News letter of K.Ramakrishnan college of Technology

Issue 1 (December 2016)

K.RAMAKRISHNAN COLEGE OF TECHNOLOGY

ABOUT THE INSTITUITION

K.Ramakrishnan College of Technology, Tiruchirapalli, situated in the famous temple town Samayapuram, is a premiere organization striving to bring in constructive transformation in young aspirants by imparting technical, behavioral and value based education where we focus on empowering the students to get placed in World Class Corporate and introducing rich corporate culture to meet the hurdles and challenges of corporate sector and also augment the knowledge of students, foster their talents and broaden their outlook towards life by enhancing their personality, communication and bringing in entrepreneurial skills. We believe in educating, enhancing and empowering the student community to face the challenges of morrow and to be the front-runners in job market. We, at K.Ramakrishnan College of Technology, ensure that our students are equipped with the skill sets required to surmount the challenges of the competitive world.

VISION

To serve the society by offering top-notch technical education on par with global standards.

MISSION

We will strive to: Be a center of excellence for technical education in emerging technologies by exceeding the needs of the industry and society. Be an institute with world class research facilities. Be an institute nurturing talent and enhancing competency of students to transform them an all-round personality respecting moral and ethical values.

CHAIRMAN's MESSAGE

Dr.K.Ramakrishnan

Chairman

Education enables a person to face new challenges, achieve progress and lead a successful life. We, therefore, at K.Ramakrishnan College of Technology, would like to encourage all students to thrive for the best to make them knowledgeable in their relevant branches of engineering with high self -esteem and discipline. Education in our Institution is not only for academic brilliance but also for an ambiance where our ancient cultural heritage and human skills are enhanced. Our institution has set specific objectives and planned activities for achieving excellence in all spheres of technical education. The service of the institution in creating personally mature, professionally equipped and service-oriented graduates is really worth mentioning. We strongly believe in academic excellence and do not compromise on teaching standards or discipline. These three things are the springboards on which we operate. People who feel good about themselves produce good results and people who produce good results feel good about themselves. We also believe in total learning and sharing. Have a visit to K.Ramakrishnan College of Technology and feel good to get good education.

EXECUTIVE DIRECTOR MESSAGE

Engineers play the most vital and important role in nation building. They create new inventions using best engineered technologies to make human life more comfortable, secure and productive. In modern times, nations which have rich engineering and experienced management domains are flourishing economically and are providing better lives to their people We have excellent potential to grow in diversified areas and excel in Engineering and Management fields. We need enormous number of engineers and managers to write next story of success.

Dr.S.Kuppusamy
Executive Director

PRINCIPAL MESSAGE

Technical Education is the backbone of every nation and is the stepping stone for a country to move into the niche of a developed nation. The main focus of the Institution is to empower students with sound knowledge, wisdom, experience and training both at the academic level of Engineering and in the highly competitive global industrial market. The infrastructure facilities and state-of-the-art equipments combined with a galaxy of competent, talented and dedicated faculty contribute to an enjoyable and an easy learning experience. We wish the best for all our students, and the members of the institution who reiterate their aims at providing the best in academic and extra-curricular fields. We must believe that success is inevitable where these exist- Foresightedness, Firm Determination, Hard work and Discipline.

Dr. S.Muruganandam
Principal

FACILITIES

With quality education **K.Ramakrishnan College of Technology** has come forward extend a lot of facilities to the students

Conference halls
Laboratories
Gymnasium with modern equipments
Cafeteria
World class play ground
Library
Hostel
Transportation
Free Wi-Fi
Research lab

PLACEMENT

The Training and Placement Cell organizes a number of training programs for the students of all semesters with the help of in-house experts and experts drawn from professional agencies. The activities have proved exceptionally useful in shaping the career of students. The staff members of the placement cell work together as a team in molding the students to the requirements of various industries. In order to motivate and develop the personality of students, several HRD training programs are conducted regularly. To impart training to all students to develop their employability skills and to be good Corporate Executive and Civilized Citizen.

S.NO.	DEPT	NO. OF STUDENTS GRADUATED	PLACED COUNT	% OF PLACEMENT	SALARY	
					MAXIMUM	MINIMUM
1	CSE	108	70	64.81	4.50 LAP	1.20 LPA
2	ECE	123	96	78.05	4.50 LAP	1.20 LPA
3	EEE	68	45	66.18	4.50 LAP	1.20 LPA
4	MECH	136	86	63.24	3.25 LAP	1.20 LPA
5	CIVIL	59	32	54.24	3.39 LAP	1.20 LPA
OVERALL		494	329	66.6	4.50 LAP	1.20 LPA

RESEARCH PUBLICATION - FACULTY

Dr. S. SUGANTHI

1. Suganthi, S.; Murugesan, K.; Raghavan, S CPW Dependent Loss Analysis of Capacitive Shunt RF MEMS Switch.Applied Computational Electromagnetics Society Journal . Apr2016, Vol. 31 Issue 4, p410-416. 7p.
2. Suganthi, S.; Millimeter-Wave High-Gain Siw End-Fire Bow-Tie Antenna .International Journal Of Research & Technology(Ijert) .
3. Dr.S.Suganthi ,J.Deepa , Multiband Planar Antenna Using Mimo Technique operating in GSM 1800/Lte2500/Wimax/Wlan/Wifi International Journal Of Engineering Research & Technology (IJERT)

Ms. R. KALARANJANI

1. Kalaranjani. R An Integrated Dynamic Power Safeguard System Using Defence Surveillance Robots "Int J. Advanced Intelligence Paradigms

Mrs.NITHYA

1. Nithya. S Study On Creation Of Motion Pictures Inpainting Using Mean Shift Algorithm For Object Removal ,"International Journal Of Industrial Electronics And Electrical Engineering (Ijiee)

Mr. S.SHRIRAM

1. S.Shriram ,Real-Time Hand Gesture Recognition In FPGA , Optik - International Journal For Light And Electron Optics-SCI Volume 127, Issue 20, October 2016, Pages 9719–9726.

Mr.A.NAZAR ALI

1. Nazar ali. A,Power factor correction based bridgeless single switch SEPIC converter fed BLDC motor , International journal of advances in natural and applied sciences " ISSN 1995-0772,e-ISSN 1998- 1090, pp 190-197 ".
2. Nazar Ali .A.Ride through strategy for a three level dual Z- source inverter using TRIAC ,Scientific research Publication" ISSN-online:2153-1293 ISSN print -p2153-1285

Mr.R.JAIGANESH

1. Jai Ganesh.R, Fault identification and Islanding in DC Grid connected PV system ,Scientific research publishing "Circuits and systems,2016,7,2904-2915

Mr. R.RAMKUMAR

1. Ramkumar.R Renewable energy source based asymmetrical half bridge flyback converter ,International Journal of Applied Engineering Research and technology ,"ISSN 2278-0181 .
2. Ramkumar. R, A PV system based high step up converter with voltage multiplier module using fuzzy logic controller International Journal of Applied Engineering Research "ISSN 0973-4562 vol 10,no 9"

Mr. A.ANTON AMALAPRAVEN

1. Designing of improved hybrid electric bikes International Journal of advances in electrical and electronics engineering ISSN 2319-1112

Mr. S.KARTHICKPRABHU

1. A. Nichelson ,S.Karthickprabhu ,K.Karuppasamy, G. Hirankumar ,X. Sahaya Shajan ,A Brief Review on Integrated (Layered and Spinel) and Olivine Nano structured Cathode Materials for Lithium Ion Battery Applications ,Materials Focus, Volume 5,11 june,2016.

Dr.K.RAMASWAMY

1. Dr.V.SANGU, Dr.K.RAMASWAMY,Characteristic Investigation of a Newly Synthesized Mannich Base as a Corrosion Inhibitor for Mild-Steel in Hydrochloric Acid ,Joural of advances in chemistry,Volume 12,september,2016.

Mr. M. SHAHUL HAMEED

1. S.SABERINATH, M.THAYUMANAVAN, V.SAKTHI EASWARAN , Bio- Degradation Of Orange G Dye Using Microbial Action,International Journal Og Engineering Research & Technology, volume 4, part 25,2278-0181
2. K.Ragapriya, M.Sheela, R. Bindha ,Shahul Hameed.M ,Shanmugapriya.M,Bio-ethanol And Citric Acid Production From Banana Peel And Pineapple Peel By Fermentation Process,International Journal Og Engineering Research & Technology,Volume 4,part 25,2278-0182.
3. Shahul Hameed.M,B.Sathish Kumar Analysis Of Water Quality Parametersof Surface Water In Tiruchirapalli District, Tamil Nadu India, International Journal Of Engineering Research & Technology ,Volume 4,part 25,2278-0182.
4. S.Keerthivasan ,Shahul Hameed.M,An Experimental Investigation Of Treatment Of Tannery Industrial Waste Water By Using Electro Coagulation Method ,International Journal Of Civil Engineerring ,volume 5,part 16,1489-0726.

Ms. S.THARANI

1. Manju. T, Tharani.S, Study On Behaviour Of Cold Formed Steel Built Up Hat Section By Varying Depth, International Journal Of Applied Engineering Research,volume 9,part 16, 0973-4562

Mrs. G MALARVIZHI

1. SABERMATHI.R,G MALARVIZHI,Laboratory Study On Nano Clay Modifief Asphalt Pavement,International Journal Of Applied Engineering Research,Volume 10,part 8,0973-4562.

Scientific Research Publishing

Circuits and Systems, 2016, 7, 3911-3921
http://www.scirp.org/journal/cs
ISSN Online: 2153-1293
ISSN Print: 2153-1285

Ride through Strategy for a Three-Level Dual Z-Source Inverter Using TRIAC

A. Nazar Ali[1], Dr. R. Jeyabharath[2]

[1]K. Ramakrishnan College of Technology, Trichy, Tamilnadu, India
[2]K.S.R Institute for Engineering and Technology, Namakkal, Tamilnadu, India
Email: krcthodeee@gmail.com

How to cite this paper: Nazar Ali, A. and Jeyabharath, Dr.R. (2016) Ride through Strategy for a Three-Level Dual Z-Source Inverter Using TRIAC. *Circuits and Systems*, 7, 3911-3921.
http://dx.doi.org/10.4236/cs.2016.711326

Received: April 7, 2016
Accepted: May 1, 2016
Published: September 30, 2016

Copyright © 2016 by authors and Scientific Research Publishing Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).
http://creativecommons.org/licenses/by/4.0/
Open Access

Abstract

A new ride through strategy is introduced in a three-level dual Z-source inverter, for isolation under semiconductor switching failure condition. Here the output will have no significant decrease in the amplitude and quality. Instead of diodes, the triacs are added to the inverter source ends, as it can perform a bidirectional power transfer also it can operate well in both low and high voltage operating conditions. The faulted part can be isolated by simply altering the firing pulses for turning on/off the triacs using the carrier based SPWM technique and resulting in a boosting output with zero common mode voltage. Consequently, it forms a common floating point or null point with a zero common mode voltage. It is experimentally verified by using MATLAB, and digital oscilloscope.

Keywords

Common Mode Voltage, Fault Compensation, Three-Level Inverter, Sinusoidal Pulse Width Modulation, Z-Source Inverter

1. Introduction

The conventional converters have many blockades, such as high distortion, losses with a variation at the amplitude of the output during faulty conditions. To overcome the limitations and problems of the traditional converters, an impedance-source (or impedance-fed) power converter (that can be abbreviated as ZSC) is introduced. Figure 1 depicts the general structure of ride through strategy introduced in the dual ZSI. The ZSI is a special impedance network (or circuit) that connects the voltage source converter and current converter, main circuit to the power source, load, or another converter, for providing special features that cannot be seen in the conventional converters [1] [2].

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 10, Number 9 (2015)
© Research India Publications ::: http://www.ripublication.com

A SINGLE STAGE CONVERSION OF HIGH VOLTAGE GAIN PV BASED BOOST CONVERTER FOR DC DRIVES

Kalavalli.C[1],Shanmugapriya.B[2] Umamaheswari.T[3]
Assistant professor[1]&[2] ,PG scholar3
K.Ramakrishnan College Of Technology,Trichy
umaeee02@gmail.com[1], krcthodeee@gmail.com[2]

ABSTRACT:-This project presents a high-voltage gain boost converter topology based on the three-state commutation cell for battery charging using PV panels and a reduced number of conversion stages and switches. The presented converter operates in zero-voltage switching mode for all switches. By using the concept of single-stage approaches, the converter can generate a dc bus with a battery bank or a photovoltaic panel array. By adding the PI controller in closed loop manner for attaining the constant output voltage. DC motor is used as a load which is supplied by either PV panel or battery.

Key words—Battery chargers, dc–dc power conversion, photovoltaic power systems.

INTRODUCTION

Renewable energy is energy that is generated from natural processes that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water, and various forms of biomass. This energy cannot be exhausted and is constantly renewed. Renewable energy resources exist over wide geographical areas, in contrast to other energy sources, which are concentrated in a limited number of countries. Rapid deployment of renewable energy and energy efficiency is resulting in significant energy security, climate change mitigation, and economic benefits. In international public opinion surveys there is strong support for promoting renewable sources such as solar power and wind power. At the national level, at least 30 nations around the world already have renewable energy contributing more than 20 percent of energy supply. National renewable energy markets are projected to continue to grow strongly in the coming decade and beyond.

A proportional control system is a type of linear feedback control system. Proportional control is how most drivers control the speed of a car. If the car is at target speed and the speed increases slightly, the power is reduced slightly, or in proportion to the error (the actual versus target speed), so that the car reduces speed gradually and reaches the target point with very little, if any, "overshoot", so the result is much smoother control than on-off control. In a proportional control of a plant whose transfer function doesn't possess an integrator 1/s, there is a steady-state error, or offset, in the response to a step input. Such an offset can be eliminated if integral controller is included in the system. In the integral control of a plant, the control signal, the output signal from the controller, at any instant is the area under the actuating error signal curve up to that instant. But while removing the steady-state error, it may lead to oscillatory response of slowly decreasing amplitude or even increasing amplitude, both of which is usually undesirable.

In control engineering, a PI Controller (proportional-integral controller) is a feedback controller which drives the plant to be controlled by a weighted sum of the error (difference between the output and desired set-point) and the integral of that value. It is a special case of the PID controller in which the derivative (D) part of the error is not used.

The PI controller is mathematically denoted as:
cpiIG=K(1+)

Integral control action added to the proportional controller converts the original system into high order. Hence the control system may become unstable for a large value of Kp since roots of the characteristic eqn. may have positive real part. In this control, proportional control action tends to stabilize the system, while the integral control action tends to eliminate or reduce steady-state error in response to various inputs.

As the value of Ti is increased,

- Overshoot tends to be smaller
- Speed of the response tends to be slower.

In a ZV resonant switch, a capacitor C, is connected in parallel with the switch S for achieving zero-voltage-switching (ZVS). If the switch S is a unidirectional switch, the voltage across the capacitor C, can oscillate freely in both positive and negative half-cycle. Thus, the resonant switch can operate in full-wave mode. If a diode is connected in anti-parallel with the unidirectional switch, the resonant capacitor voltage is clamped by the diode to zero during the negative half-cycle. The resonant switch will then operate in half-wave mode. The objective of a ZV switch is to use the resonant circuit to shape the switch voltage waveform during the off time in order to create a zero-voltage condition for the switch to turn on. Soft switching for the power devices can be achieved by either zero-voltage switching (ZVS) or zero-current switching (ZCS). ZVS consists of turning on the switches while the voltage across them is zero.

RESEARCH PROJECTS (IN PROGRESS)

Dr. V. VIJAYAN, Dr. B.SURESHKUMAR

1. Recent trends in advanced manufacturing process funded by Tamilnadu State Council For Science And Technology, 7th December 2015.
2. Recent trends in advanced manufacturing process funded by Tamilnadu State Council For Science And Technology, 7th January 2016.

Dr. V. VIJAYAN, Dr. B.SURESHKUMAR

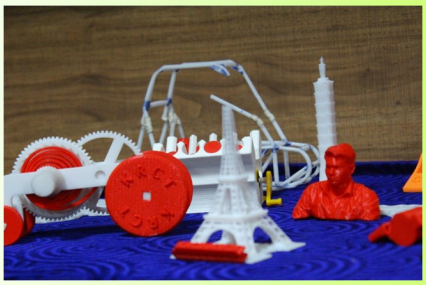
1. Recent trends in robot technology funded by ISRO, march 15th 2016.
2. Recent trends in nano technology funded by DRDO, march 24th 2016.

Dr. V. VIJAYAN

1. Additive manufacturing funded by Tamilnadu State Council For Science And Technology,3rd august 2016.

Mr. L.NAGARAJAN, Mr. R.JAI GANESH

1. Arduino Based Underground Cable Fault Detection funded by Tamilnadu State Council For Science And Technology, 2016
2. Gsm Based Remote Monitoring Of 8 Parameters Of Transformer / Generator Health funded by Tamilnadu State Council For Science And Technology, 2016.
3. Arduino Based Wireless Electrical Apparatus Control System Using Ir Communication funded by Tamilnadu State Council For Science And Technology, 2016.
4. Solar Powered Irrigation System funded by Tamilnadu State Council For Science And Technology, 2016.



NSS ACTIVITIES

In a contribution for the nation and to be the part of CLEAN INDIA project, a 50 volunteer members of the college jointly with The District Administrator, Trichy participated in cleaning Theppakulam of Trichy. The students from K.Ramakrishnan College of Technology helped the District Administration in removing garbage's, plastic bottles and cleaning the slit . Dr. S. Muruganandam, Principal advised all the participant to involve in such activities to enhance their social skills.

BLOOD DONATION CAMP

To cater the needs of the poor and to contribute socially K.Ramakrishnan College of Technology along with Government Hospital, Manaparai organized a blood donation camp in the college premises. A 50 blood donors from various department donated their blood for the social welfare with great support and guidance from the college Principal, Dr. S. Muruganandam .

HELMET AWARNESS RALLY

A group of 50 NSS volunteer from K.Ramakrishnan college of Technology enthusiastically took part in an awareness rally from No 1 Toll gate zone and emphasized the importance of road safety measures like following the rules promptly ,wearing helmet and seat belt, avoiding drink and drive commuting.

INDEPENDENCE DAY

The Independence Day at K.Ramakrishnan college of technology was an event that stirred up the patriotic feelings of everyone present on the occasion. The Chief guest hoisted the flag and delivered the speech exhorting students to take India as a bright future and the day

REPUBLIC DAY

The Republic Day was marked by the unfurling of the national flag by the Chief guest. In his speech, the chief guest mentioned the significance of the day to students and staff. Students, and staff gathered on the occasion and celebrated the day with gusto and a determination to take to K.Ramakrishnan College of Technology to newer heights.

SPORTS ACHIEVEMENTS

Annual Sports Meet conducted on 1st April 2016.

Our college students participated and won various tournaments conducted by various colleges. The achievements are given below

Badminton (Men)-Runner –Conducted by MAM School of engineering , Trichy during 2016-17.

Chess (Men) Winner –Conducted by Trichy engineering college, Trichy during 2016-17.

Kabadi (Men) Runner –Conducted by SACET, Trichy during 2016-17.

Hockey(Men) Runner -Conducted by Jayaram college of engineering ,Trichy during 2016-17.

Table Tennis (Men) Runner –Conducted by TRP Engineering college, Trichy during 2016-17.

Basket Ball (Women) Runner -Conducted by SACET, Trichy during 2016-17.

Ball Badminton (Men) Runner -Conducted by Jayaram college of engineering ,Trichy during 2016-17.

REPUBLIC DAY CELEBRATION

Handover the Trophy to our beloved Chairman

STUDENTS MARCHPAST

OTHER ACTIVITIES

Department of ECE

INTEL WORKSHOP- 28.12.2015 to 31.12.2015

VLSI WORKSHOP- 21.12.2015 to24.12.2015

OPTICAL COMMUNICATION SEMINAR-on 5th SEP 2015

WIRELESS COMMUNICATION SEMINAR -on 19th SEP 2015

ANTENNA AND WAVE PROPAGATION SEMINAR-on 18th SEP 2015

CIRCUIT THEORY SEMINAR -on 18th MARCH 2016

Department of MECHANICAL

Achievers day was conducted on 2015

SAE Inauguration on 2016

COLLABORATIVE COURSES "Quad copter Training Program " on 17th march 2016

COLLABORATIVE COURSES "NON-DESTRUCTIVE TESTING" on 29th Sep 2016

COLLABORATIVE COURSES "PIPING" on 30th Sep 2016.

Department of Computer Science

FDP on 22nd and 23rd august

IOT Workshop on 10th June 2016

Java VAC on 12th to 16th July 2016

Python workshop on 13th to 16th July 2016

Department of EEE

Workshop on Innovative Electronics during 2016-17

Workshop on Embedded System Pic Controller

during 2016-17

Workshop on Proteus Professional Software & Psim For Power Converter & Controller Design during 2016-17

Workshop on Power Electronic Converter during 2016-17

Workshop on Innovative Electronics during 2016-17

Workshop on Basics Of Electronics during 16-17

Department of CIVIL

1. Value added course conducted on various topics

   MSP PROJECT(60 HRS Duration)- CADD CENTRE

   STAAD .Pro (60 hrs. duration)-ISS CADD CENTRE

   Auto cadd (60 hrs. Duration) – ISS CADD CENTRE

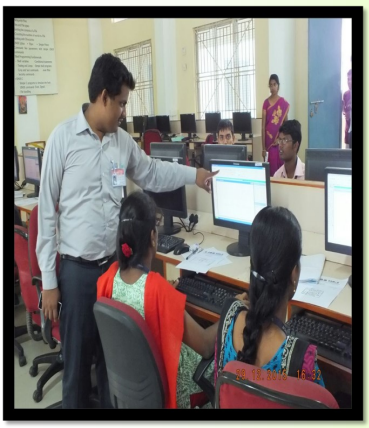
2. Seminar Given By Professor David ,NEW ZEALAND (30.8.2016)

3. Workshops Organized on Various Tittles

   3D Printing

   Total Station

   Concrete technology- RAMCO cement



CULTURAL AND CO CURRICULAR ACTIVITIES

We are actively engaged in providing the students with an extensive range of cultural and co-curricular activities. Keeping in line with this commitment our college organizes Annual Techno– cultural Fest Synergy. It is the much awaited events with multiple events in dance, music, fashion, drama, literary and various other technical and cultural fields and offers a plethora of opportunities to the students to showcase their talents

INVITED SEMINARS TO K.RAMKRISHNAN COLLEGE OF TECHNOLOGY

DEPT	YEAR	DATE	RESOURCE PERSON
CSE	II	13.08.16	DR.MOHAN, AP/NIT
	III	17.08.16	DR.SRIMATHI,AP/NIT
	II	23.08.16	DR.SIVASANKAR,AP/NIT
	II	12.09.16	DR.SIVASANKAR,AP/NIT
	III	14.09.16	DR.GOPI,AP/NIT
MECH	IIII	11.08.16	DR.RAMESH, AP/NIT
	II	13.08.16	DR.SURESH, AP/NIT
	II	13.08.16	DR.MARIAPPAN,AP/NIT
	III	27.09.16	SIVAKUMAR,AP/MAMCE
EEE	IIII	24.08.16	DR.P.RAJA,AP/NIT
	IV	10.09.16	DR.P.RAJA,AP/NIT
	II	14.09.16	DR.S.MOORTHY,AP/NIT
	IV	14.09.16	DR.M.P.SELVAN,AP/NIT
ECE	III	19.07.16	DR.JEGAJOTHI,PROF / PMU
	III	02.09.16	DR.PANDEESWARI,AP/
	II	02.09.16	DR.DEIVALAKSHMI
CIVIL	IV	17.09.16	DR.VIJI,PROF/NIT
CIVIL	IV	30.08.16	DR.SATHYAPRABHA
CIVIL	III	21.09.16	DR.MOSES SANTHAKUMAR

ACKNOWLEDGMENT

We thank all the faculty members, administrative staff and students of K. Ramakrishnan college of Technology for their help and cooperation in bringing out the newsletter

EXISTING DEPARTMENTS

Department of Science and Humanities

Department of CIVIL

Department of EEE

Department of MECHANICAL

Department of ECE

Department of CSE

EDITORIAL BOARD

Dr. A. NAZAR ALI., ME., PhD.,

HOD/EEE,K.RAMKRISHNAN COLLEGE OF TECHNOLOGY,

TRICHY-621112

CONTACT

K.RAMAKRISHNAN HEALTH AND EDUCATIONAL TRUST

Kariyamanikam Road, Samayapuram, Trichy – 621112.

Telephone: 0431 – 2670799 E-Mail : Krct.Trichy@gmail.Com