECTRICALS PVT LTD from 20.06.2023 to 11.07.2023 During the live project his performance is certified as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Electricals Pvt Ltd.,

For Friends Electricals

Director of Electrical

Cell No: 994227048 8754621775



Director of Electrical BASKARAN 71/5, Anna Nagar, Samayanallur, Madural - 625402

DATE:11.07.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to certify that Mr. **M. Nallaiah** The students of Electrical and Electronics Engineering (EEE) from Kamaraj College Of Engineering and Technology has successfully completed internship training program on Busbar connection, Cable laying Learning and Working Process in our organization **FRIENDS ELECTRICALS PVT LTD** from 20.06.2023 to 11.07.2023 During the live project his performance is certified as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Electricals Pvt Ltd.,

For Friends Electricals Director of Electrical

Internship certificate

Cell No: 994227048 8754621775



FRIENDS ELECTRICALS

Director of Electrical BASKARAN 71/5, Anna Nagar, Samayanallur, Madural - 625402

DATE:11.07.2023

TO WHOM SO EVEN IT MAY CONCERN

This is to certify that Mr.A.MOHAMEDSAJUDHEEN The students of Electrical and Electronics Engineering (EEE) from Kamaraj College Of Engineering and Technology has successfully completed Internship training program on Busbar connection, Cable laying Learning and Working Process in our organization FRIENDS ELECTRICALS PVT LTD from 20.06.2023 to 11.07.2023 During the live project his performance is certified as good.

WE WISH ALL SUCCESS IN ACADEMIC PERFORMANCE

For Friends Electricals Pvt Ltd.,

For Friends Electricals Director of Electrical