



**SRI RAAJA RAAJAN**  
**COLLEGE OF ENGINEERING AND TECHNOLOGY**

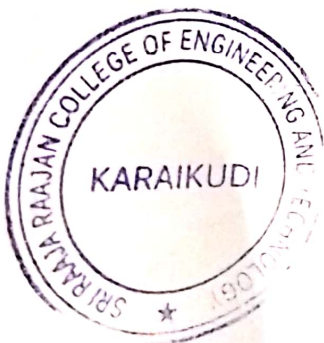
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**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING**

**ACADEMIC YEAR (2021-2022)**

**CONFERENCE**

**INTERNATIONAL CONFERENCE  
EMERGING TRENDS IN ELECTRONICS  
AND COMMUNICATION ENGINEERING  
(ICETECE'21)**





**SRI RAAJA RAAJAN  
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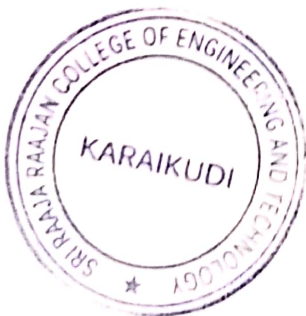
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**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING**

**ACADEMIC YEAR (2021-2022)**

**CONFERENCE-INVITATION**

**INTERNATIONAL CONFERENCE  
EMERGING TRENDS IN ELECTRONICS  
AND COMMUNICATION ENGINEERING  
(ICETECE'21)**





**SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY  
(APPROVED BY AICTE NEW DELHI & AFFILIATED TO ANNA UNIVERSITY )  
AMARAVATHIPUTHUR, KARAIKUDI-630 301.**

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
ORGANIZED  
INTERNATIONAL CONFERENCE ON  
EMERGING TRENDS IN ELECTRONICS & COMMUNICATION  
ENGINEERING (ICETECE'21)**

**INAUGURAL ADDRESS**

**DR. C.SUBRAMANI,**  
ASSOCIATE PROFESSOR, DEPARTMENT OF EEE,  
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY,  
KATTANKULATHUR, CHENGALPATTU.

**PRESIDENCIAL ADDRESS**

**DR. S.SUBBIAH**  
CHAIRMEN & ADVISOR  
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AMARAVATHIPUDUR.

**RESOURCE PERSON**

**DR. R.SORNA KEERTHI,**  
HEAD OF THE ECE DEPARTMENT,  
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RAMANATHAPURAM.

**PROF.DR.M.MURUGAPPAN,**  
KUWAIT COLLEGE OF SCIENCE AND TECHNOLOGY,  
DEPARTMENT OF ECE,  
KUWAIT.

**MR.T.N.BALAJI**  
HOD / ECC

**DR.AL.MAYILVAGANAN**  
PRINCIPAL

**DATE : OCTOBER 11TH 2021, TIME: 10.30 A.M  
VENUE : COLLEGE CAMPUS SEMINAR HALL**



**SRI RAAJA RAAJAN  
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Website: [www.srirajaraajan.in](http://www.srirajaraajan.in), E-mail: [srrcet2010@gmail.com](mailto:srrcet2010@gmail.com), Ph: 04565-234230

**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING**

**ACADEMIC YEAR (2021-2022)**

**CONFERENCE-BROCHURE**

**INTERNATIONAL CONFERENCE  
EMERGING TRENDS IN ELECTRONICS  
AND COMMUNICATION ENGINEERING  
(ICETECE'21)**



## INAUGURAL ADDRESS

**Dr.C.Subramani,**  
Associate Professor, Department of EEE,  
SRM institute of science and Technology,  
Kattankulathur,Chengalpattu.

## PRESIDENCIAL ADDRESS

**Dr.S.SUBBIAH**

Chairmen & Advisor

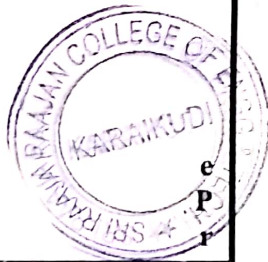
Sri Raaja Raajan College of Engineering and  
Technology,

Amaravathipurur.

## RESOURCE PERSON

**Dr.R.Sorna Keerthi,**  
Head of the ECE Department,  
Anna University of Engineering-Ramnad  
Campus,  
Ramanathapuram.

**Prof.Dr.M.Murugappan,**  
Kuwait College of Science and Technology,  
Department of ECE,  
Kuwait.



## STEERING COMMITTEE

### CHIEF PATRONS

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and Technology.

### PATRONS

**Dr.AL.MAYILVAHANAN,**

Principal, Sri Saaja Raajan Colleeg of Engineering  
and Technology.

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**Prof .MRS.K.ISABELLA RANI,**

Head, Dept. of ECE

### COORDINATOR

**Mr.T.N.Balaji,**  
AP/ECE

**Mr.S.Vengatesan**  
AP / ECE

**Mrs.P. Mariya Johna**  
AP/ECE


### REGISTRATION

Students(UG/PG): Rs.1000 /-

Faculty: Rs.1500/-

Research Scholars: Rs.1500/-

Last Date for Registration: 10.10.2021

  
Sri Raaja Raajan College of Engr. & Tech.  
Amaravathipurur, Karaikud  
Sivagangai Dist. Tamil Nadu

## INTERNATONAL CONFERENCE

On

Emerging Trends in Electronics &  
Communication Engineering

(ICETECE'21)

Dated on 11.10.2021



Organized by

DEPARTMENT OF ELECTRONICS AND  
COMMUNICATION ENGINEERING

Dated on

11-10-2021

**SRI RAAJA RAAJAN COLLEGE OF  
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(Approved by AICTE & Affiliated to Anna University)  
Amaravadipurur, Karaikudi- 630301.

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## ABOUT SRR CET

**SRI RAAJA RAAJAN COLLEGE OF ENGINEERING & TECHNOLOGY** is a technical institution promoted by Sri Muthumari Educational Trust, established in the year 2010. The college is approved by All India Council of Technical Education (AICTE), New Delhi and is affiliated to Anna University, Chennai.

## COURSES OFFERED

### UG Programme

- B.E. Computer Science & Engineering
- B.E. Electronics & Communication Engineering
- B.E. Electrical & Electronics Engineering
- B.E. Mechanical Engineering
- B.E. Civil Engineering

### PG Programme

- M.E.(Computer Science & Engineering)

## THE DEPARTMENT

The Department of ECE was started in the year 2010 and offers B.E degree programme. The department has various laboratories and well-qualified and experienced faculty. The department has MoU signed with leading companies.



## ABOUT THE CONFERENCE

The International Conference is organized by Department of ECE associated with IBR. Our goal is to change the world by Visions of Emerging Electronics Technologies include nanoelectronics, artificial intelligence, smart and autonomous systems, cyber security, 5G quantum computing, Silicon Carbide electronics robotics, cognitive science, education bioelectronics, printed electronics, gas sensing

It is great pleasure for me to meet together and share the new ideas on opening questions and exciting results with all the great scientists, undergraduate, postgraduate, PhD students, postdoctoral fellows, researchers engineers, academicians as well as industrial professionals from all over the world who are interested in Electronics Communication Blockchain and Internet of Things and their current applications.

## REGISTRATION FORM

### INTERNATIONAL CONFERENCE

On

**Emerging Trends in Electronics & Communication Engineering (ICETECE'2**

**Dated on 11.10.2021**

Name :

Designation :

Institution :

Male/Female :

Educational Qualifications:

Experience :

Mailing Address :

Phone :

Fax :

Email :

Accommodation required: Yes/ No

Details of Registration fee

DD No. :

Dated :

Drawn on :

Signature of Applicant





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**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING**

**ACADEMIC YEAR (2021-2022)**

**CONFERENCE-REPORT**

**INTERNATIONAL CONFERENCE  
EMERGING TRENDS IN ELECTRONICS  
AND COMMUNICATION ENGINEERING  
(ICETECE'21)**





# SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY

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## INTERNATIONAL CONFERENCE EMERGING TRENDS IN ELECTRONICS AND COMMUNICATION ENGINEERING (ICETECE'21) REPORT

International Conference On **Emerging Trends On Electronics And Communication Engineering** held on October 11,2021 at Sri Raaja Raajan College Of Engineering and Technology ,Amaravathipudur, Karaikudi.

International Conference on **Emerging Trends On Electronics And Communication Engineering** organized by Department Of Electronics And Communication Engineering ,Sri Raaja Raajan College Of Engineering And Technology.The International Conference was attended by Research Scholars ,Faculty Members And Students . The Occasion was marked by Department Of Electronics And Communication Engineering.The Principal Of SRRCET Dr.A.L.Mayilvaganan gave welcome Address And Dr.C.Subramani,Associate Professor Department Of EEE,SRM Institute Of Engineering And Technology ,Chengalpattu in his Inaugural Address appraised the Participants of the efforts taken by SRRCET in Electronics And Communication Engineering during the year and gave them the presentation about The Trends Of ECE .Chief Guest Mrs.Dr.R.Sornakeerthi,Head Of The Ece Department Anna University-Ramnad Campus Inaugurate The Conference.On Resource Person Address Prof.Dr.m.Murugappan,Kuwait College Of Science And Technology,Department Of Ece,Kuwait motivate the students to involve in research in Recent Trends and gave the presentation about the Trends .He also gave demonstration With Internet Of Things .

After that the Session the Certificates are distributed to those who are attended the International Conference.Finally Mr.T.N.Balaji Head of department gave vote of



  
PRINCIPAL

Sri Raaja Raajan College of Engg. & Tech  
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**DEPARTMENT OF ELECTRONICS &  
COMMUNICATION ENGINEERING  
ACADEMIC YEAR (2021-2022)**

**CONFERENCE-SOUVENIR**

**INTERNATIONAL CONFERENCE  
EMERGING TRENDS IN ELECTRONICS  
AND COMMUNICATION ENGINEERING  
(ICETECE'21)**





# **SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY**

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Amaravathiputhur, Karaikudi - 630301*

**INTERNATIONAL CONFERENCE**

**On**

**EMERGING TRENDS IN ELECTRONICS &  
COMMUNICATION ENGINEERING**

**ICETECE'21**

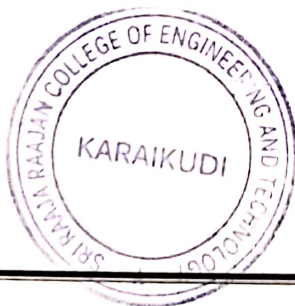
*11<sup>th</sup> October 2021*

## **SOUVENIR**



*Organized by*

**Department of ECE**



## MESSAGE



I am glad to know that the Department of Electronics and Communication Engineering of Sri Raaja Raajan College of Engineering and Technology, Karaikudi, is organizing a International Conference on the title **Emerging Trends in Electronics & Communication Engineering (ICETECE'21)** on 11<sup>th</sup> October 2021. I feel that this International Conference would help students to have interactions with experts in the field of Electronics students to enhance their knowledge.

My best wishes to all the staff and students who have taken efforts to make this International Conference a successful event.

**Dr.S.Subbiah, Ph.D.,  
Former Vice Chancellor,  
Alagappa University, Karaikudi.**



## **MESSAGE**

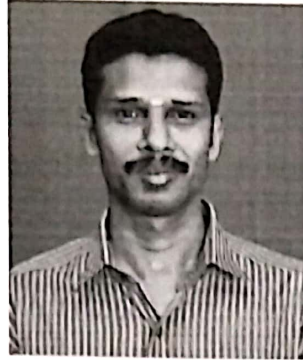


It gives me immense pleasure to be a part of this hosting team of International Conference on Emerging Trends in Electronics & Communication Engineering (ICETECE'21) at 11<sup>th</sup> October 2021.. The conference intends to bring together Scientists, Engineers and Practitioners from different disciplines to discuss concerns related to various techniques in science and technology.

I take this opportunity to welcome all the delegates of the conference. On behalf of whole ICETECE'21 team, I would like to thank all the authors, sponsors and keynote speakers for their support and co-operation.

**Dr.A.L.Mayilvahanan**  
**Principal**  
**SRRCET, Karaikudi**

## MESSAGE



It gives me immense pleasure that Sri Raaja Raajan College of Engineering is organizing an International Conference on Emerging Trends in Electronics & Communication Engineering (ICETECE'21) at 11<sup>th</sup> October 2021 .It provides an opportunity for meeting of International Researchers, Engineers, Scientists and specialists in the various research and development fields of Engineering and Technology.

The conference offers a premise for global experts to gather and interact intensively on the topics of ECE. I hope eminent speakers will cover the theme from different perspectives. I am privileged to say that this conference will definitely offer suitable solutions to the global issues. Eventually I express my special thanks and appreciation to all. I wish (ICETEECT'21) all the best for its success.

**Dr.C.Subramani,**  
**Associate Professor,**  
**Department of EEE,**  
**SRM institute of science and Technology,**  
**Kattankulathur,Chengalpattu.**



## **MESSAGE**

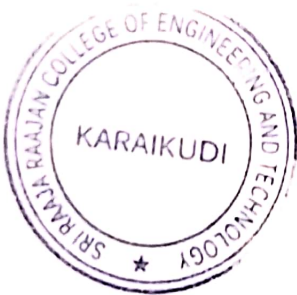


I am happy to note that the Department of ECE is organizing a International Conference on **Emerging Trends in Electronics & Communication Engineering (ICETECE'21)** on **11<sup>th</sup> October 2021**.

I am sure that this International conference will give an opportunity to the students of ECE to interact with other students and faculty members, thereby furthering their knowledge.

I congratulate all the students and faculty members of the department in organizing this useful academic programme.

**Dr.R.Sorna Keerthi,**  
**Head of the ECE Department,**  
**Anna University of Engineering-Ramnad Campus,**  
**Ramanathapuram.**



## MESSAGE

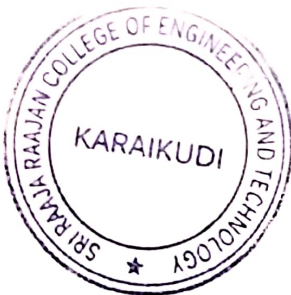


Warm and Happy greeting to all. I am immensely happy that Department of ECE & EEE is organizing a International Conference on **Emerging Trends in Electronics & Communication Engineering (ICETECE'21)** on 11th October 2022 and is going to present a collection of various technical papers in the proceedings.

Under the guidance of Management, college continues to march on the way of success with confidence. Sharp, clear vision and precise decision making powers of management has benefited college to say competitive.

*"Success is sweet. But the secret behind the success is sweat"*. So I take this opportunity to congratulate the HoD's, faculties and Students for their efforts to make this Conference a grand success.

**Prof. Dr. M. Murugappan,**  
**Kuwait College of Science and Technology,**  
**Department of ECE,**  
**Kuwait.**



## **MESSAGE**



My warm wishes and greetings to all of you,

The International Conference was conceived about a month ago. We are pleased to note that the response was highly encouraging from different institutions. I thank each of the participants personally for their sincere response.

I hope that the conference will help all the students to exchange their technical views and information in the field of Engineering. Kindly utilize this event to enhance the knowledge. I wish you all the best in all your endeavors in future.

I convey my sincere thanks to Our Advisor, **“Dr.S.Subbiah.,Principal Dr.A. Elango, Ph.D, FIE .,for extended support to organize this Conference.**

I whole heartedly thank all the staff members and students of Electronics and Communication Engineering for their cooperation and support for making this Conference as a Special event.

***“Inspiration is one thing & you can’t control it but hard work is what keeps the ship moving. Good luck means work hard. Keep up the good work”***

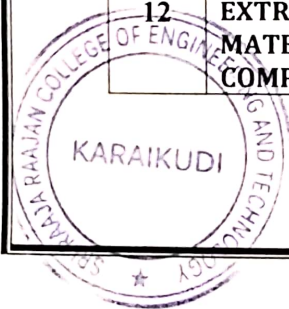
Head of the Department

**Mr.T.N.BALAJI. ME.,  
DEPARTMENT OF ECE,  
SRR CET.**



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## ***Optimizing Operation Indices Considering Different Types of Distributed Generation and Microgrids for Small Island Electrification.***

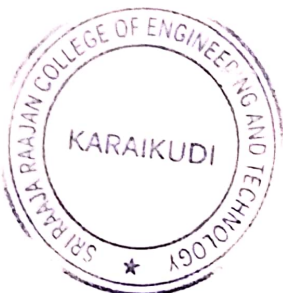
A.Sahayaraj<sup>1</sup>, Dr.S.Venkatanarayanan<sup>2</sup>

1 Superintending Engineer, TANGEDCO, Theni

2 Professor, K.L.N college of Engineering, Pottapalayam, Sivagangai

### **Abstract**

The need for independent power generation has increased in recent years, especially with the growing demand in microgrid systems. In a microgrid with several generations of different types and with all kinds of loads of variable nature, an optimal power balance in the system has to be achieved. This optimal objective, which results in minimal energy losses over a specific period of time, requires an optimal location and sizing of the distributed generations (DGs) in a microgrid. This paper proposes a new optimization method in which both optimal location of the DGs and their generation profile according to the load demand profile as well as the type of DG are determined during the life time of the DGs. This is also relevant to the small islands in developing countries where the present need is to have access to adequate supply of electricity. The research progress in the fields of distributed generation (DG) and micro-grid (MG) are summarized in this paper, which mainly focuses on the schemes of DG islanding detection, DG's relay protection as well as the control strategy of converters.



# An Internet of Things (IoT) based Joint Energy Auditing, Energy Conservation and Energy Management System for Industries.

<sup>1</sup> Venkatarao Mutyala

Doctoral Research Scholarvraomutyala@gmail.com

<sup>2</sup> S. Venkatanaryanan

<sup>2</sup> Professor, Department of Electrical and Electronics,

K.L.N. College of Engineering,

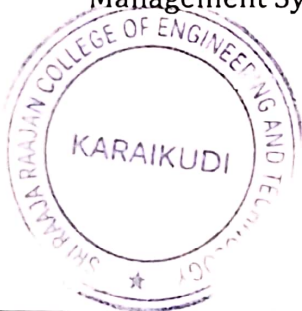
Affiliated to Anna University, Pottapalayam, Sivagangai Dist.

venjeyeee@gmail.com

## ABSTRACT

The Energy Consumption is strongly interrelated with the industrial sector, and it is integrated with Internet of Things (IoT) solutions for effective energy management, supporting decision making in the industries are key primary essentials for reducing the energy losses in the industries. The available systems still can be improved to increase the productivity of the systems. This research work will present an advanced Internet of Things based system for intelligent energy management in the industries for all the performance on energy consumption in Electrical systems, Fuel systems, Optimization, Thermal energy systems etc. A semantic framework would be introduced aiming at the unified and standardized modelling of the entity that constitutes the industry environment into the monitoring and control of Energy Consumption. Suitable Systems will be formed, aiming at the IoT based energy audit and management. In this context, an IoT based system would be implemented, which enhances the interactivity of the industry Energy Consumption and Energy Management Systems. The results from the energy audit will be monitored using IoT solutions. The Energy Audit focuses on Low investment, medium investment, and High investment possibilities by regular monitoring by which this would be supporting on Energy saving measures in the industries which will give the short term, medium term, and long-term benefits to the industries. The proposed system would broaden the existing approaches and integrates cross domain data functions such as the industrial data, energy consumption, energy bill, Energy tariff plans, weather forecast data and end user's performance to produce daily and weekly action plans for the energy end users. This research work emphasizes greater flexibility to accommodate new energy sources, better management of assets and operations, greater reliability, enhanced security, better customer service, and enablement of new business models and services etc.

**Keywords**—IoT based Energy Auditing System, Energy Conservation System and Energy Management System etc.,



## ECO FRIENDLY SMART CLASSROOM

Mrs.K.Isabella Rani, *Assistant Professor / ECE*

Susma.B, Vasantha Kumar.M , *IV YEAR-ECE*

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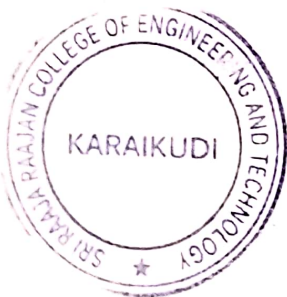
KARAIKUDI-630 301

### ABSTRACT

As we are growing in new era of advance technology with Petascale computing , high bandwidth of data transmission , big data storage and the next generation of digital world. It a high time to have smart and intelligent class rooms which will subside all the traditional way to teaching and learning easy and smart. Making students and teachers a witness of next generation of high computing and urbane digital devices.

The Smart and intelligent classroom will make the teaching process easy, cost effective and eco-friendly. With the help of gesture recognition (voice, facial, lip movement and eye tracking) the intelligent system will able to take its own decision over the lectures. Enhanced speech technology would help the student in converting the text into speech vice verse. The teachers using the enhanced intelligent tools and technique can directly write on Smart /Media board using his or her gesture, speech or pointing devices. Smart and intelligent teaching environment, will make students and teachers to access quality of information more quickly, effortless and perfectly.

**Keywords-** Gesture recognition , speech.



# REAL TIME IMPLEMENTATION OF SMART FAN CONTROL USING VOICE RECOGNITION

Mrs.V.Gowsalya, Assistant Professor / ECE

Arunadevi.A, Subasowkiya.P, Gayathri.S. IV YEAR-ECE

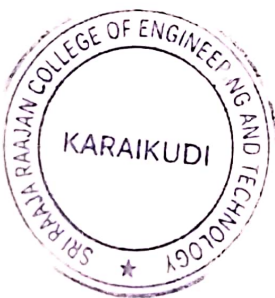
SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY

KARAIKUDI-630 301

## ABSTRACT

Our project aims at designing an smart fan which could effective energy management. The power shortage in third world countries is managed by alternate energy sources including uninterrupted power supplies that charge batteries when line voltage is available. Inverters available in the market have output voltage waveform that do not give pure sine wave and these modified sine waves are non-linear and high frequency components that damage appliances connected to them, including fan dimmer.

This paper presents a IOT enabled fan dimmer with a modified power electronics circuit that shows superior performance when connected with the UPS. We overall project was divided into two components. First was the development of electric which controls the speed of fan and has suppressed humming sound. The second part was the integration of micro controller and Wi-Fi modem to give the Internet of Things functionality to the project.



## IOT BASED SMART LIGHT SYSTEM

Mrs.K.Isabella Rani, *Assistant Professor / ECE*

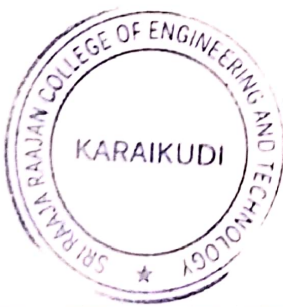
PANDI ARASI.T, DHARANI.C, NITHIYA. VR, *IV YEAR-ECE*

SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY,

KARAIKUDI-630 301

### ABSTRACT

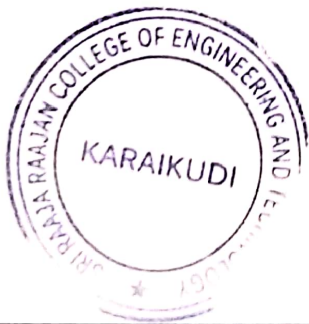
Our project aims at designing an smart light which could effective energy management. The power shortage in third world countries is managed by alternate energy sources including an interrupted power supplies that charge batteries when line voltage is available. Inverters available in the market have output voltage waveform that do not give pure sine wave and these modified sine waves are non-linear and high frequency components that damage appliances connected to them, including light dimmer. This paper presents a IOT enabled light dimmer with a modified power electronics circuits that shows superior performance when connected with the UPS . we overall project was divided into two components. The first development was electric which controls the speed light and has suppressed humming sound. The second part was the integration of micro controller and Wi-Fi modem to give internet of things functionality of the project.



**UNMANNED SUBMARINE**  
Tata Pravin, Manikandan  
KIT AND KIM TECHNICAL CAMPUS

**ABSTRACT**

freezing temperatures, extremely high pressure and lack of light etc., In deep sea research used for the High-Resolution Cameras, Thermometers, pressure meters and seismographs and other instrumental used for deep sea exploration. This is called the "Remotely Operated Underwater Vehicles (ROUV)". Remotely Operated Underwater Vehicles is subclass of UUVs with the primary purpose of replacing humans for underwater tasks due to the difficult underwater conditions. I built the Unmanned Underwater Vehicles (UUV) are submersible vehicles that can operate underwater without a human occupant. In Li-Fi (Light Fidelity) Technology used in UUV because light can penetrate deep water. Li-Fi Technology need to operate with ships and humans in particular range. We are replace the remotely operate with the any distance and any place on into the deep sea research can do it. Humans have a difficult time exploring the deep sea because of





# **AUTOMATIC FERTILIZER SPRAYER USING MACHINE LEARNING ALGORITHM**

Mr.S.SELVAKUMAR , *Assistant Professor/ECE*

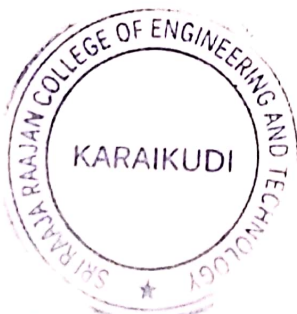
T.V.THIRISA , S.PADMAPRIYA V.,PRIYADHARSHINI A.,R.PADMAPRIYA- *IV YEAR ECE*

K.L.N.COLLEGE OF ENGINEERING

MADURAI.

## **ABSTRACT**

Techniques to optimize the application of fertilizer in agricultural fields. The system would consist of a Raspberry Pi camera that captures images of the plants, which are then processed using a machine learning algorithm. The algorithm would analyse the images and use the data to generate a customized fertilizer spraying plan that takes into account the specific needs of each area of the field. The sprayer would be fully automated, with the algorithm controlling the flow rate and direction of the fertilizer, ensuring that the correct amount is delivered precisely where it is needed. This would reduce the amount of fertilizer needed, decrease labour costs, and increase crop yields, making it an attractive solution for farmers. The integration of the Raspberry Pi camera would enhance the system's ability to identify and respond to changes in soil and crop conditions in real-time, resulting in more efficient and effective fertilizer application. An automatic fertilizer sprayer using machine learning algorithm and Raspberry Pi camera would describe a system that incorporates computer vision and machine learning



# INVESTIGATION OF TWO DIMENSIONAL PHOTONIC CRYSTAL BASED ALL OPTICAL LOGIC GATES

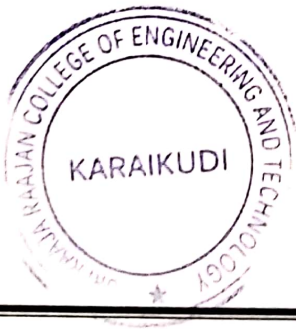
M.KARTHIKA , *M.E-COMMUNICATION SYSTEMS*

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY

PUDUKOTTAI

## ABSTRACT

crystals can be made of layers deposited or stuck together. Two-dimensional ones can be made by photolithography, or by drilling holes in a suitable substrate. In this proposed work the normalized power efficiency, contrast ratio and the minimum maximum delay time as calculated A photonic crystal is a periodic optical nanostructure that affects the motion of photons in much the same way that ionic lattices affect electrons in solids. Photonic crystals occur in nature in the form of structural coloration and animal reflectors, and, in different forms, promise to be useful in a range of applications. Combinational logic also referred to as time-independent logic is a type of digital logic which is implemented by Boolean circuits, where the output is a pure function of the present input only. Photonic crystals can be fabricated for one, two, or three dimensions. One-dimensional photonic.

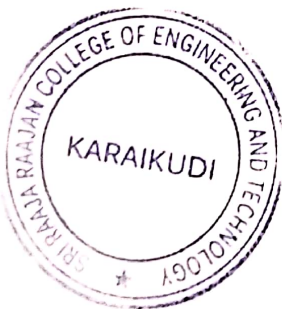


# COMPACT, TWO-PORT, SLOT, ANTENNA FOR DUAL-BAND WIFI 2x2 MIMO APPLICATIONS

R.NIVETHA , *M.E-COMMUNICATION SYSTEMS*  
MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY  
PUDUKOTTAI

## ABSTRACT

This paper presents a novel planar compact two port slot antenna for 2.45GHz/5.5GHz dual-band WiFi 2x2 MIMO applications. The antenna's two ports are very well matched in the two bands of interest with a good isolation (respectively -11.7dB in the two bands ) and radiation efficiency (above 96%). The antenna different parameters are presented and thoroughly analyzed revealing a satisfactory performance



# PERFORMANCE ANALYSIS AND INTER SATELLITE OPTICAL WIRELESS COMMUNICATION SYSTEM (ISOWC)

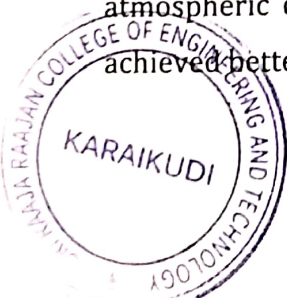
USHA .PL, M.E-COMMUNICATION SYSTEMS

MOUNTZION COLLEGE OF ENGINEERING AND TECHNOLOGY

PUDUKOTTAI

## ABSTRACT

Space Optical (FSO) Communication is the transmission of data using optical beam through free space. It requires the line of sight condition to be maintained between the transmitter and receiver in order to transmit data. This work aims to The importance of free-space optical (FSO) communication has increased during the last decade, introducing its unique features such as its high data rate, license-free spectrum, ease of deploy ability and low power consumption. In the future, communication between low earth orbit (LEO) and geostationary earth orbit (GEO) satellites will be commonly established by using inter satellite optical wireless communication (ISOWC) systems. That enables GEO satellites to relay information to and from LEO satellites and fixed Earth stations that otherwise cannot transmit/receive data permanently. ISOWC systems are the most effective application of the FSO, and they will be favorited Free shortly because of their features. In this work, we established an ISOWC between GEO and LEO satellites at a distance of 45000kmto achieve a target bit error rate (BER) equal to  $10^{-6}$ . Furthermore, we proposed an ISOWC system with suitable operating wavelengths. Physical techniques such as the multi-input multi output (MIMO) technique and a wave division multiplexing (WDM) technique are employed. The performance of the proposed wireless optical communication is compared against the literature in terms of visibility distance, quality factor, BER, and Eye diagram at different atmospheric conditions. The simulation results have shown that the proposed work has achieved better performance.



## NEW DESIGN OF 4 × 2 PHOTONIC CRYSTAL ENCODER USING RING RESONATOR

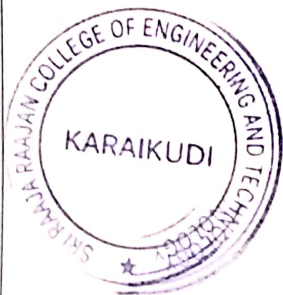
S.MATHIVATHANI, *M.E-COMMUNICATION SYSTEMS*

MOUNT ZION COLLEGE OF ENGINEERING AND TECHNOLOGY

PUDUKOTTAI

### ABSTRACT

A photonic crystal is a periodic optical nanostructure that affects the motion of photons in much the same way that ionic lattices affect electrons in solids. Photonic crystals occur in nature in the form of structural coloration and animal reflectors, and, in different forms, promise to be useful in a range of applications. Combinational logic also referred to as time-independent logic is a type of digital logic which is implemented by Boolean circuits, where the output is a pure function of the present input only. Photonic crystals can be fabricated for one, two, or three dimensions. One-dimensional photonic crystals can be made of layers deposited or stuck together. Two-dimensional ones can be made by photolithography, or by drilling holes in a suitable substrate. In this proposed work the normalized power efficiency, contrast ratio and the minimum maximum delay time as calculated.



# EXTRACTING FETAL ECG SIGNALS FROM MATERNAL ECG SIGNALS USING INDEPENDENT COMPONENT ANALYSIS

T.Kameswaran, M.E Applied Electronics

DHAANISH AHMED COLLEGE OF ENGINEERING

## ABSTRACT

This letter describes a fast and very simple algorithm for estimating the fetal electrocardiogram (FECG). The technique of Independent Component Analysis (ICA) can be used to separate out the FECG, which is extremely low voltage, from the maternal ECG (MECG), and from other unwanted background interferences, such as the electrical activity produced by the uterus muscles. The ICA method is based on blind source separation. It is a method of extracting each independent signal component from the observed signals which are generated by the linear mixing of mutually independent non-Gaussian signals. Extraction is based on independent component analysis, but we substitute its computationally demanding calculations for a much simpler procedure.

The resulting method consists of two steps:

- 1) A dimensionality reduction step
- 2) A computationally light post processing stage used to enhance the FECG signal.

## Keywords:

Blind source separation, Fetal electrocardiogram extraction, Independent Component Analysis.



# FPGA IMPLEMENTATION OF PAGE ENABLED BIT BASED REGEX SIGNATURES DETECTION

NOOR FARZANA.M

DHAANISH AHMED COLLEGE OF ENGINEERING

## ABSTRACT

In many years the most common technique for pattern matching in intrusion detection systems is the use of regular expressions and software based system has been used for server protection. But it can only support modest throughput. In our project, we are enhancing Hardware based Network Intrusion Detection System to achieve better performance and full fill the demands of high rate internet speed and also the need of increased network security. NIDS attempt to detect and prevent attacks from the network using pattern-matching rules in a way similar to anti-virus software. Here we segment the complex regex pattern into multiple non-trivial tokens based on type of token. NIDS is cost effective since it is proposed with memory-efficient parallel string matching scheme. In order to reduce the number of state transitions, the finite state machine tiles in a string matcher adopt bit-level input symbols. Here we are adding the variable clock rate based system for the multi-rate clock synchronization in order to support variable rate incoming packet rates. The input intrusions are divided into pages and each of the incoming pages will be in variable rate. Here we analyze the major synchronization concern over clock mismatch with major cases. And finally the bit matching efficiency of proposed system is verified with variable rate pattern match and gated clock system through exhaustive test bench simulation. Through EDA tool based hardware synthesis is carried out for FPGA hardware implementation.



# PREVENT THE TRAIN DELAY USING MIWI COMMUNICATION

Janaki Raman N

Dhaanish Ahmed College of Engineering

## ABSTRACT

In this project we are going to prevent the train delay using MIWI communication. MIWI is a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4-2003 standard for wireless personal area networks such as wireless headphones connecting with cell phones via short-range radio. MIWI is targeted at radiofrequency (RF) applications networking. Train accidents occur normally due to safety violations resulting from 'human errors or limitations' and 'equipment failures' losing precious lives.

When trains run on railway tracks they follow rules of operations in which safety plays a very important role . To make this rule work operation of trains uses signaling to control movement of trains on tracks and divides tracks into several sections which are protected by the signals.





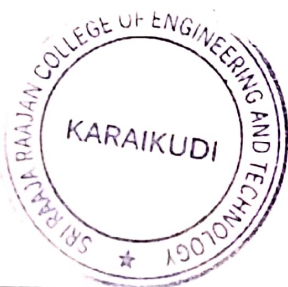
## Bio-medical in Image Processing

Shahana Yasmin A

Dhaanish Ahmed college of Engineering

### ABSTRACT

Medical imaging is the technique and process of creating visual representations of the interior of a body for clinical analysis and medical intervention. Medical imaging seeks to reveal internal structures hidden by the skin and bones, as well as to diagnose and treat disease. Medical imaging also establishes a database of normal anatomy and physiology to make it possible to identify abnormalities.



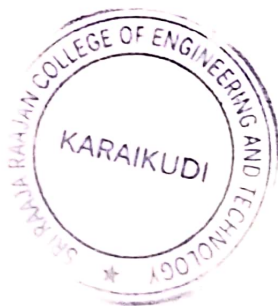
# ROBUST PALM VEIN PATTERN RECOGNITION SYSTEM BASED ON HYBRID TEXTURE DESCRIPTORS

Pachaiammal D

Dhaanish Ahmed college of Engineering

## ABSTRACT

The project presents robust palm vein recognition using hybrid texture descriptors such as discriminative robust local ternary pattern and Weber's local descriptor for improving the recognition accuracy. The texture of the blood vessels of different individuals has been proven to be distinctive even among identical twins. DRLTP is used to provide the shape and contrast invariant features of an object. WLD provides details about illumination changes between the pixels. Euclidean distance will be used to match the features of test and original templates for making decision on person biometric. Finally the performance of proposed algorithm will be measured with recognition accuracy and it proves that it provides better matching rate than prior approaches



# CONTACT LESS PALM VEIN RECOGNITION USING A MUTUAL FOREGROUND-BASED LOCAL BINARY PATTERN

PADMAPRIYA.A

DHAANISH AHMED COLLEGE OF ENGINEERING

## ABSTRACT

Local binary pattern (LBP) is popular for the texture representation owing to its discrimination ability and computational efficiency, but when used to describe the sparse texture in palm vein images, the discrimination ability is diluted, leading to lower performance, especially for contact less palm vein matching. In this paper, an improved mutual foreground LBP method is presented for achieving a better matching performance for contact less palm vein recognition. First, the normalized gradient-based maximal principal curvature algorithm and k-means method are utilized for texture extraction, which can effectively suppress noise and improve accuracy and robustness. Then, an LBP matching strategy was adopted for similarity measurements on the basis of extracted palm veins and their neighborhoods, which include the vast majority of useful distinctive information for identification while eliminating interference by excluding the background. To further improve the LBP performance, the matched pixel ratio was adopted to determine the best matching region (BMR). Finally, the matching score obtained in the process of finding the BMR was fused with results of LBP matching at the score level to further improve the identification performance. A series of rigorous contrast experiments using the palm vein data set in the CASIA multi spectral palm print image database were conducted. The obtained low equal error rate (0.267%) and comparisons with the most state-of-the-art approaches demonstrate that our method is feasible and effective for contact less palm vein recognition.

**Index Terms**—Biometrics, palm vein recognition, local binary pattern, mutual foreground, principal curvatures, matched pixel ratio.



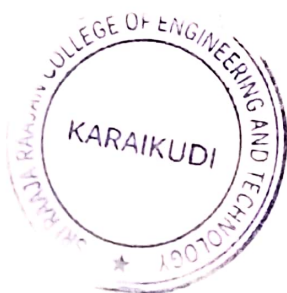
# ITERATIVE VESSEL SEGMENTATION OF FUNDUS IMAGES

POORNIMA K

DHAANISH AHMED COLLEGE OF ENGINEERING

## ABSTRACT:-

This project proposes an efficient fuzzy c-means clustering algorithm under Morphological Image Processing (MIP). Image processing is one of most growing research area these days and now it is very much integrated with the medical and biotechnology field. Image Processing can be used to analyze different medical and MRI images to get the abnormality in the image. Medical Image segmentation deals with segmentation of blood vessel segmentation algorithm using fundus images. It is an important process and a challenging problem due to noise presence in input images during image analysis. It is needed for applications involving estimation of the boundary of an object, classification of tissue abnormalities, shape analysis, contour detection. Segmentation determines as the process of dividing an image into disjoint homogeneous regions of a medical image. The amount of resources required to describe large set of data is simplified and is selected for tissue segmentation. In this project, this segmentation is carried out using K-means clustering algorithm for better performance. This enhances the tumor boundaries more and is very fast when compared to many other clustering algorithms. This paper produces the reliable results that are less sensitive to error.



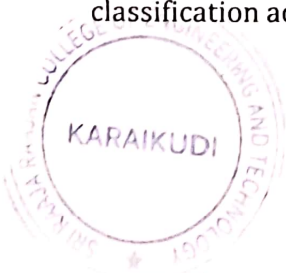
# AUTOMATIC SKIN LESION PREDICTION USING TEXTURE ANALYSIS AND PROBABILISTIC NEURAL NETWORK

PRIYANKA R

DHAANISH AHMED COLLEGE OF ENGINEERING

## Abstract

The project presents melanoma skin lesion classification with Radial basis (RB) type network classifier and hybrid features representation using color, Haralick and discriminative robust local binary pattern. Here, two different descriptors are utilized to extract the characteristics from various skin lesions and its fused features gives better classification with new approached probabilistic neural network. There are five different skin lesions commonly grouped as Actinic Keratosis (AK), Basal Cell Carcinoma (BCC), Melanocytic Nevus / Mole (ML), Squamous Cell Carcinoma (SCC), Seborrhoeic Keratosis (SK). The system will be used to classify the queried images automatically to decide the stages of abnormality. For this approach, automatic classifier PNN with RBF will be used for classification based on learning with some training samples of each stage. Here, the color features from HSV space and discriminate texture features such as energy, contrast, correlation and homogeneity are extracted. DRLBP represents an image features interms of histogram bins used to discriminate the local edges and texture pattern. The lesion diagnosis system involves two stages of process such as training and classification. An artificial neural network Radial basis types is used here as classifier. Feature selection is embedded in the hierarchical framework that chooses the most relevant feature subsets at each node of the hierarchy. The accuracy of the proposed neural scheme is higher in discriminating cancer and pre-malignant lesions from benign lesions, and it reaches an overall classification accuracy is high over five common classes of skin lesions, including two non-melanoma cancer types. This is the most extensive published result on non-melanoma skin cancer classification from color images acquired by a standard camera (non-ceroscopy). Final experimental result shows that the texture descriptors and classifier yields the better classification accuracy in all skin lesion stages.



# DETECTION AND ANALYSIS OF IRREGULAR STREAKS IN DERMOSCOPIC IMAGES OF SKIN LESIONS

RAFIQ AHMED K

DHAANISH AHMED COLLEGE OF ENGINEERING

## ABSTRACT

Irregular streaks are important clues for Melanoma (a potentially fatal form of skin cancer) diagnosis using dermoscopy images. This paper extends our previous algorithm to identify the absence or presence of streaks in a skin lesions, by further analyzing the appearance of detected streak lines, and performing a three-way classification for streaks, Absent, Regular, and Irregular, in a pigmented skin lesion. In addition, the directional pattern of detected lines is analyzed to extract their orientation features in order to detect the underlying pattern. The method uses a graphical representation to model the geometric pattern of valid streaks and the distribution and coverage of the structure. Using these proposed features of the valid streaks along with the color and texture features of the entire lesion, an accuracy of 76.1% and weighted average area under ROC curve (AUC) of 85% is achieved for classifying dermoscopy images into streaks Absent, Regular, or Irregular on 945 images compiled from atlases and the internet without any exclusion criteria. This challenging dataset is the largest validation dataset for streaks detection and classification published to date. The data set has also been applied to the two-class sub-problems of Absent/Present classification (accuracy of 78.3% with AUC of 83.2%) and to Regular/Irregular classification (accuracy 83.6% with AUC of 88.9%). When the method was tested on a cleaned subset of 300 images randomly selected from the 945 images, the AUC increased to 91.8%, 93.2% and 90.9% for the Absent/Regular/Irregular, Absent/Present, and Regular/Irregular problems, respectively.

**Index Terms**—Computer-aided diagnosis, dermoscopic structures, dermoscopy, graph, irregular streaks, melanoma, skin cancer, streak detection, texture analysis.



A handwritten signature in blue ink, appearing to read "Vijay".

PRINCIPAL

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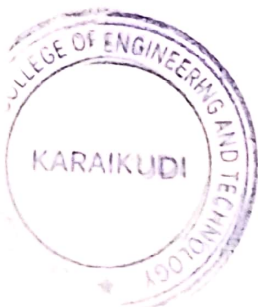
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**DEPARTMENT OF ELECTRONICS &  
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ACADEMIC YEAR (2021-2022)**

**CONFERENCE-CERTIFICATE**

**INTERNATIONAL CONFERENCE  
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*T.N. Balaji*

MR.T.N.BALAJI  
HOD / ECE

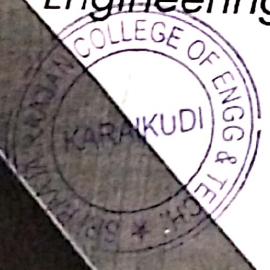


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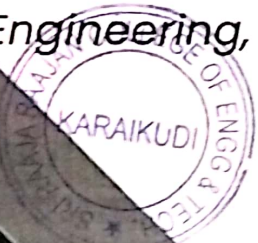


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T.N. Balaji

MR.T.N.BALAJI  
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*T.N. Balaji*

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*DR. AL. MAYILVAHANAN*

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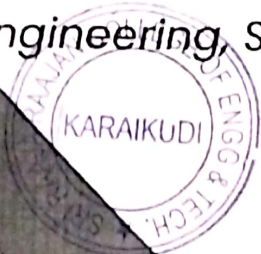


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DR. AL. MAYILVAHANAN  
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EMERGING TRENDS IN ELECTRONICS & COMMUNICATION ENGINEERING

(ICETECE'21)

certificate of participation

This is to certify that Prof./Dr./Mr./Ms. SHAHANA YASMIN.A has presented a paper entitled BIOMEDICAL IMAGE PROCESSING In the International Conference on "Emerging Trends in Electronics & Communication Engineering" held on 11th October 2021 Organized by the Department of Electronics & Communication Engineering, Sri Raaja Raajan College of Engineering and Technology, Karaikudi



*T.N. Balaji*

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*Al. Mayilvahanan*  
DR. AL. MAYILVAHANAN  
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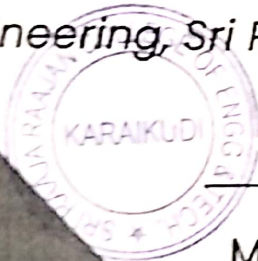


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certificate of participation

This is to certify that Prof./Dr./Mr./Ms. JANAKI RAMAN.N has presented a paper entitled PREVENT THE TRAIN DELAY USING MIWI COMMN In the International Conference on "Emerging Trends in Electronics & Communication Engineering" held on 11th October 2021 Organized by the Department of Electronics & Communication Engineering, Sri Raaja Raajan College of Engineering and Technology, Karaikudi



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