



## Department of Computer Science and Engineering

### Student Publications

PG

Sl No	Names of students	Name of paper	Name of journal	Date/issue	published
<b>2015-16</b>					
1	Jyothsana G K	"Simplifying document annotation using a data sharing platform"	Proceeding of IEEE International Conference on Intelligent systems and control	Jan 2016.	
2	Jyothsana G K	Assisting Document Annotation using a Data Sharing Platform"	IEEE International Conference at Karpagam Engineering College	January 2016 .	
3	Divya Jose	Double Stage Crawler for Efficient Retrieval of Deep Web Interfaces	Proceeding of International Conference on Innovations in information Embedded and Communication Systems	Mar 2016	
4	Divya Jose	Efficient Domain Specific 2 step Crawler To Identify Hidden Data Inside The Web",	Proceeding of 2nd IEEE International Conference on Engineering & Technology ,	Mar 2016	
5	Divya Jose	Household Device Usage Identification and Future Power Management Using Smart Meter",	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
6	Neethu K S, Roshmy George	"Text Classification Using KM-ELM Classifier	Proceedings of IEEE International Conference on Circuit, Power and Computing Technologies ICCPCT , Nagarcoil,	Mar 2016	
7	Jyothi P Joy	Secure Authentication	IEEE 3rd International Conference On Innovations In Information Embedded And Communication System -ICIIECS'15	Mar 2016	

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NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.



			Karpagam College of Engineering College, Coimbatore.		
8	Jyothi P Joy	“Secure Authentication Using Hopper-blum”	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
9	Jyothi P Joy	“Automatic Accident Notification And Severity Evaluation Of Vehicular Accidents”	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
10	Jyothi P Joy	“Secure Authentication Using Cognitive Scheme”	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	Jan 2016	
11	Nirosha Antony	"Monitoring the Railways "	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
12	Supriya Jose	“Mobile Robot Remote path planning and motion control in a maze environment”	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	Jan 2016	
13	Supriya Jose	Algorithm based motion control of a robot”	EEE 3rd International Conference On Innovations In Information Embedded And Communication System -ICIECS'15	Dec 2015	
14	Supriya Jose	“Detecting waterborne pathogens using a mobile and a DNA sensor”,	IEEE International Conference at Karpagam Engineering College, Coimbatore	8th January 2016 .	
15	Linnet Tomy	"Secure Communication of data through encrypted images using reversible data hiding",	Proceeding of IEEE International Conference on Engineering and Technology ,Coimbatore,	Mar 2016.	
16	Linnet Tomy	Secure Communication Of Data Through Erypted Images Using Reversible Data Hiding	,KETCON Kerala Technological Congress 2016 ,	Jan 2016	
17	Linnet Tomy	Secure Data Transmission Through Reversible Data Hiding	IEEE 3rd International Conference On Innovations In Information Embedded And	Dec 2015	

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			Communication System ICIECS'15		
18	Linnet Tomy	Secure Transmission Of Data Through Encrypted Images Using Reversible Data Hiding	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	Mar 2016.	
19	Swathy M Sony	Trust based on On-Off attack management	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	Mar 2016.	
20	Swathy M Sony	On-Off attack management based on trust	EEE 3rd International Conference On Innovations In Information Embedded And Communication System -ICIECS'15	Dec 2015	
21	Swathy M Sony	Authentication Methodology Using Electroencephalogram	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
22	D. Benny	New local adaptive thresholding and dynamic self-organizing feature map techniques for handwritten character recognizer,	Circuit, Power and Computing Technologies (ICCPCT), 2015 International Conference on, Nagercoil, 2015.	Dec 2015	
23	D. Benny	New Dynamic Self-Organizing Feature Maps for the classification of extracted feature vectors of characters,	Robotics, Automation, Control and Embedded Systems (RACE), 2015 International Conference on, Chennai, 2015.	Dec 2015	
24	Arun.k	Efficient load balancing in networks using Dynamic channel allocation technique	International Conference on Innovations in information Embedded and Communication Systems, Mar 2016	Mar 2016.	
25	Arun. K	"Traffic Pattern Identification Using Statistical Techniques In Mobile Ad-Hoc Networks For Secure Communication"	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	

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26	Arun K	"Efficient Load balancing Technique Using Dynamic Channel Allocation"	2nd IEEE International Conference on Engineering & Technology ,	Mar 2016	
27	Aparna.U.R	"Feature Selection and Extraction in Data mining"	IEEE 3rd International Conference On Innovations In Information Embedded And Communication System ICIECS'15	Dec 2015	
28	Aparna.U.R	"Phishing Detection by Classification "	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	
29	Aparna.U.R	"Feature Selection Mechanism in Data Mining"	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	Jan 2016	
30	Harsha T D	"Structure Description From Visual Orientation"	Kerala Technological Congress KETCON 2016 ,Jan 2016	Jan 2016	
31	Harsha T D	"Visual Orientation and Structure Description of an Image"	IEEE 3rd International Conference On Innovations In Information Embedded And Communication System -ICIECS'15	Dec 2015	
32	,N Radhika	"Design of a Secure Architecture for Last Mile Communication in Smart Grid System"	Isevier Smart Grid Technologies,	Aug 6-8,2015.	
33	Soniya Joseph	Performance Evaluvation of Damgard Jurik and Blowfish algorithm in SG System"	IEEE 3rd International Conference On Innovations In Informatiion Embedded And Communication System -ICIECS'15	Dec 2015	
34	Soniya Joseph	Novel Architecture for Efficient Communication in Smart Grid Home Area Network	IEEE International Conference on Computational Intelligence and Computing Research 2015, Madurai	December 2015	
35	Swathy Ramdas	Filtered Wall: Filtering Unwanted Messages From Osn User Walls"	28th Kerala Science Congress (Jan 2016) Proceedings	Jan 2016	

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NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.

2016-17					
1	G K Jyothisna	"Assisting document annotation using a data sharing platform"	International Conference on Intelligent Systems and Control (ISCO) Year: 2016	Sep 2016	
2	Supriya Jose	Mobile robot remote path planning and motion control in a maze environment	2016 IEEE International Conference on Engineering and Technology (ICETECH)	Sep 2016	
3	Supriya Jose	Detecting waterborne pathogens using mobile and a DNA sensor	2016 IEEE International Conference on Engineering and Technology (ICETECH)	Dec 2016	
4	Linnet Tomy ;	Secure data transmission through reversible data hiding 2016 Online International	Conference on Green Engineering and Technologies (IC-GET) Year: 2016	Dec 2016	
5	Swathy M Sony	On - off attack management based on trust	2016 Online International Conference on Green Engineering and Technologies (IC-GET)	Dec 2016	
6	Aparna U R	Feature selection and extraction in data mining	2016 Online International Conference on Green Engineering and Technologies (IC-GET)	Dec 2016	
7	Susan Shaju	A survey on computer aided techniques for diagnosing Alzheimer disease	2016 International Conference on Circuit, Power and Computing Technologies (ICCPCT)	Dec 2016	
2018-19					
1	P. K Jamshiya	Design of a Trusted Third Party Key Exchange Protocol for Secure Internet of Things (IoT)	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	

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NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.



2	Hima Haridas	An Artificial Intelligence Approach for Predicting Different Types of Stroke",	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
3	A K Aswathi	"An Intelligent System for Thyroid Disease Classification and Diagnosis",	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
4	Frangly Francis,	Ensemble Approach for Predicting Genetic Disease through Case-Control Study	,2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
5	TK Keerthana	An Intelligent System for Early Assessment and Classification of Brain Tumor	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
6	Riya Roy	Classification of WBC Using Deep Learning for Diagnosing Diseases Riya Roy ; Swapna Sasi	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
7	Laya K Roy	A Novel Method of Object Identification and Tagging Using Speeded-Up Robust Feature	2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)	April 2018	
8	Krishna Thulasi N P	A Novel Approach for Diagnosing Alzheimer's Disease Using SVM	2018 2nd International Conference on Trends in Electronics and Informatics (ICOEI)	April 2018	
<b>2019-2020</b>					
9	Nijitha	Automating the Drug Dosage of Tacrolimus for Liver, Renal Transplant Patients using Neural Network	International Journal of Innovative Technology and Exploring Engineering (IJITEE)	DEC 2019	
10	Lufiya George	Hand Gesture Recognition:Case Study	International Journal of New Technologies in Science and Engineering Vol.6, Issue.10, 2019.	August 2019	

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NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.



## UG

Sl No	Names of students	Name of paper	Name of journal	Date/issue	published
<b>2015-16</b>					
1	Jovis Joseph Aloor, Sahana P S, Seethal S, Sneha Thomas,	Design of VR headset Using Augmented Reality"	Proceedings of International Conference on Electrical, Electronics and Optimization Techniques ,Chennai,	March 2015	Yes
2	Minara P Anto, Mejo Antony, Muhsina K M, Nivya Johny C, Vinay James,	Product Rating Using Sentimental Analysis"	Proceedings of International Conference on Electrical, Electronics and Optimization Techniques ,	Chennai, March 2015	Yes
3	Veena P C, Ramya K, Riya Joju, Hima Haridas, Paulsy Tharakan	Smart Street Light System Based on Image Processing	IEEE International Conference on Circuit, Power and Computing Technologies	Mar 2016	Yes
4	Athira S, Radwin Raphel, Frangly Francis, Snohy Porinchu, Sachin NS	"Smart Mirror a Novel Framework for Interactive Display"	he International Conference on Circuit, Power and Computing Technologies ICCPCT-	March 2016	Yes
5	Shalince Dominic, Mahesh Mohan, Aparna C, Ajeesh M S, Aswin S Nath	A Review of Face detection system	Proceedings of International Conference on Electrical, Electronics and Optimization Techniques ,Chennai,	March 2016	Yes
6	Aju J Antony, Anitta Annie Alex, Dalwin C D, Majes George	Intelligent Policing system"	nternational Conference and Exhibition on Performance of Ships and Structures ICETECH 16	March 2016	Yes
7	Ajina Assissi, Angel Mariya Paul, Joe Mathew, Justine Paul, Tessa Jose	Beaconholic: An Efficient Framework For Location Sensing Reminder Application Using IOT	Proceedings of International Conference on Electrical, Electronics and Optimization Techniques	March 2015	Yes

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NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.

8	Leenat Chacko C, Tania Pius, Arun Rappai C, Alwin Vincent	Mobrobo	IEEE International Conference on Human Computer Interactions (ICHCI'16)	March 2015	Yes
9	Indhu Ashok, Gijo Varghese, Shaina Paulson, Sreemon K S, Liyanto P J,	Website code analysis and optimizer"	International Conference and Exhibition on Performance of Ships and Structures ICETECH 16	JAN 2016	Yes
10	Hasna Benny, Manikandan K S, Naija T C, Neenu Davis N	A Novel Architecture for Prediction based tariff of Home Area Network in Smart Grid",	Proceedings of International Conference on Human Computer Interactions (ICHCI) Chennai,	March 2015	Yes
11	Sanjo Simon, Thasviya Haroon, Neena S, Krishna Prasad K K, Rejoice Wilson	"Convivial Private Cloud implementation System Using OpenStack "	International Conference on Electrical, Electronics & Optimization Techniques (ICEEOT)	3rd - 5th March 2016	Yes
<b>2016-17</b>					
1	Athira C A , Hashlyin P Jose, Jini John,	Security Alert using Face Recognition",	International Research Journal of Advances in Computer Science and Technology, Vol 5 No 12	Dec 2016	Yes
2	S Athira ; Frangly Francis ; Radwin Raphel ; N S Sachin ; Snophy Porinchu ;	Smart mirror: A novel framework for interactive display	2016 International Conference on Circuit, Power and Computing Technologies (ICCPCT)	Dec 2016	Yes
3	aparna Mohan, Dilsha Hydrar Ali,	"Secure Online Payment System - A Review on variois Techniques"	International Journal of Advanced Research,	December 2016	Yes
4	Albin Vince, Arnold Tom	Comparative study of Vehicle Speed Controlling Sysem"	Inter national Jouranal of advanced research ,	December 2016	Yes
5	Sarga Ajithan, Sredha Mary Jose, Sarath Krishna Sonu Simon , Juby Jose	A Novel and Secure Methodology for Voting using Envcryptionand Bio metric Authentication"	Inter antion Research Jouranal of Engineering and Technology, Vol 4 Issue 4 sprin 2017	March 2017	Yes
6	Aiswarya Paulson, Aby John Varghese, Deen Shifas	ATM for Visually Challenged People"	International Research Journal of Engineering and	March 2017	Yes

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Technology, vol 4 Issue 3					
Academic year :2018-19					
1	Ajaz,Abhishek,Jilu	Automated billboard system	International journal of modern Engg and research technology	Aug 2019,vol 7	published
2	Reshma ,pretty,Noble,John	Child security system	International journal of modern Engg and research technology	Aug 2019,vol 7	published
3	Nikhil,Ramsankar,Nishna,Tisa	Parking Lot automation	International journal of modern Engg and research technology	Aug 2019,vol 7	published
4	Anand,Anirudh,Hari krishnan	Source restricted book referencing system	International journal of modern Engg and research technology	Aug 2019,vol 7	published
5	Adarsh,Ancia,Aleena,Emmanuel	Virtual Doctor Chat bot For Medical Diagnosis	International journal of modern Engg and research technology	Aug 2019,vol 7	published
6	Adhul,Ashik,Athira, Divya	Automatic Line Following Wheelchair	International journal of modern Engg and research technology	Aug 2019,vol 7	published
7	Manoop,Rizana,Vijay,Cyriel	CYBOT	International journal of modern Engg and research technology	Aug 2019,vol 7	published
8	Nicy,Reni,Rahul,Sreelakshmi	Smart Cart with Automatic Billing, Product Information Using RFID Anti-Theft System	International journal of modern Engg and research technology	Aug 2019,vol 7	published
Academic year :2019-2020					
1	Reshma,Flower Mariya,Sneja,Ano	LBA using Blockchain	International Journal of Trend in Scientific Research and Development	June 2020,vol 4	published
2	Arya,Abin,Joel,Jofiya	Performance Analysis of different Classifiers for Earthquake prediction: PACE	International journal of innovative research in technology	July 2020,vol7	published
3	Augustin ,Ayisha ,Anaghs	Virtual Therapy using Amazon's Alexa	International Journal of Advances in Computer Science and Technology	July 2020,vol 9	published
4	Sreelakshmi,Meera,Seena,Mathews	KYC using Blockchain	International Journal of Trend in Scientific Research and Development	Vol 4,june 2020	published
5	Tenwin,Vishnuraj,Lino,Varun	Review of Software to Analyse the Physical Conditions of the Athletes using sEMG	International Journal of Trend in Scientific Research and Development	Vol 4,june 2020	published
6	Joshua Shaji, Antony David, Divya Stephen, Amitha Isac,	Library Management System	International Journal of Trend in Scientific Research and Development	Vol 4,june 2020	published

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7	Vikas P, Meera N, Lillit Francis, Vimal Mohan	Traffic Automation Using Computer Vision	International Journal of Computer Trends and Technology	Vol 68, Issue 6, June 2020	published
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## Department of Mechanical Engineering

### Student Publications Details

Sl No	Name of students	Name of paper	Name of journal	Date/issue
<b>Academic year :2019-20</b>				
<b>B Tech</b>				
1	Joyel Joseph Jobi, Manu Prasad, Riyas Ahmad, Vivek K	E- Mobility Vehicle for physically challenged	International and Digital Conference on Electrification and Digital Mobility, Chennai, India,	2020
2	Aswin Thomas, Cristeen C B, Dinsa Davis, Jerin Jimmy	Modelling of surveillance hovercraft	Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering, India,	26-28 October, 2020
3	Savio Babu Puthur, Liya Maria P R, Milan Hearty, Krishnaprasad V P	Automatic seat belt release system	Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering, India,	26-28 October, 2020
4	Adarsh Sunil, Arjun K M, Deepak M. N	Investigation of mechanical properties of ecofriendly composite prepared from saw dust	Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering, India	26-28 October, 2020
5	Harinarayanan V	Characterisation of titanium aluminide (Ti-Al) based alloys prepared by spark	Virtual International Conference on Advanced Technologies and	26-28 October, 2020

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		plasma sintering method	Research in Mechanical Engineering, India,	
6	Christo Poullose, Dilshad M. K, Gokul Baburaj, Gregarin Thomas	Solar Powered Vehicle Cabin Cooling System	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020
7	Akash A, Akhil Paul, Athul P. M, Harikrishna	Design and fabrication of sea water purification system	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020
8	Jeo Joe Jelin, Jeffry K Joy	Production of Diesel from Low Density Polyethylene	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020
9	Prakul K, Pranav T V, Sarath S, Vyshak Haridas	Design And Fabrication Of Ayurvedic Tablet Maker	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020
10	Abel Antoo, Alex Joseph, Ashwin Francis, Augustin Sagar	Multipurpose Air Cooling System	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020
11	Akshay B S, Akhilesh P, Jithin P Mohan, John Dennis	Anti-Drowning System for cars	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020

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12	Adarsh Sunil, Arjun K M, Athul Thomas, Deepak M N	Eco-friendly composite material from saw dust	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020),	7-8, May 2020
13	Arun Shaju K, AugasthyaKuruvi la, Don A Kakkassery, Febin Sebastian	Solar Tracking - A Novel Approach	Proceedings of International Virtual Conference on Recent Innovations in Science & Technology (RIST 2020)	7-8, May 2020

## MTech

1	Suprabha Hyman	Simulation, development and characterization of tunable capacitor (Part 1:- Linear mechanical drive),	Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering, India	26-28 October, 2020
2	Ashik MS,	Dry powder fire extinguisher robot	Virtual International Conference on Advanced Technologies and Research in Mechanical Engineering, India	26-28 October, 2020

## Academic year :2018-19

## BTech

1	Arjun T B, Atul K P, Ajay P Muraleedharan, Albin Walton P, Bijinraj P B	A review on analysis of HHO gas in IC engines	Materials Today: Proceedings	11(2019) 1117- 1129
2	Sreerag V Nambiar,	The Low-Cost Adult Diaper Waste	International Journal of Mechanical and Production	Vol. 9, Aug 2019, 105-110

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	Sangeeth S, Vishnu Thilak A, Nigil Sebastian & Shabin K Joby	Management Method	Engineering Research and Development (IJMPERD)	
3	Saintson. P. A, Richard Jacob. E, Sanjai Babu. S & Manish. P	An Optimisation Of Surface Area And Heat Transfer Study Of Rectangular Porous Structure	International Journal of Mechanical and Production Engineering Research and Development.	Vol. 9, Special Issue, Aug 2019, 94-104
4	Nixon Johny, Murali T R, Manu Mathew P S	Experiment on carbon dioxide removal from flue gas	Materials Today: Proceedings	11 (2019) 1094- 1101

Academic year :2015-2016

BTech

1	Jaivin A. Varghese, Manoj Francis, Mossas V.J., Nidhin M.J., Nithil E.S., Sushmitha S	Experimental Investigation of a Helical Coil Heat Exchanger	Research Inveny: International Journal of Engineering and Science	Vol.5, Issue 8 (August 2015), PP -01-05
2	Colin Varghese, David Babu, Delwin Kuriyakose, Harikrishnan.A.S, Irshad M	Different Modes in Four Wheel Steered Multi-Utility Vehicles	Research Inveny: International Journal of Engineering and Science	Vol.6, Issue 4 (April 2016), PP -95-101
3	Sharukh K, Majo T Varghese, Steven Anto, Sijin E.B, Visakh K.K	Experimental Analysis of YSZ Coating on an IC Engine Piston	Research Inveny: International Journal of Engineering and Science	Vol.6, Issue 4 (April 2016), PP -106-111

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4	Mossas V.J., Nidhin M.J., Nithil E.S., Sushmitha S.	Experimental Investigation of Waste Heat Recovery System for Household Refrigerator	Research Inveny: International Journal of Engineering and Science	Vol.6, Issue 4 (April 2016), PP -19-23
5	Edwin Chalissery, Balakrishnan C.R, Edwin Joy Pulikkottil, Adersh R, Abi Daison, Elias K Elias	Design and Fabrication of Reverse Gear Mechanism for Handicapped People	International Journal of Scientific & Engineering Research	Volume 7, Issue 4, April 2016
6	Vipin Das, Nidhin M, Midhun Unnikrishnan, Ny gin Jose, Rishikesh P.	Fabrication and Analysis of Solar Powered Air Cooler	The International Journal of Engineering and Science (IJES)	Volume 5, Issue 1, 2016, PP -36-41

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## Department of Electrical & Electronics Engineering

### Student Publications Details

Sl No	Name of students	Name of paper	Name of journal	Date/issue
<b>Academic year :2019-20</b>				
<b>B Tech</b>				
1	Jain Varghese , Stephy Akkara	Atmospheric Water Absorption Kit	Journal of Advanced Engineering Research	Nov-19
<b>MTech</b>				
1	Stephy Akkara	Simulation on the generation of electricity from running train wheels.	International Journal of Mechanical and Production Engineering Research and Development	Aug-19
<b>Academic year: 2018-19</b>				
<b>MTech</b>				
1	Stephy Akkara	A Prototype design of RFID centered Hi-Tech Toll Assortment Plaza	Mediterranean Journal of Basic and Applied Sciences	August 2018

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Sl No	Name of students	Name of paper	Name of journal	Date/issue
Academic year: 2017-18				
<b>BTech</b>				
1	Arathi Premnath ,Aiswarya Raj	A review study- Smart Grid integration of renewable sources using EZ and Z source inverters.	International Journal of Current Engineering and Scientific Research (IJCESR).	2017
2	Sai Lakshmi , Aiswarya Raj	A review study of E waste management in India	Asian Journal of Applied Science & Technology	September 2017
3	Philip Chacko	Nano Generator Intended for Harvesting	Asian Journal of Applied Science & Technology	September 2017
4	Arathi Premnath	SFCL Technology for generator protection	Asian Journal of Applied Science & Technology	September 2017
<b>MTech</b>				
1	Aiswarya Raj	Sustentation of Energy by a Contemporary GSM based Prepaid Energy Meter	Middle-East Journal of Scientific Research	September 2017
2	K P Sherin	Renewable power centred intelligent power supervision system for households.	Middle-East Journal of Scientific Research	September 2017
3	David Mathew	Voltage controlled DC-DC converter for enhancing waste heat recovery.	International journal of research in advent technology	May 2018

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S I No	Name of students	Name of paper	Name of journal	Date/issue
Academic year: 2016-2017				
<b>MTech</b>				
1	Justin John	A novel three phase three level step up multilevel inverter topology for aircraft applications	2016 IEEE International Conference on Power Electronics ,Drives and Energy Systems	2016
2	Neethu John	Non Isolated DC-DC Converter Using one Cycle Control	International Conference on Innovation in Information Embedded and Communication Systems	2016
Academic year :2015-2016				
<b>MTech</b>				
1	Akhila M	Analysis of regenerative braking in brushless DC motor drive using adaptive nuero based fuzzy inference system	International Journal of Science and Research	Dec 2015
2	Divya Venugopalan	Integrated Dual Output Buck Boost Converter for Industrial Application.	International Journal of Engineering Research &Technology	November 2015
3	Chippy George M	PFC Cuk converter fed BLDC motor drive using artificial neural network.	International Journal of Engineering Research & Technology (IJERT)	November 2015
4	Emilin Thomas Kangappadan	One cycle control of interleaved Buck converter with step down conversion ratio.	International Research Journal of Engineering & Technology	Dec 2015

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S I No	Name of students	Name of paper	Name of journal	Date/issue
5	Josie Baby	Closed loop control of high step up DC/DC converter based on coupled inductor and switched capacitor	International Research Journal of Engineering & Technology	November 2015
6	Reshma T M	Voltage mode control of soft switched single switch isolated DC-DC converter	International Research Journal of Engineering & Technology	Dec 2015
7	Reshma K R	PWM Control of High Gain Sepic Boost Converter with Coupled Inductor and Charge pump capacitor	International Research Journal of Engineering & Technology	Dec 2015
8	Sangeetha K	The Derivative of a Switched Coupled Inductor DC-DC Step Up Converter by using a Voltage Lift Network with Closed Loop Control for Micro Source Applications.	International Research Journal of Science and Research	Dec 2015
9	Liji K K	Ripple current reduction technique for DC to DC converter using tapped inductor	International journal of latest research in Engineering and Technology	2016
10	Neethu P Gopal	Closed Loop Control of ZCS Interleaved High Set Up Converter for Sustainable Energy Applications.	International Journal of Science and Research.	2016

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## Department Of Civil Engineering

### Student Publications Details

Sl No	Name of students	Name of paper	Name of journal	Date/issue
<b>Academic year :2019-20</b>				
<b>B Tech</b>				
1	Vineetha N	Effect of Geometry on Driver Heart Rate, World Conference on Transport Research, May 2019	Transportation Research Procedia	May 2019
<b>MTech</b>				
1	Jeena Johny A	Two Lane Highway Consistency Based On Alignment Indices	International Journal of Advanced Research in Computer and Communication Engineering	January 2019.
2	Leejiya Jose	Performance Evaluation of Kerala State Road Transport Corporation	International Journal of Engineering Research and Technology (IJERT)	June 2019.
3	Herin K.J	Study of on street & off street parking choice behavior	International Journal of Advanced Research in Computer and Communication Engineering	January 2019.
4	Shahana H	Fuzzy Logic Based Route Choice Behaviour Modelling	International Research Journal of Engineering and Technology (IRJET)	January 2019

  
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SI No	Name of students	Name of paper	Name of journal	Date/issue
5	Chandni Divakaran P	Road traffic induced noise pollution modelling and fuel emission analysis at rail-road crossings	International Journal of Scientific and Engineering Research	May 2019
6	Herin K.J	Vehicle choice behaviour on "on street" parking	International Journal of Scientific and Engineering Research	May 2019
7	Jeena Johny A	Modeling of Intercity Mode Choice Behaviour of Passengers	International Journal of Scientific and Engineering Research	May 2019
8	Jerry Soman1,	Development of Accident Prediction Model on Horizontal Curves	International Research Journal of Engineering and Technology (IRJET)	March 2019
9	Nivea John	Crash Characteristic Analysis and Blackspot Identification using QGIS	International Journal of Advanced Research in Computer and Communication Engineering	January 2019.
10	Chandni Divakaran P	Estimation of Pedestrian Level of Service Model at Signalised Intersections	International Journal of Advanced Research in Computer and Communication Engineering	January 2019.
11	Maria Francis	Study on Pedestrian Crossing Behaviour at Intersections	International Research Journal of Engineering and Technology (IRJET)	Mar-19

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SI No	Name of students	Name of paper	Name of journal	Date/issue
12	Bincy B J	GIS based Road Safety Audit of State Highways in Thrissur	International Research Journal of Engineering and Technology (IRJET)	Jun-19
13	Maria Francis	Analysis of Passenger Flow Parameters of Rail Transportation In Kerala	International Research Journal of Engineering and Technology (IRJET)	Jun-19
14	Namitha Susan Josephl,	Pedestrian Safety Analysis at School Zones	International Research Journal of Engineering and Technology (IRJET)	Jun-19
15	Shahana H	A Study to Determine Pedestrian Walkability Index in Mixed Traffic Condition	International Research Journal of Engineering and Technology (IRJET)	Mar-19
16	Nivea John	Crash Prediction Modeling of Two Lane Undivided Highways Using Artificial Neural Network	International Journal of Scientific & Engineering Research	May-19
17	Aswathy K R	Performance Analysis and Modeling of Entry Capacity of Roundabout Under Heterogeneous Traffic	International Journal of Advanced Research in Computer and Communication Engineering	Jan-19
18	Leejiya Jose1	Urban Resident's Awareness and Readiness for Sustainable Transportation a Case Study	International Journal of Advanced Research in Computer and Communication Engineering	Jan-19

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S1 No	Name of students	Name of paper	Name of journal	Date/issue
19	Ameera V U	Passing Opportunity Model of Vehicles on Two Lane Undivided Highways under Mixed Traffic Conditions	International Research Journal of Engineering and Technology (IRJET)	Jun-19
20	Jerry Soman	Mode choice Behaviour Analysis of Students in Thrissur city	International Research Journal of Engineering and Technology (IRJET)	Jun-19
21	Thasneem Nadirsha,	Traffic Flow Modeling and Capacity Estimation for Heterogeneous Traffic on Four Lane Divided Carriageway	International Journal of Scientific & Engineering Research Volume 10, Issue 5, May-2019	May-2019
22	Noble Jose	Bus Route Optimization and Scheduling In Hyderabad City Using Arc-Gis in Association with Lumiplan Pvt. Ltd.	International Journal of New Technology and Research (IJNTR)	May-19
Academic year: 2018-19				
MTech				
1	Thasneem Nadirsha	Analysis and Development of Traffic Speed-Flow-Density Relationships for Urban Roadway	International Journal of Engineering and Advanced Technology (IJEAT)	Dec 2018
2	Arathi A R	Feasibility Study of Provision for Exclusive Bus Lanes on Urban Roads	International Journal of Engineering and Advanced Technology (IJEAT)	Dec-18

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S1 No	Name of students	Name of paper	Name of journal	Date/issue
3	Rosmy Sebastian	Environmental Impact Assessment of Thrissur-Vadanapally Road Project	International Journal of Engineering and Advanced Technology (IJEAT)	Dec-18
4	Bincy B.J,	Use of Data Mining Technique for Systematic Road Safety Audit of Non-urban Highways	International Journal of Engineering and Advanced Technology (IJEAT)	Dec-18
5	Midhun T	Activity Based Transportation Modeling for Chelakottukara ward of Thrissur District	International Journal of Engineering and Advanced Technology (IJEAT)	Dec-18

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# A Novel Three Phase Three Level Step up Multilevel Inverter Topology for Aircraft Applications

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Jyothi Engineering College  
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**Abstract**—Multilevel inverters give a near sinusoidal output, thus avoiding the need of a bulky filter in the inverter output. This paper proposes a novel three phase three level multilevel inverter using switched capacitors. The operating frequency is 400Hz, thus enabling its usage in aircraft and aerospace applications. The circuit is simulated using MATLAB Simulink and results are analyzed. A prototype is made and output is verified within limitations.

**Keywords**—multilevel inverter; three level; step up; sine PWM

## I. INTRODUCTION

The fast growing world paves way for depletion of natural non renewable resources in an alarming rate. This facilitates more research in the efficient use of renewable energy resources. Problems with the renewable energy sources are the low voltage output and its inconsistent nature. So the need for stepping up of the inverter voltage becomes necessary. The non conventional inverters gives a two-level output which has got high level of harmonics. This causes the need for bulky filters, which create problems in the aircraft industries. Therefore, multilevel inverters are used to obtain a near sinusoidal waveform. This gives a reduced THD output.

On studying the literature, it can be seen that majority of the circuits contain multiple voltage sources and increased number of switches. Also, in aircraft applications, the permitted THD is below 3-5%. Many of the topologies have got a THD greater than 3%. Though the conventional multilevel topologies give a reduced THD output, it will not step up the output voltage. These problems are addressed in this paper thus giving a stepped up output with reduced THD.

A researcher named Yuanmao Ye [1], introduced a single phase topology which has reduced number of switches and a single voltage source. This circuit consists of a dc part and an ac part. This circuit is modified into a three phase topology and desired output is obtained. It is also proved that this topology cannot be extended to higher number of levels, which is stated otherwise in the base paper [1].

## II. PROPOSED TOPOLOGY

The proposed circuit is shown in Fig. 1. It necessarily consists of three legs, which are the three phases, phase A,

phase B and phase C. Each leg consists of two diodes and one capacitor constitute one leg. Therefore, the whole circuit consists of twelve switches, six diodes and three capacitors. All the three legs are connected to a common point. The main advantage of the circuit is the usage of a single voltage source.

The three phase output is taken from the three legs of the converter. A star connected load is used for the analysis. Circuit explanation is given for one phase of the converter. Working of other two phases is the same as that of the explained one. One phase leg of the proposed topology is shown in Fig. 2.

### A. Zero Level

For obtaining the zero level output, the switches  $Q_0$  and  $Q_3$  are kept ON.  $Q_1$  and  $Q_2$  are kept OFF. In this state, the capacitor charges through the switch  $Q_0$ . The output remains zero. Fig. 3 explains the working of a phase leg to obtain zero level output.

### B. $+V_m$ Level

For obtaining  $+V_m$  level, the switches,  $Q_2$  and  $Q_3$  are inverted from that of zero level stage. This ensures that the capacitor  $C_1$  is still in the charging mode. At the same time, the input voltage  $V_m$  is taken out through the diode  $D_1$  and switch  $Q_2$ . Fig. 4 explains the working of a phase leg to obtain  $+V_m$  level output.

### C. $+2V_m$ Level

For obtaining  $+2V_m$  level, the switch  $Q_0$  is turned OFF and switch  $Q_2$  is turned ON. Switch  $Q_1$  will remain in its ON state and  $Q_3$  will remain in its OFF state. Here, the input voltage  $V_m$  is added up with the capacitor voltage and is taken out through the switch  $Q_2$  which gives  $+2V_m$  output. Fig. 5 explains the working of a phase leg to obtain  $+2V_m$  level output.

This comprises the working of one phase. The working of other two phases is same as explained above, but with  $120^\circ$  apart. The pole voltage is taken between the switches  $Q_1$  and  $Q_3$ , and the common point. The pole voltage shows the three level output and this determines the level of a three phase multilevel inverter.

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# Hybrid Electric Bicycle

Jinta John, V.K. Jithesh, C.P. Lickya, Preetha Francis, U. P. Syama and Aswathy Rajan

**Abstract**—The traffic congestion, energy and environmental considerations are boosting the interest for Light Electric Vehicles. Electrically Power Assisted Cycles (EPAC's) show a great potential. They are cost effective, safe, easy to use and have a small footprint. In this project, we introduce a Hybrid Electric Bicycle. The hybrid electric bicycle is meant as a challenge to get, on sunny summer days to provide the most pedal assistance as possible. E-bikes need large and heavy batteries to allow riding long distance because the battery is charged only once at home. The pv panels have enough power and give the bicycle an infinite range. The cost of electrical energy that would be needed to cycle a whole day is very less. In this way comparably simple and inexpensive vehicle can be driven with out the use of any fossil fuels. This bicycle is easily accessible, safe and requires only less maintenance because of the use of minimum mechanical parts. It is ideal not only for cyclist but also those for non athletes, elderly and individuals with health problems.

## I. INTRODUCTION

ELECTRIC mobility is often presented as a solution to the pollution issue. A closer look reveals that electric mobility is reiterating some of the errors of fossil fuel mobility. In most cases, electric mobility is embodied by vehicles where a battery and an electric motor replace the internal combustion engine and tank. The resulting large battery packs increase the cost and thus reduce the attractiveness of these solutions for the final user. If we are to solve the pollution, cost and congestion problems of the 21<sup>st</sup> century mobility, a more integrated and all-around solution has to be adopted. Bicycles could play a critical role in this scenario. Bicycles are extremely cost effective, eco-friendly, healthy, and, in congested cities, are often the fastest way to reach one's destination. The solar electric bicycle is meant as a challenge to get, on sunny summer days, the most pedal assistance as possible out of the solar panel used. The solar electric bicycle is sportive. It may not cost substantially more energy to drive the solar electric bicycle, when not powered, than a normal bicycle. When there is no sunlight or the batteries are empty the bicycle should still be light running. E-bikes need large and heavy batteries to allow riding long distances, because the battery is charged only once at home. The solar bike approach is different. The PV panels have enough power and give the bicycle an infinite range. The battery is small, and saves weight. Without sun however, the battery can be fast charged en route in about 30 minutes because 12V 12 Ah \* 2 LA batteries and 220V AC, 50 Hz, 1.0A charger allow fast charging. Although, we need a location, for instance a café

that allow us to use the mains. Another method is by charging the battery through a homemade windmill using a fan or a 24V DC fan (a prototype of the fan has been shown in the bicycle). The fan is placed above the front wheel of the bicycle and is connected to one of the 12V battery placed in the bicycle. The battery will be charged while the bicycle is running. This way of charging the battery will be very useful during cloudy day. The purpose of the solar bike is not energy saving. A bike is very energy efficient. The cost of the electrical energy that would be needed to cycle a whole day is very less. In terms of energy savings, this is negligible. A solar bicycle or tricycle has the advantage of very low weight and can use the rider's foot power to supplement the power generated by the solar panel roof. In this way, a comparatively simple and inexpensive vehicle can be driven without the use of any fossil fuels. The solar electric bicycle is easily accessible, safe and practical with limited maintenance requirements due to a minimum of mechanical parts used. It is ideal not only for the experienced cyclists but also for those non athletes, the elderly and individuals with health problems.

In present scenario, with increasing number of automobiles the need for petroleum products is reaching the peak point. These petroleum products are non-renewable sources and it has a danger of exhaustion in future, so it is better to move to an alternate energy sources. The price of crude oil has increased significantly over the past few years and there seems to be no turning back. Moreover global warming, pollution and scarcity of traditional resources are becoming major problems. The term "hybrid" usually implies that more than one energy source is used to power all or part of a vehicle's propulsion. The hybrid bicycle is a project that can promote both cleaner technology as well as a lesser dependence on oil. It will run on clean electric power with the ability to recharge the battery 3 separate ways: through the charger, by photovoltaic solar panels and by dynamo. Hybrid bicycles has been since 1895 on 31 December, Ogden Bolton Jr. was granted U.S. Patent 552,271 for a battery-powered bicycle with "6-pole brush-and-commutator direct current (DC) hub motor mounted in the rear wheel." There were no gears and the motor could draw up to 100 amperes (A) from a 110-volt battery. Two years later, in 1897, Hosea W. Libbey of Boston invented an electric bicycle that was propelled by a "double electric motor. Torque sensors and power controls were developed in the late 1990s. Production grew from 1993 to 2004 by an estimated 35 percent. By contrast, according to Gardner, in 1995 regular bicycle production decreased from its peak 107 million units. Some of the less expensive e-bikes used bulky lead acid batteries, whereas newer models generally used NiMH, NiCd, and/or Li-ion batteries, which offered lighter, denser capacity batteries. By 2001 the terms e-

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# DESIGN CONSISTENCY EVALUATION FOR TWO - LANE RURAL ROADS: A CASE STUDY FROM KERALA

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## Abstract

Road accidents are most frequent and cause damage to human life and property. One of the main reasons for the occurrence of road accidents is lack of geometric design consistency. Geometric design consistency is having an important role in highway design. Design consistency is defined as the relationship between the geometric characteristics of a highway which is comfortable for safe driving. When the design is consistent with the driver expectation, the highway is consistent. This reduces the possibility of driving errors and unsafe manoeuvring. This paper focuses specifically on the development of new operating speed model in which the geometric features of an alignment are considered and also to evaluate design consistency with operating speed.

After taking several considerations into account, three study stretches were selected in Thrissur and Palakkad districts of Kerala State that comes under SH 23, SH 39, SH 50 and SH 74. Accident data on the selected roads were collected from 10 police stations. Geometrical survey and spot speed survey was carried out on the identified 50 curves. Spot speed data collection was conducted mechanically using the equipment TIRTL (Transportable Infra-Red Traffic Logger) and as well as manually.

Vehicles are categorised as Two Wheeler (2W), Three Wheeler (3W), Light Motor Vehicle (LMV) which includes car and jeep, Light Commercial Vehicle (LCV) which includes mini bus and mini truck, and Medium Commercial Vehicle (MCV) which includes bus and truck. Operating speed of each vehicle category was computed. Database includes geometrical elements like radius of curvature, curve length, deflection angle, width of road, level difference, degree of curvature, and also tangent length and traffic volume. Scatter plot was plotted to find out the relationship between operating speed and various geometric parameters. Then a correlation matrix was formed and the significant variables were identified. Multiple Linear Regression Analysis was performed at 95% confidence level. Models having greater  $R^2$  value for each vehicle category were identified, performed validation and selected the model with least Root Mean Square Error Value.

Consistency evaluation was done based on Lamm's criteria which measures geometric design consistency in three levels (good, fair and poor). Based on these criteria about 26 curves were identified as good, 15 curves as fair and 3 as poor. Consistency rating was done for all types of vehicles. The number of accidents was found to be more at curves whose difference in 85th percentile speeds between tangent and curve is greater than 20 km/h. Accidents were found to be less at curves whose difference in 85th percentile speeds is less than 10 km/h. This criterion helps a designer to evaluate highway design and make suitable modifications in the design from the safety point of view.

*Keywords:* Consistency Evaluation; horizontal alignment; two-lane rural highway; operating speed;

Road accidents may be due to many factors like highway designs, pavement conditions, weather conditions, driver behaviour and speed limits *etc.* As the number of accidents increasing day by day, the design consistency evaluation of roads are becoming more significant. Geometric design consistency is an important component in highway design and an important tool in evaluating road safety. Design consistency refers to the condition where in the roadway alignment does not violate driver expectations [3]. Identifying and treating any

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# HIGH VOLTAGE GAIN DC-DC CONVERTER FOR DC MICROGRID

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**Abstract**— A group of non-isolated DC-DC high voltage gain converters for DC micro grid is discussed here. The combination of non-isolated boost interleaved converter helps to obtain high step up gain without operating in a high duty ratio conditions. Through interleaved manner, a continuous current can be drawn from the given input sources. This converter can reduce the input current ripple and current stress which results in the increase the lifetime of the input source and the decrease in conduction losses. These advantages makes this in appealing for renewable applications such as solar systems, microgrid systems etc. Also they can be used to interface the 400-V DC bus in a microgrid system using the low power voltage sources like batteries, photovoltaic (PV) panels, fuel cells, etc.,

**Keywords:** Cuk, PV, Modified Cuk converter, LTSPICE

## 1. INTRODUCTION

Nowadays, importance and the use of renewable energy demand is increasing drastically and it is employable globally, the reason behind this is the energy shortage and the present environmental problems. The renewable energy systems such as fuel cells, wind power generation, and photovoltaic (PV) systems needs a dc-dc high voltage gain converters and also want a high voltage output, for this need the use of high voltage gain dc-dc converters demand is increasing drastically [5]. So the interfacing of a 400-V DC bus in a dc microgrid system voltage sources like fuel cells, photovoltaic (PV) panels, batteries, etc. can be established by using this type of converters[4]. It can also find different of application like the interfacing of uninterruptable power supplies, high-intensity discharge lamps for automobiles etc[3].

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For an actual power converters the continuous variation in the operating frequencies results in a high switching losses, low efficiency etc. In order to calculate the switching losses there some circuit simulation softwares it contains different switching device models.

But the problem is that this methods are time consuming, the information regarding to this is very limited and the result is not accurate[12]. The main problem is that this calculation only provides valid information and not to provide general information on the basis of physical insight. The other problem is that analytical switching losses (on the basis of some assumption) results in less accurate but it is easy task for the designers to calculate it in an easy manner. By using this they can make immediate comparisons on the basis of some of the operating parameter and switching performance[1].

There are some systems which is used to convert the dc-dc, low voltage to high voltage, renewable energy to electrical energy and vice versa. For this type of system requires a high step up conversion and also need high step up gain, which results in the increase in the cost and decrease in the efficiency[12]. By analytically calculating the switching models the designers must have much more knowledge about the switching loss mechanism and also need some physical insight about it.

In centralized inverter topology, the simplified version of AC module configuration is used. In this inverter is connected with a single string of PV modules. For minimizing the losses separate MPPT algorithm is applied to each String of the PV modules[9]. By comparing this with the centralized inverter topology, it creates a reduction in the system reliability and increase in the overall efficiency of the system. The reduction in the system reliability is mainly due to the connection of individual PV modules in the high voltage gain converters[14]. By connecting a multiport high voltage converters and power sources for power sharing, MPPT algorithms etc. For each individual module we can implement this method also at the input port.

By implementing the commonly used step up converters like buck boost converter, flyback converters, boost converters etc because of leakage inductance and losses in the resistance reduce the efficiency and high step up conversion ratio and also the voltage stress quite large for this type of converters[13]. In order to overcome this high voltage step up gain

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# Performance Evaluation of Kerala State Road Transport Corporation

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**Abstract**—Kerala State Road Transport Corporation (KSRTC) is the oldest state run public bus transport services in India. It plays a crucial role in strengthening the public transport system in Kerala. But today the corporation is facing a big crisis. The main objectives of this study are to evaluate the operational and financial performance of KSRTC and to compare the performance of various depots in KSRTC. This study uses both primary and secondary data. It includes interviews with the employees and visiting major depots and KSRTC offices to collect the required data. Different parameters for data analysis are operational parameters and financial parameters which includes, fleet, collection and passengers etc. The analysis of 28 main bus depots of Kerala State Road Transport Corporations are done by using Data Envelopment Analysis (DEA) in the software DEAP 2.1. The analysis shows that Trivandrum City and Trivandrum Central depots have maximum degree of efficiency in every year with an average efficiency score of 1. Ernakulam is the most inefficient depot with average efficiency score of 0.741. It is found out from the Technical Efficiency analysis that on an average 11.5 percent of the technical potential of the depot is not in use. This study has discussed how DEA can be applied to evaluate the degree of efficiency of the depots. Thus, these results give an indication on the degree of efficiency of depots in the process of transforming inputs into output. Target values are also discussed in this project. Target values are the values of input and output which would result in an inefficient organization to become efficient.

**Keywords**—KSRTC; Technical efficiency; Data Envelopment Analysis; Decision Making Units;

## I. INTRODUCTION

Transportation is the most important part of human life. It allows people to travel from one place to another. To make people feel convenient and comfortable with their position, different modes of the transportation system are found and it is evolved from the earliest stage to the present stage of the transportation system. At present, with the upgraded technology different modes of transportation systems are developed. The primary mode of transport for most of the Indian citizens are public transport. The availability of a safe and comfortable passenger transport facility is an important index of the economic development of any Country. Public transport provides vital connectivity to different areas of society.

Kerala State Road Transport Corporation (KSRTC) was developed in 1961. KSRTC is a state-owned public transport corporation in the Indian State of Kerala. This organization divided into three different zones for its proper working namely North Zone, Central Zone, and South Zone, with headquarters at Thiruvananthapuram. The corporation has

6241 buses which include Scania, Volvo, Ashok Leyland, Tata Motors, Eicher Motors, and minibuses.

Kerala State Road Transport Corporation (KSRTC) It is one of the oldest state-run public bus transport services in India. It has an important role in the public transport system strengthening in Kerala. But today the corporation is facing a huge crisis in its operation. Management problems, increase in fuel price, etc. can be called as reasons for this crisis. This project aims to study the performance of Kerala Road Transport Corporation by collecting operational and financial parameters from all the depots in Kerala. So the main objectives of this project are

1. To evaluate the operational and financial performance of KSRTC
  2. To compare the performance of various depots in KSRTC
- In India, it is not a good experience to travel through public transport, and for good reason. Most of the vehicles run by its state road transport undertakings (SRTUs) is old, and there is a shortage of funds to replace them. The government report shows that most of the SRTUs are not profitable. So it is important to understand various problems associated with working of KSRTC which makes the corporation inefficient, to improve the efficiency of depots.

## II. LITERATURE REVIEW

This section provides an overview of previous research on Road Transport Corporation with a specific focus on efficiency improvement, management strategies and related issues of the corporation. It shows the details and methods used for the case study that contains the main focus of the research explained in this thesis.

Bangalore is the largest city in the state of Karnataka and is considered to be the Information Technology capital of India. In order to fulfill the different needs of the growing city population BMTC had introduced different services to serve the different segments of public transportation users. The performance evaluation of Bangalore Metropolitan Transport Corporation specifically aiming at premium bus services of BMTC operating in Bangalore city is conducted by Devaraj Hanumappa et al. (2016). The performance measurement of premium bus services is done using two different approaches. Ratios were computed considering different operational and financial indicators and these ratios are benchmarked by considering the best performing units as the target to compare the bus depots performance. Further, they studied the performance of bus depots using data envelopment analysis (DEA). The main conclusion in our study is that even though the cost of operation in terms of fuel, type maintenance, etc., has increased in these days the efficiency of these depots and



# A Comprehensive Study on Human Interaction with IoT Systems

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**Abstract** - Internet of Things (IoT) is one among the trending technology in this digital era. Developments in network infrastructure and automated devices boosted the reach of IoT. The IoT can be defined as a network of internet-connected things (e.g., computers, vehicles, and sensors). These interconnected things exchange data between themselves and help people to access internet-connected devices, applications, and services anytime and at anywhere. The technological advancements mainly focused on how to make huge profit by enabling faster machine to machine communication. Still there is a challenge exists to provide an efficient and better interaction between human beings and IoT systems.

User could either monitor or configure internet connected things at home, offices and any other places for control of various functions like temperature, humidity, lighting and other energy efficiency. Users can be of different types. Depending on them, dissemination of IoT became a great issue. Because, the users like children, elderly people and various kinds of disabled persons will be the intended customers of specific IoT devices. To make them comfortable with the products, their interaction with IoT devices should be smooth and easier. Here, in this paper we tried to evaluate some of the early published interacting systems developed by others. This will enable you to understand the working principles used by them and will help you to integrate various methods to develop a better interacting system devoid of limitations experienced by them.

**Key Words:** IoT, Man and IoT, Human interaction with IoT, IoT device controls, Human to machine communication, Smart Wearables, Gesture recognition, Speech recognition....

## 1. INTRODUCTION

Internet of Things (IoT) has been emerging as a new phenomenon that will change the world. IoT will make an impact on different aspects of human life such as the economy, welfare, security, safety, etc. There are a lot of applications for IoT like smart homes, smart cities, healthcare, etc. IoT establishes interrelated computing devices, where each one has a unique identifier and can communicate with each other with minimum human intervention [1]. The number of internet-connected devices is now dramatically growing. According to a recent study on the prediction of IoT market share, the number of IoT devices will approach 100 billion and the total amount of

data generated by the users and devices will reach 35 ZB by 2020 [2].

However, the current technologies mainly focus on improving the machine-to-machine communication/interaction, rather than the interaction between users and machines. For example, some IoT platforms designed for smart home automation provide a web-based UI and a mobile application to register, manage, and control the smart home appliances connected to them. Users must first open the website or the mobile application, explore a page to select a menu, find a room or location, and finally select the device to be manipulated from a list. After selecting the device, the users can check the status or control it by touching or clicking the buttons on the webpage or mobile page. However, this UI and procedure will become tedious and time-consuming to the users with the current rapid increase in the number of IoT ready devices. Additionally, users who are not familiar with smart devices, such as children and seniors, or those with limitations in accessing them, such as severely ill patients or the disabled, will encounter difficulties in using the IoT applications and services. This inconvenience will be a major obstacle to the dissemination of the IoT [3].

Typically, 'interaction' in the context of IoT means interfaces which allow people to either monitor or configure IoT devices. Some examples include mobile applications and embedded touchscreens for control of various functions (e.g., heating, lights, and energy efficiency) in environments such as homes and offices. Additionally, users who are not familiar with smart devices, such as children and seniors, or those with limitations in accessing them, such as severely ill patients or the disabled, will encounter difficulties in using the IoT applications and services. This inconvenience will be a major obstacle to the dissemination of the IoT. Thus, there is a need to investigate what kinds of interaction techniques could provide IoT to be more human oriented, what is the role of automation and interaction, and how human originated data can be used in IoT [4].

In this paper we tried to study some human-machine interacting systems. It includes a complete description on methodology and schemes of each system along with its limitations. This paper will make us aware about various interaction methods in detail.



## A Prototype Design of RFID Centered Hi-Tech Toll Assortment Plaza

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### ABSTRACT

The superhighway of transport has become an extra factor in contemporary road system and the physical toll assortment system has turn out to be old fashion due to its digit of problems. By engaging computerized toll assortment system, driver of motor vehicles require not to stopover at a booth or and excess period for coming up in an extended queue to remunerate the toll. This eases the feeding of fuel, lessen congestion, increase road safety. A Radio-Frequency Identification (RFID) Electronic Toll Assortment (ETA) system is fundamentally aimed for an incessant toll assortment, which has developed an imperative part of intellectual transport scheme. This paper grants the perception of RFID ETA by means of designed scheme. This effort eradicates the requirement for drivers and toll consultants to by hand achieve ticket expenses and toll fee assortments, correspondingly. Data info are also effortlessly swapped among the drivers and toll experts, thereby it is able to abolish probable hominoid inaccuracies for well-organized toll assortment.

Keywords: Radio-Frequency Identification (RFID), Electronic Toll Assortment (ETA), vehicle monitoring, Management center, Monitoring station.

### 1. INTRODUCTION

This paper defines the RFID grounded toll assortment in demand to decrease the traffic in tollbooths as hold back time. Radio Frequency Identification is an auto identification technology which uses radio frequencies to recognize matters remotely. It does the work of sensing, billing, and accounting for vehicles as they permit through toll (Aniruddha and Kshitiju., 2014). An RFID tag is programmed with information in the form of a code which can be recite over a substantial remoteness so that its matters categorizes the vehicle and develop transaction to be undertaken with respect to the specific tag. It takes the advantages of radio frequencies ability to travel extended ranges with well data competencies and extraordinary speed.

In contemporary era of technology, wherever machineries are actuality widely castoff in all the fields. We are demanding to emulate idea, which will be of pronounced and that can be used in communal transportation scheme. Nowadays an individual has to mobile long space into immensely unidentified terrains for profession, trade or even for travel. As the vehicles are increasing and transportations that are dropping short, currently we see regular traffic jam or long logjams at the toll station coming up for giving the toll. Paying the toll every time over cash or inspection of the pass takes a lot while and nowadays time is more important than money. Therefore this paper aims at minimize the time expended for manual transactions, human effort and air pollution (Wei-Hsun Lee, Shian-Shyong et al., 2008; F.Don., 2004).

### 2. LITERATURE REVIEW

Tolls has a significant role in supporting road developments if traffic is further than a certain level, then the externalities of toll plaza in relations of time wasted, fuel consumed and incremental air pollution makes them an ineffective and counterproductive device for funding road. The objective of this project is to make an automatic toll