



ROHINI

COLLEGE OF ENGINEERING & TECHNOLOGY

FEEDERS - 2022

**DEPARTMENT OF
EEE**

**MAGAZINE
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VISION

To create technically competent technocrats to meet the demand of Electrical and Electronics industry and societal need for the well-being of human kinds.

MISSION

- M1. To provide knowledge and skills necessary for professional development in Electrical and Electronics Engineering.
- M2. To promote research and creativity in the area of Electrical and Electronics Engineering.
- M3. To promote team work and professional conduct in sociological activities.

PROGRAM EDUCATIONAL OBJECTIVES

- PEO 1: Graduates of the programme will possess career in electrical and allied fields.
- PEO 2: Graduates will have the ability to adapt to the growing technological requirement of the society through lifelong learning and team work.
- PEO 3: Graduates of the programme will possess knowledge to pursue higher studies.

Shri. K. NEELA MARTHANDAN

CHAIRMAN

Rohini College of Engineering and Technology



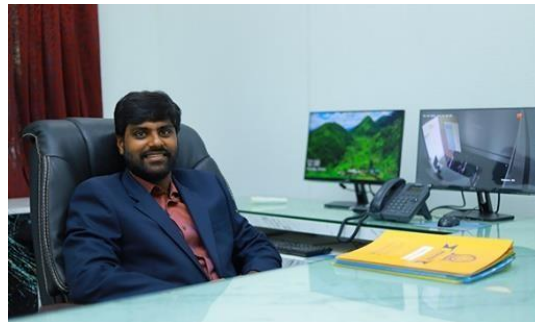
MESSAGE

As a Chairman of Rohini College of Engineering and Technology. I feel proud that the students of Electrical and Electronics Engineering Department are releasing a magazine RCET is a dream project for me and I am happy that RCET is taking a proper shape with the co-operation of all concerned. Students are the real assets of RCET and when they realize their responsibilities, RCET will always remain above all other similar Institutions. I take this opportunity to wish all the students a bright future.

Dr. N. NEELA VISHNU

PRO CHAIRMAN

Rohini College of Engineering and Technology



MESSAGE

"The roots of education are bitter, but the fruit is sweet."

To be in step with the times, A College needs to incorporate the latest technologies and methodologies. This will help the students to become not only conscious human beings and responsible citizens but also good professionals.

I am glad to say Rohini college of engineering and technology, Palkulam-Kanyakumari, has provided with no doubt that it can keep pace with the constantly changing world without compromising on its rich cultural legacy.

I congratulate Principal, HOD's, Staff and Students for bringing laurels to the school in the past and hope they will continue their sincere efforts jointly in achieving the excellence in every field, particularly in academics and sports in future also.

I also wish them every success.

Dr. V. M. BLESSY GEO

MANAGING DIRECTOR

Rohini College of Engineering and Technology



MESSAGE

I understand that the students of Electrical and Electronics Engineering Department are coming out with a Magazine. As the Managing Director of Rohini College of Engineering and Technology, I feel proud about it. We have taken an oath that we will develop RCET to world class standard and provide an overall development to all the students. We march towards that goal. We are happy that the students of RCET are properly shaping up, facilitating us to meet our goal. I wish all success to the EEE students.

Dr. R. Rajesh., ME., Ph.D.,
Principal
Rohini College of Engineering and Technology



MESSAGE

It is a great pleasure for me that our Electrical and Electronics Engineering department is releasing a magazine.

The magazine is presenting a glimpse of the growth of the institution on many fronts. Our students and faculties have performed exceedingly well and competent enough in all the fields. Beyond academics, the research activities are being conducted.

The college also motivates and encourages staff and students to undertake research and enterprising skills. The faculty members play major role in the overall development of department and institute.

I extend my greetings and best wishes to the faculties and students of the department and wish their endeavors my very best.

Dr.D.SAM HARISON,
HOD / EEE
Rohini College of Engineering and Technology



MESSAGE

On behalf of our students and faculty, it is my privilege to welcome all. We take pride in our faculty, a team of highly capable and dedicated professionals, most of whom have academic and industrial experience and degrees from leading universities of the India.

We provide sample opportunities to our faculty and students, through in-house trainings, workshops and trainings outside the college campus for further growth and development.

The Department has taken up the task of developing competent Electrical engineers of high quality, capable of facing various challenges of the power situation in the country

To produce graduates who are able to apply the technical skills which they have learnt in the department in order to serve the State and National Industries.

Prepare and train the graduates who are proficient of maintaining and improving their technical competence through enduring learning, including entering and succeeding in an advanced degree program in a field of Science & Technology.

LEARN LEARNING NEVER ENDS!

Editorial Message

It is an occasion of immense pleasure for the Department of Electrical and Electrical & Electronics Engineering to publish the E- magazine “FEEDERS”.

The Editorial board of department of EEE wants to thank all the faculty members and students who have made this issue a success by providing an article.

This magazine focuses on the recent trends evolved in the field of electricalengineering & wants to provide advanced knowledge and awareness among thestudents about the same.

The Editorial board also wants to thank the Management of the Institute and Head of the department for inspiring us to go forward in publishing this magazine.

Editorial Board

Dr. G.K. Jabash Samuel (Editor in Chief)

Prof. S. Sanju (Associate Editor-Faculty)

Mr. D. Kani Rajan (Associate Editor -Student)

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K. Sathya Sivan (Third EEE), K. Rebekha (Third EEE)

Abdul Rahman.N (Second EEE) , N. Nava Ramya (Second EEE)

Design and Implementation of AC/DC Converter Fed Hybrid Vehicle

ABSTRACT

The main aim of this project is to design a sliding mode controller (SMC) for AC-DC converter to track the desired AC voltage under load variation. Hybrid vehicle is a vehicle which uses two or more distinct type of power source. The main application of this converter is used in electric hybrid vehicle. In converters, the level of current is a function of load and most of the time is nonlinear. Sliding-Mode Control (SMC) has been widely utilized to control nonlinear systems with uncertain dynamics. The suggested controller doesnot need current sensors and only the desired AC voltage is used as reference.

Variation of resistive load is considered as uncertainty and it causes that system to become unstable, so that output voltage has not the ability to track reference sinusoidal voltage. The effect of load changing on the system is compensated effectively by SMC. Two indices are considered for measuring the existing error between output and reference voltage which are Integral of Absolute Error (IAE) and Integral of Total Control Power (ITCP). Also, two gains from SMC are optimized by using GA optimization technique in order to minimize the error. Finally, the results are compared with existing PID controller which is implemented to the system.

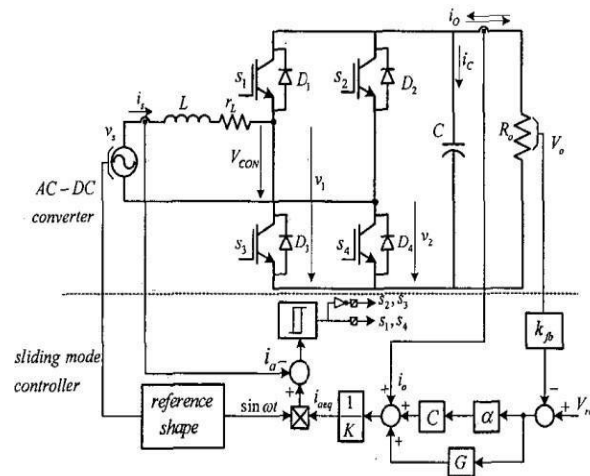
INTRODUCTION

Rectifier is an electrical instrument which transforms alternating current/voltage (AC) to direct current/voltage (DC); the converted DC can be at any demanded voltage and frequency with the use of proper transformers, switching, and control circuits. Rectifier can be discovered in a diversity of shapes, including full bridge or half bridge, three phase or single phases. They must control the frequency and magnitude of the output voltage. This is performed by Pulse Width Modulation of the converter switches and therefore such converters are called PWM converters.



This paper concentrates on control of buck-boost ac-dc converter loaded by unknown (linear or nonlinear) resistive load. Besides the linear resistive load of particular interest is the constant power load, which is often used as a simplified model for the input impedance of a converter with output voltage regulation. Typical linear control schemes employed in the state-of-the-art unity power factor converters have fairly low bandwidth in order to limit the impact of output voltage ripple on input power factor. In such controllers, disturbances are

attended by control actions taken at most in the order of twice per line cycle. The fast controller presented here executes control action at a much faster rate. As a result, the fast controller achieves a fast response time to disturbances. A key feature of our controller is its ability to reject feedback of the ripple on the dc-bus capacitor by actively canceling it, so that high bandwidth can be maintained without distorting the input current during steady state operation.



S. Nithya (ASP / EEE)

N. Dhinesh (4th year EEE)

V. Antony Paul (4th year EEE)

POET'S CORNER

‘MEMORIES’

*Millions Of Memories. Thousands
Of Jokes. Hundreds Of Secrets. Just
One Classroom **I**n The college ♡*

K. Rebekha
3rd year EEE

‘CHANCE’

*Take every chance in life, because
some things only happen once.*

R. Sujith
Final year EEE

ONE WHO I BELIEVE

*If I feel hurt, you're the someone who suffer the most,
If i am happy u thumb with excitement than me,
If I need to forget something you can bury it deep down;
And your reaction and thoughts do never lie!
Yeah, it's you my heart... You do never lie!*

D. Kani Rajan
Final Year EEE

*I will be there to protect you as the eyelids
protect the eyes*

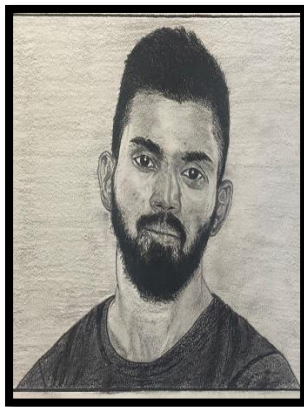
V. Antony Paul
Final year EEE



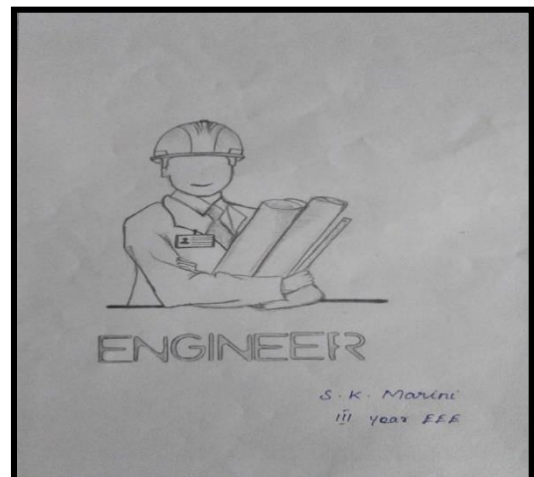
Abinaya Shree
2nd year EEE



N. Predyusha
2nd year EEE



V. Antony Paul
Final Year EEE



S. K. Marini
3rd year EEE



CLICK-O-CLICKS



B. Roshan
3rd year EEE

D. Kani Rajan
Final year EEE



OUR STUDENT'S INDUSTRIAL VISIT REPORT

ALL INDIA RADIO KUMARI FM 101

INTRODUCTION

Radio broadcasting is transmission of audio (sound), sometimes with related metadata, by radio waves to radio receivers belonging to a public audience. In terrestrial radio broadcasting the radio waves are broadcast by a land-based radio station, while in satellite radio the radio waves are broadcast by a satellite in Earth orbit. To receive the content the listener must have a broadcast radio receiver (radio). Stations are often affiliated with a radio network which provides content in a common radio format, either in broadcast syndication or simulcast or both. Radio stations broadcast with several different types of modulation: AM radio stations transmit in AM (amplitude modulation), FM radio stations transmit in FM (frequency modulation), which are older analog audio standards, while newer digital radio stations transmit in several digital audio standards: DAB (digital audio broadcasting), HD radio, DRM (Digital Radio Mondiale). Television broadcasting is a separate service which also uses radio frequencies to broadcast television (video) signals.



DESCRIPTION

Air today has a network of 237 broadcasting centers with 149 medium frequency (MW), 54 high frequency (SW) and 177 FM transmitters. The coverage is 91.85% of the area, serving 99.18% of the people in the largest democracy of the world. AIR covers 24 Languages and 146 dialects in home services. In external services, it covers 27 languages, 17 national and 10 foreign languages. ALL INDIA RADIO

The Directorate General, All India Radio functions under Prasar Bharati. Director General is the Head of the Department and is responsible for the overall administration and supervision of the entire AIR network. In performance of his duties and functions, the Director General, AIR is assisted by officers of the following wings. Additional Director Generals (ADGS) at the Headquarters and in the Regions assist the Director General in proper supervision of the stations. The Headquarters of the Regional ADGs are situated at Kolkata (Eastern Region), Mumbai (Western Region-I), Lucknow (Central Region-I), Bhopal (Central Region-II) and Guwahati (North Eastern Region), Chennai (South Region-I), Bangalore (South Region-II), Delhi (North Region-1) and Chandigarh (North Region-II).

Another office of ADG is to be set-up at Ahmedabad (Western Region-II).



It's first local radio station in India, its surrounding to Kanyakumari, Tirunelveli, and Trivandrum district, local conversation, agriculture programs there, cinema oriented songs broadcast, now it's modernized in FM, no digital only mono track sounds available, now the days the program announcement quality is good.

Good communication to all the people in Kanyakumari District and nearby Kerala and south Tirunelveli district people.



K. Sathya Sivan
3rd year EEE

INDUSTRIAL VISIT 220 KV OTTAPIDARAM

The department of Electrical Engineering, Rohini college of Engineering and technology, Palkulam Kanyakumari had organized a one day Industrial visit Ottapidaram substation erection, Thoothukudi on 25th March, 2022. There were 55 students from BE 2nd year morning shift along with four teaching faculties.

Objective of visit.

Our Main purpose for this visit on to be Familiar with industrial environment and to get practical knowledge of electrical power transmission and distribution. Being second year students we will get to know about basic industrial functioning of power transmission and distribution. Students will also get familiar with transformer Maintenance, circuit breaker, transformer insulator, busbar, protective relays, Lightning arresters, load break switches, Scada systems, current and Voltage Transformer and Battery room.



N. Nava Ramya
2nd year EEE

**INPLANT TRAINING ON
TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LTD,
230/11KV SUBSTATION, CHENBAGARAMAN PUDUR.**

ABSTRACT

The requirement of power is very much essential for the development of any country. The power/Load flow analysis is a technique to determine the characteristic of the power system under stable condition and to evaluate the various operating states of an existing system. The Load flow analysis of a 230/110 kV substation in an Indian Utility system using Electrical Transient Analyzer Program (ETAP) is carried out to surmount the problem of under-voltage. To overcome the problem of under-voltage, the optimal size and location of capacitor/reactors are identified.

SUBSTATION

The present-day electrical power system is A.C. i.e. electrical power is generated, transmitted & distributed in the form of the alternating current. The electric power is produced at power plant stations which are located at favorable places generally quite away from the consumers. It is delivered to the consumers through a large network of transmission and distribution.

TRANSFORMER



Transformer is a static machine, which transforms the potential of alternating current at same frequency. It means the transformer transforms the low voltage into high voltage & high voltage to low voltage at same frequency.

It works on the principle of static induction principle. When the energy is transformed into a higher voltage, the transformer is called step up transformer but in case of other is known as step down transformer.

BATTERY

“Battery is the heart of the substation.”



A substation battery charger ensures all the essential electrical systems in a substation continue to operate in the event of a power outage. An absence of an electrical supply could result in damage to equipment and personnel.

CIRCUIT BREAKER



In such circuit breaker, sulfur hexafluoride (SF₆) gas is used as the arc quenching medium. The SF₆ is an electronegative gas and has a strong tendency to absorb free electrons. The SF₆ circuit breaker have been found to a very effective for high power and high voltage service. SF₆ circuit breakers have been developed for voltage 115 KV to 230 KV, power rating 10 MVA.

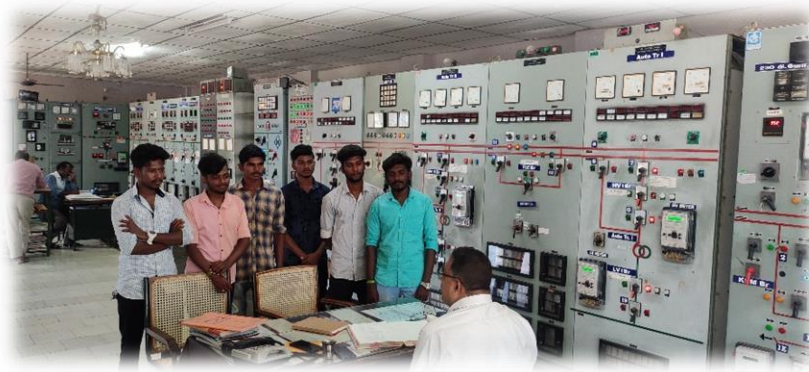
It consists of fixed and moving contacts. It has chamber, contains SF₆ gas. When the contacts are opened, the mechanism permits a high pressure SF₆ gas from reservoir to flow towards the arc interruption chamber. The moving contact permits the SF₆ gas to let through these holes.

RELAY



A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals. The switch may have any number of contacts in multiple contact forms, such as make contacts, break contacts, or combinations.

CONTROL ROOM



The various switching actions like auto reclosing of line circuit breakers, operation of sectionalizing switches, on-load tap changers are performed by remote command from control room. The other sequential operations like load transfer from one bus to another, load shedding etc. are also taken care by control centre.

CONCLUSION

Now from this report we can conclude that electricity plays an important role in our life. We are made aware of how the transmission of electricity is done. We too came to know about the various parts of the Substation system.

A.Jeeva
Final Year EEE

The students who undergo training/Internships

NAME	DAYS	SUBSTATION
D. Kani Rajan	1 Week	230/110 kv SR Puthoor SS
N. Dhinesh pon kumar	1 Week	230/110 kv SR Puthoor SS
V. Antony Paul	1 Week	230/110 kv SR Puthoor SS
A. Jeeva	1 Week	230/110 kv SR Puthoor SS
R. Sujith	1 Week	230/110 kv SR Puthoor SS
N. Pon Mathavan	1 Week	230/110 kv SR Puthoor SS
M. Rathish	1 Week	230/110 kv SR Puthoor SS

The students who undergone workshop

NAME	UNIVERSITY
K. Sathiya Sivan	NI Universiy of Higher education
S. Manikanda prabhu	NI Universiy of Higher education
S. Pravin	NI Universiy of Higher education
T. Arul Raj	NI Universiy of Higher education
B. Mathan	NI Universiy of Higher education
S. Manikandan	NI Universiy of Higher education

NAME	UNIVERSITY
K. Sathiya sivan	Kongu college of engineering in Erode
H.V. Gokul Krishna	Kongu college of engineering in Erode
S. Muthukutty	Kongu college of engineering in Erode
B. Mathan	Kongu college of engineering in Erode
S. Prasath	Kongu college of engineering in Erode
M. Stanson	Kongu college of engineering in Erode
T. Arul raj	Kongu college of engineering in Erode
S.A. Basil	Kongu college of engineering in Erode
G. Manikandan	Kongu college of engineering in Erode

The students who got placed in campus drive



