POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003197
Date :	26/11/12

Bill No. : KVB 3771 *Date* : .....

Head of Account : K. Surendra Babu (Mech)

Contents of the bill : Reimbursement of fee for NPTEL Course purpose.

Amount : 1100/-

K. Surendra
Receiver's Signature

Treasurer

Secretary & Correspondent

VIJAYAWADA,
Date: 22/11/2018.

From:
K.Surendra Babu,
Asst. Prof., MED,
PSCMRCET,
Vijayawada.

To
The Principal,
PSCMRCET,
Vijayawada.

Sub: Reimbursement of fee for NPTEL courses – Reg.

Respected Sir,

I, K.Surendra Babu is working as Assistant Professor in Mechanical Engineering Department. I have successfully completed NPTEL course on "INTRODUCTION TO RESEARCH" and got the certificate. I am herewith attaching the Xerox copy of the certificate.

The amount of the exam fee (1 x 1100/-=1100/-) may kindly be reimbursed.

Thanking you sir,

Yours faithfully,
K. S
(K.Surendra Babu)

Recommended
22/11/18

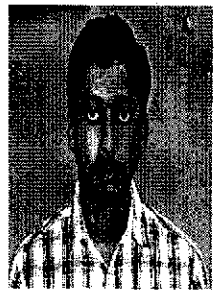
Rec. for reimbursement.
22/11/18

Ok
24/11/18

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



TOP TOPPER 1%

This certificate is awarded to

Surendra Babu Koganti

for successfully completing the course

Introduction to Research

with a consolidated score of **90** %

Online Assignments	24.29/25	Proctored Exam	65.29/75

Total number of candidates certified in this course: **836**

A. Ramesh

Prof. A. Ramesh
Chairman
Center for Continuing Education, IITM

Aug-Sep 2018
(8 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No: NPTEL18GE12S11930388

To validate and check scores: http://nptel.ac.in/noc

(2)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003196
Date :	26/11/18

C

Bill No. : KUB 3771 *Date* : .....

Head of Account : E. Rama Krishna Reddy (Mech)

Contents of the bill : Reimbursement of fee for NPTEL courses purpose.

Amount : 1100/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

VIJAYAWADA,
Date: 22/11/2018.

From:
E. Rama Krishna Reddy,
Asst. Prof., MED,
PSCMRCET,
Vijayawada.

To:
The Principal,
PSCMRCET,
Vijayawada.

Sub: Reimbursement of fee for NPTEL courses – Reg.

Respected Sir,

I, E. Rama Krishna Reddy is working as Assistant Professor in Mechanical Engineering Department. I have successfully completed NPTEL course on "REFRIGERATION & AIR CONDITIONING" and got the certificate. I am herewith attaching the Xerox copy of the certificate.

The amount of the exam fee (1 x 1100/-=1100/-) may kindly be reimbursed.

Thanking you sir,

Yours faithfully,

(E. Rama Krishna Reddy)

Recommended
22/11/18

Rec. for reimbursement
22/11/18

Ok
26/11/18

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

E.RAMA KRISHNA REDDY

for successfully completing the course

Refrigeration And Air-Conditioning

with a consolidated score of **70** **%**

Online Assignments	23.63/25	Proctored Exam	45.92/75

Total number of candidates certified in this course: **672**

Prof. B. K. Gandhi
Coordinator, Continuing Education Center
NPTEL Coordinator, IIT Roorkee

Aug-Sep 2018
(8 week course)

Indian Institute of Technology Roorkee

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No: NPTEL18ME46S11930290

To validate and check scores: http://nptel.ac.in/noc

(3)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003191
Date :	23/11/18

Bill No. : KVB3771 *Date* : .....

Head of Account : K.V. Lakshmi Narayana

Contents of the bill : Reimbursement of NPTEL Exam Fee purpose.

Amount : 2,200/-

27/11/18

Receiver's Signature *Treasurer* *Secretary & Correspondent*

22nd Nov 2018

To

The principal

PSCMRCET

Vijayawada – 1

Dear Sir

Sub: Reimbursement of NPTEL Exam Fee – Reg.

I have successfully completed Two NPTEL courses in the Jul-Oct 2018 Semester. They are:

(1) Foundation engineering with 88% and in top 1% (Got 3rd Rank out of 411) and

(2) Geotechnical Engineering laboratory with 90% and in top 5% (Got 19th Rank out of 690).

My name and photo with our college name is displayed in the NPTEL portal for both the courses.

The Exam fee of (2XRs.1100 =) Rs.2200/- (Rupees twenty two hundred) may kindly be reimbursed to me.

I am enclosing the certificates.

With warm Regards,

Yours sincerely

22/11/18

K.V. Lakshmi Narayana

Professor of Civil Engineering

PSCMRCET

Recommended for reimbursement.

23/11/18

23/11/18

Roll No:NPTEL18CE16S12160840

To
POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING AND TECHNOLOGY
VIJAYAWADA

5/371

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:3

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

TOP TOPPER 1%

This certificate is awarded to

KALAGARA VENKATA LAKSHMI NARAYANA

for successfully completing the course

Foundation Engineering

with a consolidated score of **88** %

Online Assignments	25.00/25	Proctored Exam	63/75

Total number of candidates certified in this course: **411**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

A. Goswami
Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No:NPTEL18CE32S22141151

To
POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING AND TECHNOLOGY
VIJAYAWADA

12/371

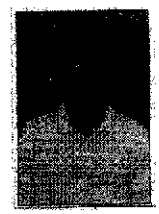
Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:1

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



TOP TOPPER 5%

This certificate is awarded to

KALAGARA VENKATA LAKSHMI NARAYANA

for successfully completing the course

Geotechnical Engineering Laboratory

with a consolidated score of **90** **%**

Online Assignments	23.33/25	Proctored Exam	67.01/75

Total number of candidates certified in this course: **690**

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay

Aug-Sep 2018
(4 week course)

Indian Institute of Technology Bombay

swayam

(4)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003093
Date :	8/11/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : M. Victor Johnson

Contents of the bill : Salary Advance Purpose.

.....

Amount : 20,000/-

M. Victor Johnson

Receiver's Signature

Treasurer

Secretary & Correspondent

From

08-11-2018
Vijayawada

M.Victor Johnson
Physical Director
Department of Physical Education
P S C M R C E T
Vijayawada.

To
The Secretary
P S C M R C E T
Vijayawada.

// through proper channel//

Respected Sir,

Sub: Request for advance from salary– Reg.

This is with reference to above stated subject I request your kind self to provide me a sum of twenty thousand rupees as advance from my salary to get my Master Of Physical Education original certificates from Nasikrao Tirpudi College of Physical Education affiliated to NAGPUR University. Hence I request your kind self to do the needful as early as possible.

Please deduct the above said amount from my salary within six months .

Thanks in anticipation,

With warm regards,

M. Victor Johnson P.D

(M.VICTOR JOHNSON)

give advance of 20K and deduct from his salary in six months

8/11/18

(3)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003083
Date :	3/11/18

C

Bill No. : KVB 3771 *Date* : .....

Head of Account : K. Sudhakar

Contents of the bill : Advance to book tickets for the event on Nov' 27th, 2018 p.corpor.

Amount : 5000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Department of Computer Science & Engineering

Date: 29-10-2018

To
The Principal,
PSCMRCET VIJ-1.

Sub: *Request to sanction the following advance towards the TA Expenses of the Event on November 27th* –Reg

Respected Sir,

It is to bring to your kind notice that **Mr S Narendra Kumar and Prof V Ramamoorthy ISRO Retd.,** are attending the event (2Day Workshop) of ***Indian Society of Systems for Science and Engineering Chapter.*** More than 30 Faculty are life members in this society.

The following advance is needed to book tickets for the schedule given below:

- 2 AC, 27th From Chennai to Vijayawada
- 2AC, 28th From Vijayawada to Chennai

Thanking you Sir,

"Rs. 5000/- Five thousand" Sudhakar 3/11/18

Yours Sincerely

Program Coordinator
K.Sudhakar, Assoc.Prof of CSE

Recd. 29/10/18

Forwarded to Principal Sir

AM

The ~~workshop~~ Workshop provides an insight into the opportunities in the area of space domain for CSE, ECE, EEE, and ME domains.

AM

(6)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003110
Date :	13/11/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : Ch. Aruna Kumari

Contents of the bill : Advance for paper registration purpose

Amount : 5,000/-

Ch. Aruna

Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada
8-11-2018

TO,
The principal,
PSCMRCET,
Vijayawada.

SUB: Request to grant advance for paper Registration Reg..

Respected sir,

I CH. Aruna kumari working as Lab Technician in ECE department. sir I have submitted a paper to springer conference and is accepted on 28-10-2018, titled with "Design of Low power SAR ADC with two differential DAC structures and two different SAR logic designs and their comparision" the proceedings are published in springer link and scoopus indexed journals.

As I have to registes for that, so, I request you grant me advance amount of 9000/-

Thanking you sir,

Yours sincerely
Ch. Aruna
[CH. Aruna kumari]

Forwarded
8/11/18

OK for SK
Submission
12/11/18

Noted
10/11/18

Gmail

aruna kumari <chirapangiarunakumari@gmail.com>

ISDA 2018 notification for paper 193

ISDA 2018 <isda2018@easychair.org>
To: Chirapangi Aruna Kumari <chirapangiarunakumari@gmail.com>

Mon, Oct 22, 2018 at 5:53 PM

Dear Chirapangi Aruna Kumari,

ISDA Paper # 193:
ISDA Paper Title: Design of low power SAR ADC with two different DAC structure and two different SAR logic designs and their comparisons :

Congratulations! On behalf of the ISDA 2018 Technical Program Committee, we are pleased to inform that your paper has been accepted for oral presentation at the 18th International Conference on Intelligent Systems Design and Applications (ISDA) to be held in VIT, Vellore, India and for publication in the conference proceedings, which will be published by Springer Verlag. Each paper was send to at least five independent reviewers and based on their recommendations your paper was accepted for oral presentation.

This email provides you with all the information you require to complete your paper and submit it for inclusion in the proceedings. Please read carefully and here are the steps you must follow:

1. Please see the reviewers' comments attached below, which are intended to help you to improve your paper for final publication. The listed comments should be addressed, as acceptance is conditional on appropriate response to the requirements and comments. ISDA 2018 requires that the submitted manuscript is solely from the author's own work and not from the work of others, unless explicit permission has been granted. This includes text, figures and tables. Information from published articles must always be cited explicitly. Proper citation is to give the credit to the work that is originally published, not to follow-up work or reviews. Citations should be given close to the information within the sentences or at the end of the sentence, not after several sentences or near the end of the paragraph. Even when citations are given, exact copying of a whole sentence or paragraphs should be indicated by quotation marks. Furthermore, reuse of part of a published figure or table re!
quires a copyright permission from the publishers that hold the rights. All re-published figures and tables should explicitly indicate the original source.

2. Please see the author kit from the link given below, for the detailed information concerning the formatting of the final manuscript for inclusion in the proceedings.
http://www.mirlabs.net/isda18/guidelines.php

3. In order for your paper to be published in the conference proceedings, a signed Springer Copyright Form must be submitted for each paper. Prepare your manuscript for final camera ready submission. Follow carefully and completely all the instructions given in the author kit link and upload the camera ready paper (source files + PDF) copyright form and registration receipt (as a zipped archive) using your easychair author account: https://easychair.org/conferences/?conf=isda2018
You will also receive another email regarding detailed submission procedures.

All papers submitted through the web site are considered to be in final form and ready for publication. Do not submit your paper until you are ready. A good suggestion is to have a few colleagues review your paper to provide final remarks on its suitability before submitting it through the web site. Following are the limits for papers.

Regular papers: 10 pages. Up to 2 extra pages (max 12 page limit!) may be purchased. Please see details from the following: http://www.mirlabs.net/isda18/registration.php

If you have any problems to access the author kit or to clarify any doubts, please email the Publication Chair, Dr. Niketa Gandhi <niketa.gandhi@mirlabs.org>

-------- Overall evaluation --------
This paper describes design of low power SAR ADC, but this topic is out of the scope of ISDA conference. Moreover the paper is longer than allowed

---------- REVIEW 2 ----------
PAPER: 193
TITLE: Design of low power SAR ADC with two different DAC structure and two different SAR logic designs and their comparisons
AUTHORS: Chirapangi Aruna Kumari and G.M.G. Madhuri

Overall evaluation: 1 (weak accept)

-------- Overall evaluation --------
The topic appears interesting theoretically, however the paper is limited in its application, as well as it requires a lot of efforts to improve it. My general comments are:

1. The main contribution and motivation is not clear.
2. Discussion of related work is weak. Need to improve literature review section with new references
3. Need more comparisons with related work
4. Paper needs to be shortened

** Deadline for camera ready paper papers: November 10, 2018 **

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4. An accepted paper will be published in the proceedings only if the final version is accompanied by the registration and payment information for at least one of the authors. Online Registration information is possible through the following link: http://www.mirlabs.net/isda18/registration.php

At least one author must attend the conference to present his/her papers. If an author has more than one accepted paper, he/she must pay the full registration fee plus extra paper charges. ISDA 2018
registration fee includes the conference proceedings, admission to technical sessions, coffee breaks, lunches.

** Registration deadline: November 10, 2018 **

To qualify for discounted rates, all authors should have affiliation from the same discounted country (or in the provided list of countries). Be sure to register by November 10, 2018 to ensure that your paper is included in the proceedings. Registering late may mean that your paper may not appear in the proceedings. If you have any questions regarding registration, please email <ajith.abraham@ieee.org>.

Please note that all deadlines are firm and no extensions are possible. Please try to complete the above steps as soon as possible. Thank you for participating in what promises to be an excellent meeting. Looking forward to seeing you soon in Vellore, India during ISDA 2018.

Sincerely,

General Chairs
Ajith Abraham, Machine Intelligence Research Labs (MIR Labs), USA
Aswani Kumar Cherukuri, Vellore Institute of Technology, India

Program Chairs
Patricia Melin, Tijuana Institute of Technology , Mexico
Emilio Corchado, University of Salamanca, Spain
Florin Popentiu Vladicescu, University "Politehnica" in Bucharest, Romania
Ana Maria Madureira, Instituto Superior de Engenharia do Porto, Portugal

Please consult the web site for all latest information related to ISDA 2018:

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http://www.mirlabs.org/isda18
http://www.mirlabs.net/isda18

---------- REVIEW 1 ----------

PAPER: 193
TITLE: Design of low power SAR ADC with two different DAC structure and two different SAR logic designs and their comparisons
AUTHORS: Chirapangi Aruna Kumari and G.M.G. Madhuri

Overall evaluation: -2 (reject)

(7)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003082
Date :	3/11/18

Bill No. : EVB 3771 *Date* :

Head of Account : 4/s neft

Contents of the bill : Neft for MoU Purpose to Global Trade Driver - CSE.

Amount : 15000/-

Receiver's Signature

Treasurer

Secretary & Correspondent

PSCMRCET EMAIL

Dr. A. Pathanjali Sastri <cse.hod@pscmr.ac.in>

The Global Trade Driver

1 message

The Global Trade Driver <info@tgtd.biz> Tue, Oct 30, 2018 at 7:55 AM
To: "Dr. A. Pathanjali Sastri" <cse.hod@pscmr.ac.in>

Dear Professor Patanjali

Greetings to you Sir.

Please find below the bank account details of The Global Trade Driver .

We appeal and welcome you to join as a member of The Global Trade Driver.

Thanking you

With best regards

D V Venkatagiri
CEO
The Global Trade Driver / Explore The Space
Chennai

MOU Fees AWR

"The Global Trade Driver" – Bank Account Details

Account Name : The Global Trade Driver

Rs 15000/-
3/11/18

Bank:	CITY UNION BANK LIMITED
Branch:	K K Nagar Branch, Chennai – 600 078
Account No	500101011757783
IFSC CODE	CIUB0000184

PSCMRCET EMAIL

Dr. A. Pathanjali Sastri <cse.hod@pscmr.ac.in>

Certificate Programme on Space Sciences & Technology

2 messages

The Global Trade Driver <info@tgtd.biz> Sun, Sep 23, 2018 at 9:21 PM
To: "Dr. A. Pathanjali Sastri" <cse.hod@pscmr.ac.in>

Dear Pathanjali

Greetings from The Global Trade Driver !

It was my pleasure talking to you today. We are launching our one-day **Certificate programme on Space Sciences and Technology.** The participants in this workshop can be third and fourth year college students.

There are lot of opportunities provided by Space technology/ sciences . The recent developments in Space Sciences has led to a plethora of opportunities – in material sciences, advanced metals, cosmology, stellar science, planetary science, astronomy etc. The spin off benefits of Space research is growing fast. India with its rapid achievements in Space Technology and good availability of human resources is well-positioned to capitalise this.

Requirements:

1) We need about 150 to 200 Students from the third and final year Engineering to participate in this workshop

(Electrical & Electronics , ECE, CSE, Mechanical and others).

2) Registration fee per participant is Rs. 300 .

3) Travelling and Accommodation to be provided for one resource person (from Chennai or Bengaluru).

4) Seminar Hall with Audio Visual arrangements.

5) Tea / Lunch for the participants.

Benefits:

1) Certificate will be issued to all student participants.

2) Course material will be provided to all student participants.

3) The Course will give a good idea for the Students to pursue career opportunities in Space and related areas.

4) This will further improve the brand image of your institution, make you as the first mover, and can open door to new opportunities.

5) New linkages with the industry and government in related sector.

We will be glad to have the opportunity to launch the same in your esteemed institution

Looking forward to hearing from you,

Thanking you

With best regards

D V Venkatagiri

CEO

The Global Trade Driver / Explore The Space

Chennai

Dr. A. Pathanjali Sastri <cse.hod@pscmr.ac.in> Thu, Sep 27, 2018 at 5:39 PM
To: The Global Trade Driver <info@tgtd.biz>

Dear Giri,

We can plan for this workshop done as per your schedule. But, what I feel is we need to workout the candidate fee.

Regards
[Quoted text hidden]
--

Dr. A. Pathanjali Sastri

Professor & Head

Department of CSE,PSCMR College of Engineering and Technology
*Kothapet, Vijayawada-01.**Andhra Pradesh,*
India.
Mobile: 9848409689

(8)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003201
Date :	26/11/18

Bill No. : KVB3771 *Date* : .....

Head of Account : D. Suresh Babu (ECE)

Contents of the bill : Reimbursement for NPTEL certification purpose.

Amount : 1100/-

Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada,
24-11-2018.

To,
The Principal,
PSCMR college of Engg & Tech,
VIJAYAWADA.

Respected Sir,

I (D. suresh Babu) working as Asst. Professor in the department of ECE. I have registred and sucessfully completed two NPTEL-FDP Courses i.e, Introduction to IOT, and Outcome Based pedagogic principles for Effective Teaching in month of october, 2018. Please reimburse the amount spent for the course for registration i.e, Rs 1100/-

Thanking you Sir,

Yours Sincerely,
D. Suresh Babu,
Asst. Professor,
Department of ECE.

Recommended
24/11/18.

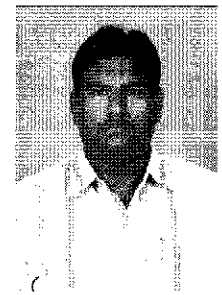
Recommended for reimbursement.
24/11/18

26/11/18

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

DONEPUDI SURESH BABU

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of **75** **%**

Online Assignments	17.81/25	Proctored Exam	57/75

Total number of candidates certified in this course: **3617**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

A. Goswami

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

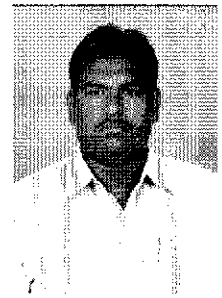
FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No: NPTEL18CS46S12161105

To validate and check scores: http://nptel.ac.in/noc

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

DONEPUDI SURESH BABU

for successfully completing the course

Outcome based pedagogic principles for Effective Teaching

with a consolidated score of **41** **%**

Online Assignments	12.17/25	Proctored Exam	29/75

Total number of candidates certified in this course: **966**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Aug-Sep 2018
(4 week course)

A. Goswami

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

Roll No: NPTEL18GE15S22141311

To validate and check scores: http://nptel.ac.in/noc

NPTEL

ar **DONEPUDI SURESH BABU** ,

ur application **STOCT1810146052** for NPTEL Online Certification exam to be held in Oct 201
s been successfully submitted

w that you have registered for the certification exam, we hope you are following the course a
ps://onlinecourses.nptel.ac.in. Ensure you login , watch videos and submit assignments
ularly (at least every week). Happy learning!

anks and Best wishes.

ur Payment Details:

id Amount: 1100.00

nsactionid: 5F9863B0FC857125AA43AB3C

yment Method: Direct Pay Via Billdesk

yment Status: Success

anks and Best wishes,
TEL team

This is an auto generated mail, do not reply. In case of queries please mail: nptel@iitm.ac.i

(9)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003194
Date :	26/11/18.

Bill No. : KVB 377/ *Date* : .....

Head of Account : Yourself

Contents of the bill : Advance for the payment of ISTE Membership - EEE Dept purpose in 3 instalments (3480 X 10 = 34,800/-)

Amount : 34,800/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

DEPARTMENT OF ELECTRICAL AND ELCTRONICS ENGINEERING

Date : 22/11/2018

From

Mr .Y.Rajendrababu,
Head of the Department,
EEE Department,
PSCMRCET,
Vijayawada.

To

Secretary & Correspondent,
PSCMRCET,
Vijayawada.

//Through Proper Channel//

Respected Sir,

Sub : Advance for the payment of ISTE Membership- regd.

The department is encouraging the faculty members to get the membership of ISTE. 10 faculty members of our department require an advance of Rs. 3,480/- (Three thousand four hundred and eighty rupees only) each, to pay the membership fee of ISTE. This amount can be collected back by the management in 3 EMI's from them. I am here with providing the list of members.

Head of the Department

22/11/18

Mr .Y.Rajendrababu
HOD-EEE
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Faculty Names:

1. Mr. Musthak Ahmed Shaik
2. Mr . P. Manoj Kumar
3. Mr. V. Rajesh
4. Mr . K.Narendra
5. Mr .K.Lakshmi Ganesh
6. Mr . R.Rajesh
7. Mr. V Matthew
8. Mr. N.Saida Naik
9. Mrs . A. Sai Pallavi
10. Mrs. L.Srujana

24/11/18

Received on 24/11/18

Noted
23/11/18

3480X10 = 34,800/-

PSCMR COLLEGE OF ENGINEERING & TECHNOLOGY

Door No.7-3-6/1 Raghavareddy Street, Kothapet, Vijayawada -1

Date:27-11-2018

S NO	NAME	A/C NO	Amount
1	Musthak Ahmed Shaik	1414166000006722	3480
2	P.Manoj Kumar	1414166000003645	3480
3	V.Rajesh	1414166000003820	3480
4	K.Narendra	1414166000003813	3480
5	K.Lakshmi Ganesh	1414166000014367	3480
6	R.Rajesh	1414166000013646	3480
7	V.Matthew	1414166000011093	3480
8	N.Saida Naik	1414166000010839	3480
9	A.Sai Pallavi	1414166000006222	3480
10	L.Srujana	1414166000004636	3480
			34800

Chq No 003194 , Dt:26/11/2018,Rs.34,800/-(Thirty four thousand eight hundred only)

(10)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003185
Date :	23/11/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : Yourself

Contents of the bill : Advance for the payment of ISTE membership fee purpose.

Amount : 38,280/- (Staff 11 members - Mech Dept)

Receiver's Signature *Treasurer* *Secretary & Correspondent*

PSCMR COLLEGE OF ENGINNERING & TECHNOLOGY

Affiliated to JNTU, Kakinada & Approved by AICTE, New Delhi
Kottapeta, Vijayawada - 520001

A.Y.: **2018-19**

DEPARTMENT OF MECHANICAL ENGINEERING

Date: 17/11/18

From:

Dr.P.S.Srinivas,
Head of the Department,
Mechanical Engineering,
PSCMR College of Engineering & Technology,
Vijayawada.

To:

The Secretary&Correspondent,
PSCMR College of Engineering & Technology,
Vijayawada.

//Through proper channel//

Respected Sir,

Sub: Advance for the payment of ISTE membership fee.

The department is encouraging the faculty members to get the membership of ISTE. 12 faculty members of our department require an advance of Rs.3, 480/- (Three thousand four hundred and eighty rupees only) each, to pay the membership fee of ISTE. This amount can be collected back by the mangement in 3 EMI's from them. I am here with providing the list of members.

Head of the Department

17/11/18

Dr. P.S. Srinivas

Faculty Names:

1. Sri. D.Prasad
2. Sri. K. Surendra Babu
3. Sri. A. Krishna Chaitanya
4. Sri. D. Kishore Babu
5. Mrs. Ch. Saraswathi
6. Sri. Ch. Jeevan Paul
7. Sri. K.V.N.Girish Kumar
8. Ms.G. Ravali
9. Sri.AVAR.Durga Rao
10. Sri.M.Madhu Sudhana Rao
11. Sri.E.Ramakrishna Reddy

Dr Subbarao 22/11/18

Received on 22/11/18

11 X 3480 = 38280/-

PSCMR COLLEGE OF ENGINEERING & TECHNOLOGY

Door No.7-3-6/1 Raghavareddy Street, Kothapet, Vijayawada -1

Date:27-11-2018

Advance for the payment of ISTE membership fee

Mech Dept

S NO	NAME	A/C NO	Amount
1	D.Prasad	1414166000004311	3480
2	K.Surendra Babu	1414166000010841	3480
3	A.Krishna Chaitanya	1414166000006511	3480
4	D.Kishore Babu	1414166000006504	3480
5	Ch.Saraswathi	1414166000006829	3480
6	Ch.Jeevan Paul	4868155000007464	3480
7	K.V.N Girish Kumar	1414166000012880	3480
8	G.Ravali	1414166000012468	3480
9	AVAR.Durga Rao	1414166000014402	3480
10	M.Madhu Sudhana Rao	1414166000014625	3480
11	E.Ramakrishna Reddy	1414166000015912	3480
			38280

Chq No 003185, Dt:23/11/2018,Rs.38,280/-(Thirty eight thousand two hundred and eighty only)

(11)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	003195
Date :	26/11/18

Bill No. : KVB 3771 Date : .....

Head of Account : S. Krishna Kishore

Contents of the bill : Reimbursement for NPTEL certifi-cation purpose.

Amount : 1,300/-

S Krishna Kishore 26/11/18

Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Vijayawada,
Dt.20-11-2018

To

The Principal,

PSCMRCET,

Vijayawada-1.

Sir,

Sub:- NPTEL Certification done – Internet of Things – request – reg..

This is to bring to your kind notice that, I have completed the NPTEL Certifications in the following subjects.

1. Introduction to Internet of Things (Jul – Oct 2018 an 12 week course)

I am herewith attaching the receipt of payment towards the payment of Exam fee Rs.1100 + Rs.200 towards FDP Certificate. Hence I request you to reimburse the amount at an earliest.

This is for your kind information.

Thanking you sir,

S.K. Kishore 20/11/18

(S. Krishna Kishore)
Asst. Professor, CSE Department, PSCMRCET.

Encl: NPTEL Certificate.

24/11/18

Received on 24/11/18.

Forwarded to Principal for

Recommended for reimbursement
23/11/18

NATIONAL PROGRAMME ON TECHNOLOGY ENHANCED LEARNING

A JOINT VENTURE BY INDIAN INSTITUTES OF TECHNOLOGY & INDIAN INSTITUTE OF SCIENCE

NPTEL

FUNDED BY THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT GOVERNMENT OF INDIA

National Programme on Technology Enhanced Learning (NPTEL)

Receipt for successful payment of fees for online courses conducted by NPTEL
Course Run: Jul-Oct 2018

Name of candidate : **SAJJA KRISHNA KISHORE**

Courses name : **Introduction to Internet of Things**

Date of exam : **2018-10-28**

City of exam : **Vijayawada**

Date of payment : **17-09-2018**

Amount paid : **Rs.1100**

*We hereby acknowledge with thanks, the receipt of **Rs.1100** from the afore-mentioned candidate towards payment for NPTEL Online Certification Exam, details of which are shown above.*

Authority Signature

PROJECT CO-ORDINATOR
Dr. Andrew Thangaraj
Co-ordinator, NPTEL, CDE
IIT Madras, Chennai 600 036

Coordinators

Prof. Andrew Thangaraj
Dept. of Electrical Engg,
IIT Madras

Prof. Prathap Haridoss
Dept. of Metallurgical and
Materials Engg,
IIT Madras

Receipt for successful payment of fees for FDP certificate

Course run : Jul-Oct 2018

Name of the candidate: SAJJA KRISHNA KISHORE

Roll number: NPTEL18CS46S12160718

Course name : Introduction to Internet of Things

Course id : noc18-cs46

College name: POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE O

Amount: 200

We hereby acknowledge with thanks, the receipt of Rs.200 from the afore-mentioned candidate towards payment for FDP certification, details of which are shown above

PROJECT CO-ORDINATOR
Dr. Andrew Thangaraj
Co-ordinator, NPTEL, CDE
IIT Madras, Chennai 600 036

Roll No:NPTEL18CS46S12160718

To
POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING AND TECHNOLOGY
VIJAYAWADA

9/371

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:3

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

SAJJA KRISHNA KISHORE

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of **74** **%**

Online Assignments	21.56/25	Proctored Exam	52.5/75

Total number of candidates certified in this course: **3617**

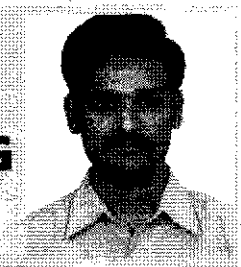
Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

A. Goswami
Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam



NATIONAL PROGRAMME ON TECHNOLOGY ENHANCED LEARNING

NPTEL

MARKSHEET

Name : SAJJA KRISHNA KISHORE **DOB : 09-08-1976**

Discipline	Year	Course Name	Marks		Total Marks (100 %)	Status	Credit	Performance
			Assignment (25 %)	Exam (75 %)				
CS	2018	Introduction to Internet of Things	21.56	52.5	74	Pass	3	Elite

* 1 Credit is equivalent to 16 hours of Learner Engagement

PROF. ANDREW THANGARAJ
COORDINATOR, NPTEL IIT MADRAS

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002970
Date :	28/9/18

(12)

Bill No. : DVB 3771 *Date* :

Head of Account : Y/S neft (Jami papa Rao)

Contents of the bill : neft for seminar on work shop on automobile (Mechnical -

Amount : 10000/-

Receiver's Signature　　　Treasurer　　　Secretary & Correspondent

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P.)

Department of Mechanical Engineering

Requisition

Requisition No: ME13/2018-19 **14/9/18**

No	Requisition No	Department / Laboratory	Recurring / Non Recurring	Details of the Item	Estimate Amount Rs.
14/9/18	Mech / Dept / 2018-19 / 4	Department	Non Recurring	Prizes for the toppers on the eve of Engineer's day.	6,000/-
14/9/18	Mech / Dept / 2018-19 / 5	Department	Non Recurring	Old Bike engine - 1 (2 stroke Petrol Engine) Old Car engine - 1 (In line petrol engine) It is useful for the department and also required for the workshop on Automobile Parts going to be conducted on 19th and 20th September 2018.	10,000/-
14/9/18	Mech / Dept / 2018-19 / 6	Department	Non Recurring	Expenses to conduct the workshop on Automobile parts on 19th and 20th September 2018.	10,000/-

Engineers day

Material purchase (Old stock)

Remuneration for faculty

Secretary & Correspondent 14/9/18

Principal 14/9/18

Head of the Department 14/9/18

Received 10,000/- given to Sribatha

ISO 9001 : 2015

POTTI SRIRAMULU
CHALAVADI MALLIKARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY

ONE TOWN, VIJAYAWADA 520 001

Website : www. pscmr.ac.in

DEPARTMENT OF MECHANICAL ENGINEERING

Welcome to a Two Day Worskhop on

AUTOMOBILE & I.C. ENGINES WORKSHOP

In collaboration with

A.B.M GROUP

DATE: 19th & 20th SEP, 2018

(13)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002651
Date :	19/7/2018

Bill No. : K.V.B. 3771 *Date* : .....

Head of Account : M. Naga Raju .....

Contents of the bill : M. Nagaraju Salary advance .....

.....

Amount : 10,000/- .....

M. Nagaraju

Receiver's Signature

Treasurer

Secretary & Correspondent

To

Date: 17. 7. 2018,
Vijayawada.

The Secretary
Datta Subbarao garu,
PSCMR. CET,
Vijayawada-1

గౌరవనీయులైన Datta Subbarao గారికి

M. Nagaraju నమస్కరించి వ్రాయునది ఏమనగా నేను PSCMR. CET కాలేజీలో Mechanical Lab Tech పనిచేస్తున్నాను. నా పిల్లల చదువుల నిమిత్తము కొంత డబ్బు అవసరమైనది. నాకు 10,000/- ~~నెల ప్రతి నెల~~ (Ten thousand Rupees) రూపాయలు ఇప్పిస్తే, దానిని [illegible]. Rs 1000/- చొప్పున 10 నెలలు [illegible]. నాకున్న నా జీతం ప్రకారము తీర్చగలను ~~ఒక~~ 10 నెలలు రూపాయలు ఇప్పించగలరని ప్రార్థన.

5 Equal Instalments

Subbarao
17/7/18

ఇట్లు
తమ విధేయుడు
M. Nagaraju

(14)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002617
Date :	16-07-2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : B. Hanumantha Rao

Contents of the bill : seminar on career guidance & women empowerment for CSE Department

Amount : 6037/-

B. Hanumantha Rao
Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002609
Date :	11-07-2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : B. Hanumantha Rao

Contents of the bill : Seminar on career guidance & women empowerment for CSE department

Amount : 7637/-

B. Hanumantha Rao
Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

BUDGET UTLIZIED FOR THE SEMINAR ON CAREER GUIDANCE & WOMEN EMPOWERMENT

S.NO	PARTICULARS		AMOUNT
1	FLIGHT TICKETS		
	(FROM HYDERBAD TO VIJAYAWADA	2428	4238
	VIJAYAWADA TO HYDERABAD)	1810	
2	CAB FROM MADAPUR TO SHAM.BAD AIRPORT)	550	1100
	SHAM.BAD AIRPORT TO MADAPUR	550	
3	CAB FROM PSCMRCET TO GAN.AIRPORT	800	1600
	GAN.AIRPORT TO PSCMRCET	800	
4	FORE NOON COFFEE	179	179
5	LUNCH & JUICE	200	200
6	EVENING SNACKS & JUICE	120	120
7	PHOTOS	200	200
			7637
	TOTAL		

already Paid on 10/7/18.

CSE-HOD

PRINCIPAL 11/7/18

11/7/18

7637
- 1600
6037

K.S.R. Anjaneyulu & Sons
48-12-4/1, Gunadala, Vijayawada - 520 004.
T: 0866 - 6635555, F: 0866 - 6614444
e: thekayhotel@gmail.com
w: www.thekayhotel.com

04176

GST No. : 37AAKFK3748F2Z3

The KAY Hotel
Business Boutique Hotel

TAX INVOICE

Date	Time	Table No.	Steward Name	Covers	Bill No.

DESCRIPTION	QUANTITY	RATE	AMOUNT Rs. Ps.
04/07/18 09:02 TIT Steward 2 OR4523			
COFFEE	2	85.00	170.00
Value			170.00
CGST 2.5%			4.25
SGST 2.5%			4.25
Grand Total			179.00
Kot No : 102159			

Guest Name	Room No	Cashier ID
Signature		madhu

Note : Kindly make any payments in favour of K.S.R. Anjaneyulu & Sons.

E-Ticket

Paytm Booking ID : 5478785656

Booked on: 30 Jun 2018 03:28 PM

paytm Flights

Return Flight

Vijayawada to Hyderabad

PNR

JLRLF

Air India AI-9537

Non-Refundable

VGA 16:30		17:30 **HYD**
Wed 04 Jul, 2018	1h 0m Economy	Wed 04 Jul, 2018
Vijayawada, Vijayawada Airport		Hyderabad, Rajiv Gandhi Airport

Traveller	Ticket
Mrs. Rekha Rao Ch	098-2563229107

Important

- Please carry your Government ID proof for all passengers to show during security check and check-in. Name on Government ID proof should be same as on your ticket.
- We recommended you to reach airport 2 hrs before departure time. Airline check-in counters typically close 1 hr prior to departure time.

Baggage Policy

Check-In Baggage(Adult & Child)	15 KG / person
Cabin(Adult & Child)	7 KG / person
Terms & Conditions	Please check with the airline on the dimensions of the baggage The baggage policy is only indicative and can change any time. You are advised to check with the airline before travel to know latest baggage policy You are advised to check with the airline for extra baggage charges

24x7 Flights Helpline
99168 99168

24X7 Care
paytm.com/care

*Always carry ticket and your ID proof while travelling

One97 Communications Limited, B 121, Sector 5, Noida - 201301
GSTIN 09AAACO4007A1Z3

paytm Flights

paytm Flights

Cancellation Policy

Airline Cancellation Charges	As per airline policy.Paytm doesn't charge any additional cancellation processing fee.
Direct cancellation with airline	Post cancellation with airline, please contact Paytm customer care for refund
Booking modifications	Date/Flight change is allowed upto 24 Hrs before departure as per airline policy. Typically, most airlines dont allow name amendments, however a few airlines allow 1 - 2 character changes. Contact our Paytm flights customer care - 99168 99168.
Terms & Conditions	We accept cancellations, only before 24 Hrs from departure time For cancellations, within 24 hours before departure you need to contact the airline. Post cancellation by airline, you can contact Paytm for refund, if any Convenience fee is non-refundable. Any cashback availed will be adjusted in final refund amount

Fare & Payment Details

Base Fare	₹ 1300
Total Tax	₹ 310
Passenger Service Fee	₹ 245
Others	₹ 65
Total Airfare	₹ 1610
Total Convenience Fee	₹ 200
Convenience Fee	₹ 169
IGST @ 18%	₹ 31
Total Fare	**₹ 1810**

24x7 Flights Helpline
99168 99168

24X7 Care
paytm.com/care

*Always carry ticket and your ID proof while travelling

One97 Communications Limited, B 121, Sector 5, Noida - 201301
GSTIN 09AAACO4007A1Z3

paytm Flights

E-Ticket

Paytm Booking ID : 5478785656
Booked on: 30 Jun 2018 03:28 PM

Paytm Flights

Onward Flight
Hyderabad to Vijayawada

PNR
TE2ZKN

SpiceJet SG-1003

Refundable

HYD 07:00	1h 5m	08:05 **VGA**
Wed 04 Jul, 2018	Economy	Wed 04 Jul, 2018
Hyderabad, Rajiv Gandhi Airport		Vijayawada, Vijayawada Airport

Traveller

Mrs. Rekha Rao Ch

Important

- Please carry your Government ID proof for all passengers to show during security check and check-in. Name on Government ID proof should be same as on your ticket.
- We recommended you to reach airport 2 hrs before departure time. Airline check-in counters typically close 1 hr prior to departure time.

Baggage Policy

Check-In Baggage(Adult & Child)	15 KG / person
Cabin(Adult & Child)	7 KG / person
Terms & Conditions	Please check with the airline on the dimensions of the baggage The baggage policy is only indicative and can change any time. You are advised to check with the airline before travel to know latest baggage policy You are advised to check with the airline for extra baggage charges

24x7 Flights Helpline
99168 99168

SpiceJet Support
9654003333

24X7 Care
paytm.com/care

*Always carry ticket and your ID proof while travelling

One97 Communications Limited, B 121, Sector 5, Noida - 201301
GSTIN 09AAACO4007A1Z3

paytm Flights

Cancellation Policy

Airline Cancellation Charges	Rs. 1026 per passenger per sector upto 4 Hrs before departure. Paytm doesn't charge any additional cancellation processing fee.
Direct cancellation with airline	Post cancellation with airline, please contact Paytm customer care for refund
Booking modifications	Date/Flight change is allowed upto 24 Hrs before departure as per airline policy. Typically, most airlines dont allow name amendments, however a few airlines allow 1 - 2 character changes. Contact our Paytm flights customer care - 99168 99168.
Terms & Conditions	We accept cancellations, only before 4 hours from departure time For cancellations, within 4 hours before departure you need to contact the airline. Post cancellation by airline, you can contact Paytm for refund, if any Convenience fee is non-refundable. Any cashback availed will be adjusted in final refund amount However, if you purchase FREE Cancellation, you will be eligible to cancel the flight ticket upto 24 hours from departure time on Paytm for a full refund(zero airline cancellation charge)

Fare & Payment Details

Base Fare	₹ 1026
Total Tax	₹ 954
User Development Fee	₹ 508
Passenger Service Fee	₹ 236
Others	₹ 100
CUTE Fee	₹ 50
SGST for Telangana	₹ 30
CGST for Telangana	₹ 30
Total Airfare	₹ 1980
Total Convenience Fee	₹ 199
Convenience Fee	₹ 169
IGST @ 18%	₹ 30
Travel Insurance	₹ 249
Total Fare	**₹ 2428**

24x7 Flights Helpline
99168 99168

SpiceJet Support
9654003333

24X7 Care
paytm.com/care

*Always carry ticket and your ID proof while travelling

One97 Communications Limited, B 121, Sector 5, Noida - 201301
GSTIN 09AAACO4007A1Z3

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in
ISO 9001:2008 CERTIFIED

Department of Computer Science & Engineering

Date : 3-7-18

From
Dr. A. Patanjali Sastri,
HOD, CSE Dept
PSCMRCET

To
The Principal
PSCMRCET
Vijayawada-1

Dear sir,

Sub: Request to grant budget for a seminar-Reg.

This is to bring to your kind notice that the CSE department has planned to conduct a seminar on "Career Guidance" and "Women Empowerment" for all the III rd and IV th year CSE students on 4/7/18 at main seminar hall from 10:00 A.M to 12:00 P.M by Prof. Ch . Rekha Rao , Member of Hyderabad Management association(HMA).

So the budget proposed for organizing this event is mentioned below :

- Travel Expenses : 4240 +870
  (Flight charges HYDERABAD<--->VIJAYAWADA, CAB charge)
- Bouquet : 200
- Food and snacks : 500
- Photos -200
- miscellaneous -500

Total : 6510/-

We request you for the approval of the event and sanctioning of the budget.

Thanking you sir,

Yours faithfully,

CSE- HOD.

Received on 10/7/2018 D. Swathi

6/7/18

6/7/18

(15)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002669
Date :	20/7/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : S. Krishna Kishore

Contents of the bill : Reimbursement for National cyber safety and security standards purpose. (Paid with my Card)

Amount : 17,700/-

S. Krishna Kishore 20/7/18.
Receiver's Signature

Treasurer

Secretary & Correspondent

Potti Sriramulu Chalavadi Mallikharjuna Rao College of Engineering & Technology

Approved by : AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High School Committee, Estd : 1906
+91 - 866 - 2423442 info@pscmr.ac.in / principal@pscmr.ac.in

To
The Principal
PSCMRCET, Vijayawada

Date: 19.07.2018

Respected Sir,

Sub: *Request to reimburse the amount for the following purchases towards* ***Prezi License, NCDRC Institutional Membership*** *for our College*-reg.

It is to bring to your kind notice that the following fee is required to get the following:

1. PREZI Software 1 Year License: 4,200+ Currency Exchange Charges
2. Institutional Membership of "National Cyber Safety and Security Standards(NCDRC.RES.IN)
   Rs. 17,700/-

Kindly Reimburse this amount to Mr.S.Krishna Kishore, Assistant Professor of CSE. As he has paid from his credit card.

Thanking You Sir,

Yours Sincerely,

K.Sudhakar, Associate Professor of CSE

Forwarded to Principal sir

19/7/18

Ch. 002660 of Rs. 17700/- 20/7/18.

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

(16)

Voucher No.:

Seminars 4000

BANK BILL DESCRIPTION

Cheq. No.	002724
Date :	20/7/18

Bill No. : KVB 3771 Date : .....

Head of Account : G. Padmaja

Contents of the bill : Reimbursement towards the expenses of the Shanthi ashramam project purpose

Amount : 9594/-

G. Padmaja
Receiver's Signature

Treasurer

Secretary & Correspondent

19/7/2018

To

The Principal,

PSCMRCET,

Vijayawada

Respected Sir,

Sub: Request to reimburse the following amount towards the Expenses of the Shanthiashramam Project-reg.

It is to bring to your kind notice that I Mrs.G.Padmaja, Associate Professor of CSE, along with Mr.M.Kiran of IV CSE, Ms.D.Vishnu Priya of III CSE have successfully completed the Project of http://shanthiashramamtrust.org website and attended the launching event at the Ashramam premise on 18th July 2018 at Kurnool.

The Ashramam Guruji, Members and the attendees of the event felt so happy to see the website. We have had an MOU with them towards Development and Hosting. As the Ashramam is a trust in helping the poor and needy we didn't charge anything for this project and developed at the free of cost.

They respected our work and gave a token of appreciation Rs.6066 approximately.

In this process I request you to sanction the following amount in detailed given below for the Hosting.

1. Hosting & Domain	: 6,066
2. Travel expenses	: 3528
Total	: 9594

Thanking you sir,

Yours Faithfully

G.Padmaja

(G.Padmaja)

Forwarded to Principal sir for Sanction & Approval. AVS

Kiran. 19/7/18

Pay 9594/- Sd/- 20/7/18

GRAPHICS PRO × | UNIT III - GRAPHICS PR × | b janardhan login tecm × | padmajag × | redBus Ticket - TMBE14 ×

oogle.com

1 of 32

RESERVATION VOUCHER

		UID Number	2045
PNR No	77950484	Date of Journey	2018-07-18T22:15
Ticket No	TM2514656622	Service Category	INDRA A C SEMI SLEEPER
Service Code/Name	KRNL-VJA/6206		
From	Kurnool	To	Vijayawada
Pickup Point	KURNOOL	Dropping Point	VIJAYAWADA
Arrival On	Thursday, July 19, 2018 04:45 AM	Depart On	Wednesday, July 18, 2018 10:15 PM
User Code	redBus	Start Time at Origin	Wednesday, July 18, 2018 10:15 PM
		No. of Seats	3(Adults=3, Children=0)

PASSENGER DETAILS

Name	Age	Category	Gender	Seat No.
PADMAJA G	[illegible]	ADULT	FEMALE	3
VISHAL	22	ADULT	FEMALE	5
KIRAN	22	ADULT	MALE	4

FARE DETAILS

Basic Fare	1500		
Reservation & Levy Fee	185	Service Fee	45
Toll Fee	24	Concession Amt	NA
TOTAL FARE	1784		

1784 × 2

IMPORTANT

My Account _ Ord....pdf | budget.docx | OPENGL.rtf | OPENGL.pdf | Show all | X

GoDaddy™

GoDaddy.com, LLC
14455 N. Hayden Rd.
Suite 219
Scottsdale, AZ 85260
(480) 505-8877
GSTIN #: 9917USA29016OS6

Invoice / Receipt

Date: Mar 14, 2018 12:57 PM

Invoice / Receipt #: 1279101330
Customer #: 182025933

Bill To:
SHANTHI ASHRAMAM
PSCMR College of Engineering and Technology,Raghavareddy St, Kothapet,
Vijayavadaa, AP 520001
+91.6281100477

Payment Information:

Paid: | 6,066.96

Items

Starter Linux Hosting with cPanel
shanthiashramamtrust.org

Item Number: 294065
Quantity: 1
Term: 3

List Price: 7,164.00
Purchase Price: 3,564.00
ICANN Fee: 0.00

आन्ध्रा बैंक Andhra Bank

320-कर्नूल शाखा: कर्नूल - 518 001
320-Kurnool Branch: Kurnool - 518 001
IFS CODE : ANDB 000 0320

केवल 3 महीने के लिए वैध / VALID FOR 3 MONTHS ONLY

1	8	0	7	2	0	1	8
D	D	M	M	Y	Y	Y	Y

PAY PSCMRCET या धारक को OR BEARER

रुपये RUPEES Six Thousand Sixty Six Rupees 90 Paise only.

अदा करें ₹ 6066:90

खा. सं. A/c. No. 0320111000025 91

For SHANTHI ASHRAMAM TRUST

P. pratapreddy T. Harish Reddy

1.Authorised Signatory 2.Authorised Signatory

"Payable at Par at all branches" AB/CA/CTS/2013/BS

Please sign above

"832250" 518011002: 29

(17)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002716
Date :	10/7/18.

Bill No. : KVB 3771 *Date* : .....

Head of Account : T/S Neft

Contents of the bill : payment for Delta Tiles ltd and The institute of Engineers purpose.

Amount : 4897 → The institute of Engineers
38181 → Delta. Tiles

Receiver's Signature 43078 *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002716
Date :	10/7/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : M/s Neff

Contents of the bill : Neff for Delta tiles Ltd final Payment.

Amount : 38181/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002716
Date :	10/7/17

Bill No. : KVB3771 *Date* : .....

Head of Account : 415 Neft — EEE Dept.

Contents of the bill : payment of MIE member fees of IEI purpose.

Amount : 4897/—

Receiver's Signature *Treasurer* *Secretary & Correspondent*

NEFT / Online Net Banking :-

Beneficiary Name: The Institution of Engineers (INDIA).

* Amount = RS 4897

* Account NO :- 012 104 0000 94674

* IFSC NO :- IBKL0000012

* Swift code :- IBKLINBB135

* Bank Name & Branch :- IDBI Bank, Siddha Point, Ground Floor, 101 Park street, Kolkata 700016.

* Transaction date :-

ment Reference NO :-

) Please enclose transaction slip generated.

10/7/18,

Vijayawada.

To

The Principal,

PSCMECET,

Vijayawada.

Respected sir,

SUB: Requisition for payment of MIE member fees of IEI.

I (Mr.V.Praveen) Assistant Professor of EEE department acting as IEI Student Chapter Advisor of PSCMRCET. I am conducting various events under IEI Student Chapter since from 1 year. I used to send the reports of the activities to the head office at Kolkata for publishing reports of our activities, as I am not a member of IEI now it has made mandatory by IEI to take the membership to continue my student chapter advisor activities. The amount towards membership is RS. 4897. I request your goodself the sanction of above said amount to continue my advisor duties. I am unable to bear this expense as my salary is less.

Thanking You,

10/7/18 HEEE forwarded to principal sir

ok 10/7/18 pay by cheque to IEI or NEFT

Yours Sincerely

V. Praveen

V.Praveen,

EEE Department,

PSCMRCET.

The Institution of Engineers (India)

An ISO 9001:2008 Certified Organisation
8 GOKHALE ROAD, KOLKATA 700 020

Application for Membership (MIE)

M

For Office Use Only

Passport or stamp sized photograph to be pasted here
(Please do not sign on the photograph)

Name : _____ _____
Last Name Remaining Name

In Capitals (As indicated in BE/B.Tech/Equivalent Certificate)

DETAILS OF PAYMENT

In case of payment by Draft or Cheque:-

(A) Draft or Cheque no. [ ][ ][ ][ ][ ][ ] of Amount (₹/$) [ ][ ][ ][ ][ ][ ] Date [D][D][M][M][Y][Y][Y][Y]

Name of the Bank & Branch _____

In case of NEFT/Online Net Banking Transfer to IEI Account, please mention the following:-

Beneficiary Name : THE INSTITUTION OF ENGINEERS (INDIA)

Amount (₹/$) [ ][ ][ ][ ][ ][ ]

Account No. : 012104000094674 IFSC No. : IBKL0000012 Swift Code – IBKLINBB135

Bank Name & Branch : IDBI Bank, Siddha Point, Ground Floor, 101 Park Street, Kolkata 700 016

Transaction date : [D][D][M][M][Y][Y][Y][Y]

Transaction ID/UTR No./Payment Reference No. :- _____

Note:- In case of NEFT/Online Net Banking Transfer to IEI Account, please enclose the transaction sli generated.

DETAILS OF BANK ACCOUNT OF THE CANDIDATE (Necessary in cases of refund of Fees)

Account holder's Name _____

Name of the Bank & Branch _____

Account number _____ IFSC No. _____

Note:- Please enclose i) Cancelled cheque leaf bearing the Name of A/C holder OR ii) photocopy of the first page of bank pass book containing name of A/C holder, A/C No., IFS Code

---

For Office use only

N. B. Filling this part is necessary for photo ID card. Do no sign/stamp on the photograph.

Passport or stamp sized photograph to be pasted here
(Please do not sign on the photograph)

Name : _____ _____
Last Name Remaining Name

In Capitals (As indicated in BE/B.Tech/Equivalent Certificate)

Specimen Signature ⟶ of the Applicant (preferably in English)

The signature should not touch the box
(Use black ink only)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003044
Date :	26/10/18

Bill No. : KVB 3771. *Date* : .....

Head of Account : S. Radhika

Contents of the bill : Conf. Gana Pathi Pooja Expenditure.

.....

Amount : 52090/-

Receiver's Signature

Treasurer

~~Secretary~~ & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO
COLLEGE OF ENGINEERING AND TECHNOLOGY

Total Expenditure Incurred for Ganesh Chaturdi Celebrations from 13/09/2018 to 20/09/2018

Idol	11700
Decoration(frames, cloth, decorative material,	6700
Expenses for purchase of Rangoli	1680
Things for pooja	4550
Fruits & Flowers and Garlands	4800
Cups and other things for pooja	1900
Naveen Gupta forPermission	1500
Poojarigaru	7500
Tractor	5850
Flash Mob	1000
Gulam, Pumpkins, coconuts, flags and colours	1700
Miscellaneous	1500
Dj	9500
Prasadam	13600
Rent of fan	750
Total Expenditure Incurred	**74230**
Auction of Laddu	**40216**
Auction amount received till date	**22140**
Amount to be recived from Students	**18075**

9/10/18

74230
- 22140
52090

(109)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002621
Date :	25/06/2018

Bill No. : KVB 3771 *Date* : 02/07/18

Head of Account : A. K. Chaitanya

Contents of the bill : Registration fee of attended FDP at NIT Warangal

Amount : 2000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002622
Date :	25-06-2018

Bill No. : KVB3771 *Date* : .....

Head of Account : D. Kishore Babu

Contents of the bill : Registration fee of attended FDP at NIT Warangal

Amount : 2000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	002823
Date :	25/06/2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : K. surendra Babu

Contents of the bill : Registration fee of attended FDP at NIT Warangal

Amount : 2000/-

K. s

Receiver's Signature | *Treasurer* | *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	002624
Date :	25/06/2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : M. Madhu Sudhana Rao

Contents of the bill : Registration fee of attended FDP at NIT Warangal

Amount : 2000/-

2/7/2018.

Receiver's Signature *Treasurer* *Secretary & Correspondent*

Vijayawada,

Date: 15-6-2018.

To,

The Principal,

PSCMRCET,

Vijayawada.

//Through proper Channel//

Sub: Requestfor refund of registration fee of attended FDP at NIT Warangal.reg…

Respected sir,

We the faculty of Mechanical Engineering Dept (four members) have attended an FDP Programme on "INNOVATIVE METHODS FOR TEACHING MECHANICAL ENGINEERING " organized by NIT Warangal in the month of April from 22nd -26th ,2018 .We thank the Management & Principal for supporting us to attend the FDP. We request for refund of registration fee of an amount Rs.2000/- per person (Total-Rs 8000/-).

Thanking you,

Forwarded to the Principal
15/6/18

Yours sincerely,

A.K.Chaitanya

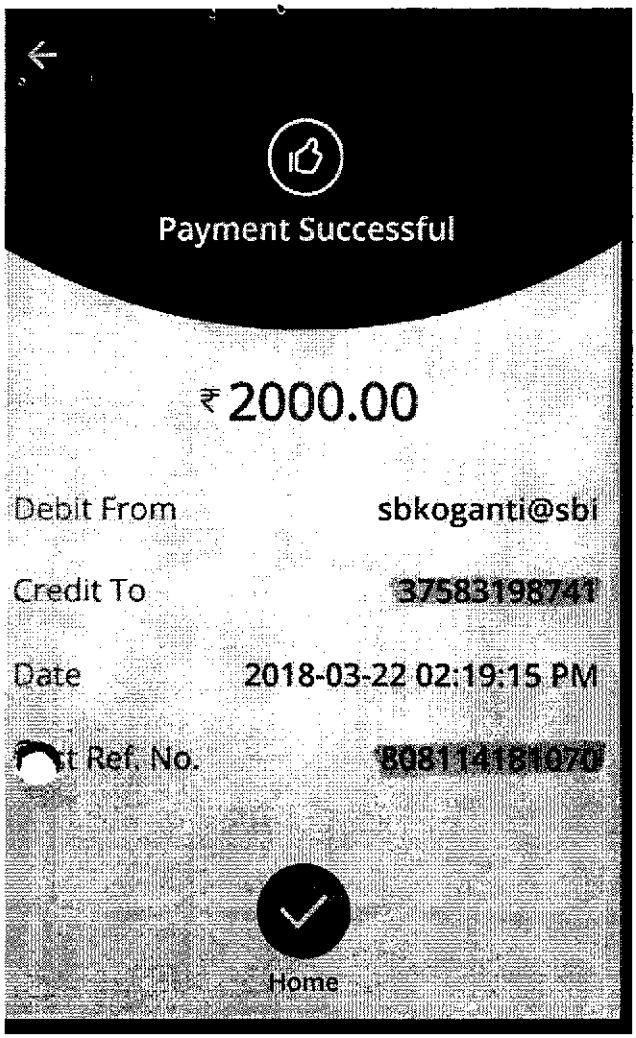
D.Kishore Babu

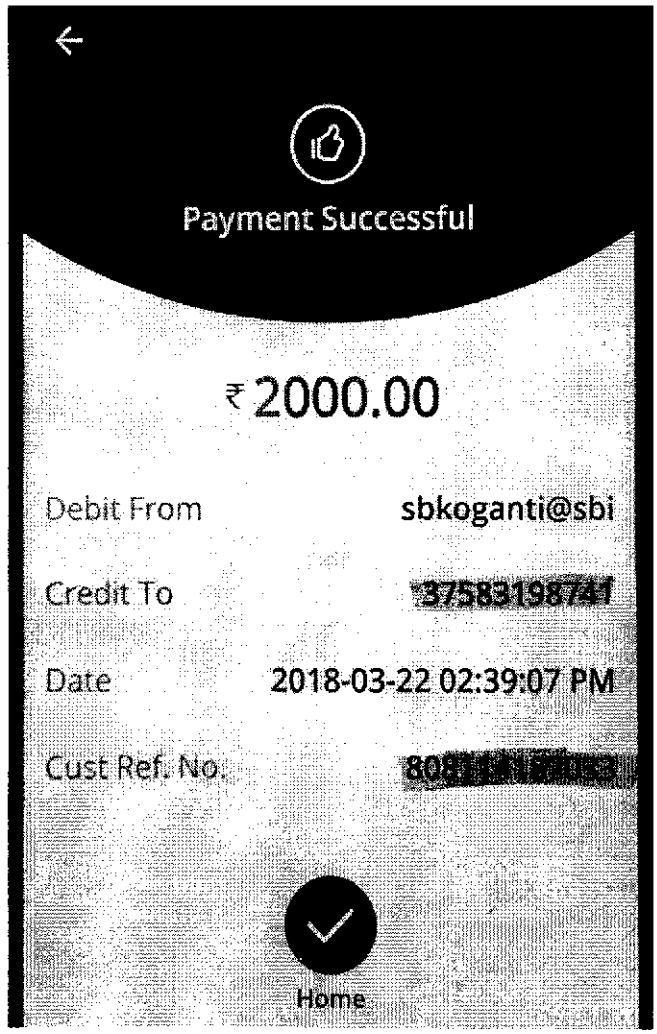
K.Surendra babu

M.Madhu Sudhan

Reviewed
15/6/18

Release
Subhash
20/6/18





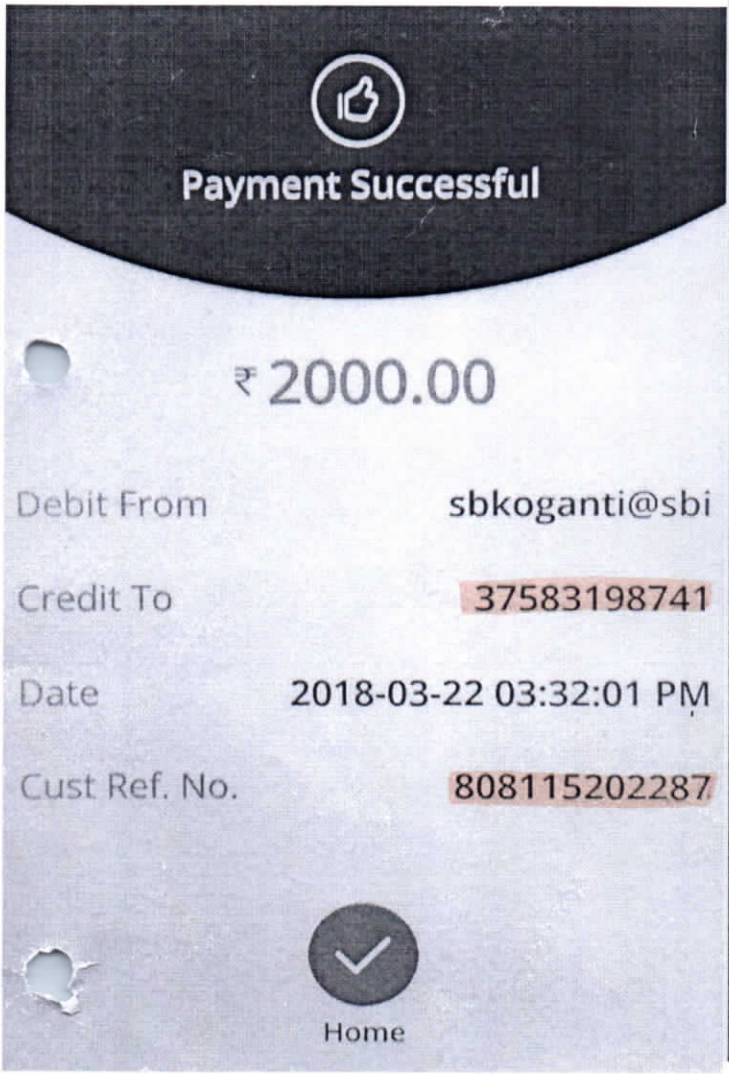
Please note this transaction number for future reference: ITQ5701553

Transaction Status Completed Successfully

Details of Transaction

	Account Number	Account Type	Branch	Amount (INR)
Debit:	00000010892816686	Savings Account	VUYYURU	2,000.00
Credit:	00000037583198741	Current Account	REC WARANGAL	2,000.00

Print



Fee Payment Details

Account Name	TEQIP III Funds
Account Number	37583198741
Bank	State Bank of India
Branch	REC Warangal (NIT Campus)
Branch Code	20149
IFSC code	SBIN0020149

Confirmation of Participation:

On receipt of the online registration form along with proof of payment of registration fee, participants will be sent confirmation of their participation through Email. Participants need NOT send the hard-copy of the registration form.

As the program is conducted in an interactive mode with hands-on sessions, the number of participants is limited to **40**. *Candidates are advised to register early to avoid disappointment.*

Participants may bring along their laptops for homework practice.

Contact details

Coordinator, IMTME2018
Department of Mechanical Engineering, NIT Warangal, Telangana State - 506 004.
Mobile: +91 89 859 29 103.
Email: imtme2018@gmail.com
https://sites.google.com/view/imtme2018

(20)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003048
Date :	22/10/18

Bill No. : ..... CMB 3771 ..... *Date* : .....

Head of Account : ..... H/S Nest ....

Contents of the bill : ..... Nest to Niteesh for toastmasters Club Purpose .....

Amount : ..... 120000/- .....

Receiver's Signature *Treasurer* *Secretary & Correspondent*

Gmail

Imran Syed <imransyed.ee@gmail.com>

Fwd: PCSMR Invoice

Toram Mani kanta <manikanta9594@gmail.com> Mon, Oct 22, 2018 at 12:27 PM
To: kamakshivempati79@gmail.com, Imran Syed <Imransyed.ee@gmail.com>
Cc: TM Niteash Agarwaal CGD <niteshaga@gmail.com>

Hi Imran and PSCMR Team,

We are going ahead with card payment per your request and plz find the account details and amount that needs to be transfered.

Sir the amount as per todays dollor rate +3% forex charges (18% GST on this 3% forex) comes around 1, 15,000 to 1,20,000

So if you can transfer us 1,20,000/- rest amount we can settle based on final transaction values.

We will provide an invoice once transaction is completed. Thank you.

Name: Nitesh Agarwal
Act: 146037254006
IFSC: HSBC0411002

Bank name = HSBC
Branch - PUNE.
MICRCODE - 411039002

Best Regards,
Manikanta Toram
Club Extension Lead, Hyderabad
(on behalf of) Club Extension Team
Divisions - EGFH | District - 98 | Toastmasters International
Mobile / WhatsApp - 8121962964

phone number: 99700 41122.

[Quoted text hidden]

22/10/2018.
President
PSCMR Toastmasters

INVOICE

CUSTOMER:
ATTN: Imran Syed
PSMCRPotti Sriramulu Chalavadi
Mallikarjuna Rao College
Engineering And Tech Kothapeta
Vijayawada AP - 520001
India

DATE: 5-Oct-2018
DEPARTMENT: New Clubs
INVOICE #: 98-07160802

Description	QTY	PRICE	TOTAL
Charter Fee	1	$125.00	$125.00
New Member Fee	21	$20.00	$420.00
Membership dues	21	$45.00	$945.00
Wire Transfer Fee	1	$10.00	$10.00

CREDIT

Each wire transfer transaction is subject to a fee charged by the issuing bank. In addition, the Toastmasters International bank charges $10 per wire transaction; this bank fee is standard for all wire transfers. The club will be billed for any difference between the amount received in Toastmasters' bank account and the amount due for renewals, new member charges, or supply orders. All payments must be made in USD.

SUBTOTAL	$1,500.00
SHIPPING & HANDLING	$0.00
CREDIT	$0.00
TOTAL DUE	**$1,500.00**

PAYMENT INFORMATION

Please make check payable to: Toastmasters International

❍ Check No. _____ Amount $ _____

❍ Credit Card ❍ Mastercard ❍ Visa ❍ AMEX ❍ Discover

Card No. _____ Exp. Date _____

Signature/Name on Card _____

120000 Payment.

03rd October, 2018

To
The Principal,
P S C M R C E T
Vijayawada.

Dear Sir,

Sub: Chartering of PSCMR Toastmasters Club – Payments Reg.

We are happy to inform you that the charter process of PSCMR Toastmasters Club has been initiated and we are on the verge of making payments for 21 members. The members have been identified based on their contribution to the club during the past 8 months. Management is ready to sponsor partial payment for 20 members as we need minimum of 20 members for a club to start while the additional one member is ready to pay her full membership fee for this semester.

A total of Rs. 1,08,770/- (Rupees One Lakh Eight Thousand Seven Hundred and Seventy only) is incurred towards the chartering process out of which Rs. 34,745/- (Rupees Thirty Four Thousand Seven Hundred and forty Five only) is contributed by students and same is handed over to the accounts department. Names of members, payment and wire transfer process details are enclosed for your ready reference. You are requested to grant us permission to submit the forms and make payments accordingly.

Thanking you,

3/10/2018

Imran Syed
President PSCMR Toastmasters Club

3/10/18

3/10/18

Copy to: 1. Principal Office
Secretary & Correspondent
HODs

Kamalesh - 9000243406.

WIRE TRANSFER INSTRUCTIONS

All wire transfers must be made in U.S. dollars. All clubs, including clubs outside the United States, are responsible for transferring the correct amount in U.S. dollars. Clubs will be billed for any difference between the amount received in Toastmasters' Bank of America account and the amount due for membership renewal dues, new membership dues or supply orders.

Each wire transfer transaction is subject to a fee charged by the issuing bank. In addition, Toastmasters International charges $10 per transaction; this fee is standard for all wire transfers.

To ensure that your club account is properly credited, please include your district and club numbers in the bank transaction information and in all correspondence with Toastmasters World Headquarters.

To verify the funds and ensure that your club account is properly credited, email the confirmation to **financequestions@toastmasters.org**. Alternatively, please fax the bank wire confirmation with your club name and number to 303-799-7753, ATTN: Finance Department.

Toastmasters' bank information is as follows:

Bank of America, N.A.
ADDRESS: 520 Newport Center Drive, Suite 1000
Newport Beach, CA 92660

ACCOUNT NUMBER: 325000597890
ABA NUMBER: 026009593
SWIFT CODE: BOFAUS3N

CLUB NAME: _____
CLUB NUMBER: _____

ATTENTION CLUBS: PLEASE INCLUDE YOUR CLUB NAME AND CLUB NUMBER ON THE BANK WIRE TRANSFER FORM.

INVOICE

CUSTOMER:
ATTN: Imran Syed
PSMCRPotti Sriramulu Chalavadi
Mallikarjuna Rao College
Engineering And Tech Kothapeta
Vijayawada AP - 520001
India

DATE: 5-Oct-2018
DEPARTMENT: New Clubs
INVOICE #: 98-07160802

Description	QTY	PRICE	TOTAL
Charter Fee	1	$125.00	$125.00
New Member Fee	21	$20.00	$420.00
Membership dues	21	$45.00	$945.00
Wire Transfer Fee	1	$10.00	$10.00

CREDIT

Each wire transfer transaction is subject to a fee charged by the issuing bank. In addition, the Toastmasters International bank charges $10 per wire transaction; this bank fee is standard for all wire transfers. The club will be billed for any difference between the amount received in Toastmasters' bank account and the amount due for renewals, new member charges, or supply orders. All payments must be made in USD.

SUBTOTAL	$1,500.00
SHIPPING & HANDLING	$0.00
CREDIT	$0.00
TOTAL DUE	**$1,500.00**

PAYMENT

Please make check payable to: Toastmasters International

○ Check No. _____ Amount $ _____

○ Credit Card ○ Mastercard ○ Visa ○ AMEX ○ Discover

Card No _____ Exp. Date _____

Signature/Name on Card _____

Sr. No	Payment for membership of	New member fee Fee ($ 20; considering $= Rs.73) {Life time valid}	Membership fee (in $45; considering $=Rs.73) {need to pay every six months}	Total	Remarks
1	PSCMR Toastmasters Club	-	-	9125	Onetime $125 Club Charter fee
2	Mr. Imran Syed, Asst. Professor, Civil Department Rec NO 6168 /03-10-18	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
3	Pothuru. Phanii sai Charan, IV ECE (15KT1A0482) Rec NO. 5940	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
4	Saba Afreen Khatoon, IV ECE (15KT1A0485) Rec NO. 5941	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
5	Varri. Narsimha Prem- IV ECE (15KT1A04A7) Rec NO 5942	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
6	Sonti Lakshmi Venkata Keerthana, IV ECE (15KT1A0494) Rec NO: 5943	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
7	Koneru Sahithya, IV CSE (15KT1A0547) Rec NO: 5944	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
8	Sikhakolli. Padmavathi, III ECE (16KT1A04A0) Rec NO: 5945	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
9	Peteti. Vijaya Raasi, III CSE (16KT1A0586) Rec NO: 5946	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
10	Moghul Sameena Begum, - III CSE (16KT1A0555) Rec NO: 5947	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
11	Meka. Nagalaskshmi, - III Civil (16KT1A0122) Rec NO: 5948	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management

12	Kota Naga Sirisha,II ECE (17KT1A0445) Rec NO: 5949	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
13	Vandrasi Charitha, II CSE (17KT1A0552) Rec NO: 5950	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
14	Dhupam Nishitha, III CSE (16KT1A0529) Rec NO: 5951	1460	3285	4745	Rs. 4745 paid by student
15	Gurram Harinadh, II CSE (17KT1A0576) Rec NO: 5952	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
16	Lanka Krishna Kavya, III ECE (16KT1A0466) Rec NO: 5953	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
17	Amara Keerthi Krishna, II CSE ((17KT1A0503) Rec NO: 5954	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
18	Kotamarthi Lahari, II CSE (17KT1A0522) Rec NO: 5959	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
19	Sangapu Leela Likitha, II CSE (17KT1A05B1) Rec NO: 5955	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
20	Kurakula Tirumalesh, II CSE (17KT1A0587) Rec NO: 5956	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
21	Sahik Gouse Mohiuddin, II Civil (17KT1A0144) Rec NO: 5957	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
22	Makke Siva Teja, II Civil (17KT1A0125) Rec NO: 5958/3-10-18	1460	3285	4745	Rs. 1500 paid by member and Rs. 3245 by management
		30660	**68985**	**108770**	**Rs. 34,745 paid by students while 74,025 paid by management**

20 × 1500 = 30,000/-
1 × 4745 = 4745/-
34,745/-
- 25,000
9745

ON LETTER HEAD OF COMPANY

REQUEST LETTER FOR OUTWARD REMITTANCES (NON IMPORT)

To
The Branch Manager,
Karur Vysya Bank,
VIJAYAWADA I-TOWN Branch.

(To be completed by the applicant in block letters)

I/We wish to make the following outward remittance and hereby request you to remit/issue a DD for the amount as per the details given below:

I.Details of Applicant(remitter):

Name of the Applicant	PSCMR COLLEGE OF ENGINEERING AND TECHNOLOGY FEE TRANSFER
Account Number	1414172000003771
Address	
Phone No.	

II.Details of Beneficiary:

Name of the Beneficiary	
Address	
Beneficiary Account No.	325000597890
Name and address of the Bank where the beneficiary account is maintained	Bank of America, N.A 520 Newport Center Drive, Suite 1000 Newport Beach, CA 92660
SWIFT/SORT code, IBAN NO.	BOFAUS3N
Correspondent Bank Name and SWIFT code (if any)	
Foreign Bank charges	To our Account/To beneficiary Account

III.Details of Foreign Exchange required:

Foreign Curency: USD	Amount in figures: $1500
Amount in Words: Fifteen hundred dollars only	

IV.Purpose of Remittance with Purpose Code:

Code:	Description:

V.Additional message to be sent along with wire transfer on your behalf:

Authorised Signatory

VI.Forward Contract details:

Forward Contract No. % Date	Forward Contract Amount	Amount to be utilized for this remittance	Due date of the contract

We request you to debit our EEFC account no. _____ for an amount of _____ and the balance amount to our OCC/SOD/CA._____ along with your charges.

DECLARATION

I/ We hereby declare that the total amount of foreign exchange purchased from or remitted through all sources in India during this Calendar / Financial year including this application is within USD Limit as prescribed by RBI for the said purpose under FEMA 1999.

I/ We hereby declare that the transaction mentioned above doesn't involve, and is not designed for any purpose for which the drawing of foreign exchange is prohibited under rule 3 of the FEMA Current A/c transactions Rules, 2000 read with schedule I therefore of Viz,

1. Travel to Nepal & or Bhutan
2. Transaction with a person resident in Nepal or Bhutan
3. Remittance out of lottery winnings
4. Remittance of Income from Racing / riding etc. or any other hobby.
5. Remittance for purchases of Lottery tickets, banned or prescribed magazines, football pools, sweep stakes, schemes involving money circulations, securing prize money awards etc.
6. Payment of commission on exports made towards equity investments in joint ventures / wholly owned subsidiaries abroad of Indian Companies
7. Remittance of dividend by any company to which the requirement of dividend balancing is applicable.
8. Payment of commission on export under rupee state credit route except commission up to 10% in invoice value of exports of Tea & Tobacco.
9. Payment related to "Call back services" or telephones.
10. Remittance of interest income on funds held in non-resident special rupee a/c schemes.

Other relevant declarations:
I/we hereby declare that the purpose and transaction details as mentioned above are true to the best of my knowledge does not involve, and is not designed for the purpose of any contravention or evasion of the provisions of the FEMA, 1999 or any rule, regulation, notification, direction or order made there under. I/We agree that I/We shall be responsible and liable for any incorrect detail provided by me/us.

I/We also hereby agree and undertake to give such information / documents as will reasonably satisfy you about this transaction in terms of the above declaration.

I/we agree that in the event of transaction could not be executed/debited to my/ our account after submitting the request for processing to the bank on account of insufficient/ unclear balance at the same time of execution of the transaction in my/ our account any exchange losses incurred in this connection due to reversal of the Forex deal can be charged to my/our account.

I/we agree that in the event the transaction is cancelled or revoked by me/us after submitting the request for processing to the bank any exchange losses incurred in this connection can be charged to my/our account. I/we further agree that once the funds remitted by me/us have been transmitted by the bank to the correspondent and/or beneficiary banks, the bank shall not be responsible for any delays in the disbursement of such funds including the withholding of such funds by the correspondent and/or beneficiary banks. I/We further agree that once the funds remitted by me / us have been transmitted by Karur Vysya Bank, intermediary Bank charges may be levied by Correspondent and / or Beneficiary Banks, which may vary from bank to bank.

I/we agree that in the event the transaction being rejected by the beneficiary bank because of incorrect information submitted by me, any charges levied by the beneficiary bank or exchange losses incurred in this connection can be charged to my bank account.

I/we also understand that if I/we refuse to comply with any such requirement or make only unsatisfactory compliance therewith, the bank shall refuse in writing to undertake the transaction and shall, if it has reason to believe that any contravention/evasion in contemplated by me/us, report that matter to the RBI.

Authorised Signatory

I/we also agree that the exchange rate will be applicable at the time of deal booking and may vary from the rate prevailing when the request is submitted. I/we also understand that the rate communicated to us (if any) is an indicative rate and the actual rate may be different from the same.

I/We declare that the transaction does not have linkage with any Specially Designated Nationals and Blocked Persons (SDN)/countries listed under OFAC in any manner. If the transaction involves linkage with any Specially Designated Nationals and Blocked Persons (SDN)/countries listed under OFAC in any manner, I/We undertake not to hold The Karur Vysya Bank Ltd responsible for any of its action or inaction in respect of the OFAC-linked transactions.

I/We further declare that the undersigned has the authority to give this application, declaration and undertaking on behalf if the firm/company.

I / We authorize you to debit my/our account together with your charges and remit outwardly as per details provided in the application.

Date:

Authorised Signatory

GUIDELINES/CHECKLIST FOR THE APPLICANT FOR ENSURING SPEEDY & ERROR FREE REMITTANCE

1. Request letter to be signed by Authorised Signatory/ies of the company.
2. Ensure that all columns are filled in the request letter.
3. Documentary proof from Overseas beneficiary such as Proforma Invoice, Copy of Contract etc.,
4. Form 15CA & 15CB.
5. Other Document to be submitted:
   a) ODI Payments:
      - Form ODI full set
      - Annexure 1 declaration cum undertaking
      - Networth certificate
      - CA certificate
      - PAN card
      - 3 yrs IT returns
      - Offer of shares from the overseas firm
      - Valuation certificate of the overseas firm
      - Registration certificate of the overseas firm
      - Copy of Board resolution
      - MOA of both the company

   b) Dividend Payments: Certificate from CA or CS that
      - Shares have been validly issued to an overseas party giving names of non-resident shareholders and quantity of shareholding as on the record date of payment of dividend.
      - That the amount of remittance being made is net of dividend already paid/payable to domestic accounts/custodians of foreign shareholders.
      - Certified true copies of the board and general meeting resolutions (AGM's resolution not applicable for interim dividend) authorizing payment and quantum(%) of dividend.

Amount remitted Currency USD Amount $1500 Equivalent to Rupees _____ (to be completed by authorised dealer)	**Form A1** (For Import payments only) **Application for Remittance In Foreign Currency**	Serial No. _____ (for use of Reserve Bank of India) A.D. Code NO. _____ Form No. _____ (To be filled by authorized dealer)

I/We wish to purchase United States Dollar (Name of the currency) fifteen hundred dollars only. (Amount in words)

through THE KARUR VYSYA BANK LTD., International Division, Chennai – 600018 for payment to
(name and address of the authorized dealer)

_____
(Name and address of the beneficiary of the remittance)

in payment of imports into India, detailed below :

Details of goods imported or to be imported into India

Section A : Import licence particulars

Import Licence								Date of Issue			Date of Expiry			Face value of licence	Amount to be endorsed (in Rs.) @
Prefix		Licence No.	Suffixes					Date	Month	Year	Date	Month	Year		
1	2		1	2	3	4	5								

@ Actual amount endorsed in rupees against each licence involved, should be stated under this column
Note: If more than one licence is involved, particulars of all licneces should be furnished. If the space is inadequate, a separate statement may be attached The amount utilized against each licence should invariably be indicated..

Section B: Import particulars

Invoice Details				Quantity of goods	Description of goods	Harmonised System of Classification	Country of origin of goods	County from which goods are consigned	Mode of Shipement (air, sea, post, rail, river, transport etc)	Date of shipment (if not known approximate date)
No and Date	Terms (c.i.f, f.o.b, c&f. etc)	Currency	Amount							

Section C: Other particulars

1. Details of forward purchase contract, if any, booked against the import _____ (No. & Date of contract) _____ (Currency and Amount of Contract) _____ (Balance under the contract)

2. If remittance to be made is less than invoice value, reasons therefore (i.e part remittance, instalment etc.) _____

I/We hereby declare that the statements made by me/us on this form are true and that I/We have not applied for an authorization through any other bank.
I/We declare also understand that the foreign exchange to be acquired by me/us pursuant to this application shall be used me/us only for the purpose for which it is acquired that the conditions subject to which the exchange is granted will be complied with.

Stamp

_____
(Signature of Applicant/Authorised Officer)
@ Name and Address of Applicant _____
Importer's Code Number _____
@Nationality _____
@ To be filled in capital letters

Date : _____

Note: For remittance covering intermediary trade, form A2 should be used

Declaration to be furnished by the Applicat

I/We declare that

a) the import licence/s against which the remittance is sought is/are valid and has/have not bee cancelled by DGFT

b) The goods to which this application relates Have been* / will be* imported into India on my/our own account

c) The import is on behalf of @ _____ * and

d) The invoice value of the goods which is declared on this form is the real value of the foods imported * / to be imported * into India.

If the import has been made: I/We attach the relative Customs-stamped Exchange Control copy of Bill of Entry */ Post parcel wrapper (for imports by post) * / Courier Wrapper (for import through courier)*

or

If the import is to be made: I/We undertake to produce within three months to the authorized dealer the relative Customs-stamped Exchange Control copy of Bill of Entry */ Post parcel wrapper (for imports by post) * / Courier Wrapper (for import through courier)*

* Strike out the item not applicable

@ Where the import is on behalf of Central/State Government Department or a company owned by Central/State Government/Statutory Corporation, Local Body, etc. the name of the Government Department, Corporation etc. should be stated.

Date :

_____

(Signature of the Applicant / Authorised Official)

Space for comments of the authorized dealer

(While forwarding the application to Reserve bank for approval, reference to Exchange Control Manual paragraph / A.D Circular in terms of which the reference is made should invariably cited. If any remittance application on account of the same import was referred to Reserve Bank earlier, reference to the last correspondence/approval should also be cited).

_____

(Signature of Authorised Offical)

Name : _____

Designation: _____

Name and Address of _____

Authorised dealer _____

Stamp

Date:

Certificate to be furnished by Authorised Dealer (Importer's Banker)

We herby certify that

a) This payment is

Put a tick (√) in the relevant block

i) ☐ an advance remittance

ii) ☐ in retirement of bills under Letter of Credit opened through us

iii) ☐ against documents received through our medium of collection

iv) ☐ on account of documents received direct by the applicant/s against undertaking furnished by the latter to submit Customs-stamped Exchange Control copy of Bill of Entry of posted Parcel/ courier wrapper with three months.

v) ☐ on account of documents received direct by the applicant/s against Customs-stamped Exchange control copy of Bill of Entry/post parcel/courier wrapper (attached) submitted by the latter

vi) ☐ _____ (Any other case to be explained)

b) all the Exchange Control regulations applicable to the remittance have been complied with the payment to the supplier of the goods has been * / will be* made through _____ (Name and address of the foreign Bank)

* Strike out the item not applicable

We also certify/undertake that a the relevant Customs-Stamped Exchange Control copy of Bill of Entry or post parcel / courier wrapper

- shall be verified by us within three months [vide certificate (a) (ii) and (iii) above].
- Has been verified [vide certificate (a) (v) above]
- Shall be obtained from the applicant/s within three months [vide certificate (a) (i) and (iv) above].

_____

(Signature of Authorised Offical)

Name : _____

Designation: _____

Name and Address of _____

Authorised dealer _____

Stamp

Date:

Amount _____ _____ remitted Currency Amount Equivalent to Rupees _____ (to be completed by authorised dealer)	**Form A1** (For Import payments only) **Application for Remittance** **In Foreign Currency**	Serial No._____ (for use of Reserve Bank of India) A.D. Code NO. _____ Form No. _____(To be filled by authorized dealer)

I/We wish to purchase _____ _____

(Name of the currency) (Amount in words)

through THE KARUR VYSYA BANK LTD., International Division, Chennai – 600018 for payment to

(name and address of the authorized dealer)

_____

(Name and address of the beneficiary of the remittance)

in payment of imports into India,detailed below :

Details of goods imported or to be imported into India

Section A : Import licence particulars

Import Licence								Date of Issue			Date of Expiry			Face value of licence	Amount to be endorsed (in Rs.) @
Prefix		Licence No.	Suffixes					Date	Month	Year	Date	Month	Year		
1	2		1	2	3	4	5								

@ Actual amount endorsed in rupees against each licence involved, should be stated under this column

Note: If more than one licence is involved, particulars of all licneces should be furnished. If the space is inadequate, a separate statement may be attached The amount utilized against each licence should invariably be indicated..

Section B: Import particulars

Invoice Details				Quantity of goods	Description of goods	Harmonised System of Classification	Country of origin of goods	County from which goods are consigned	Mode of Shipement (air, sea, post, rail, river, transport etc)	Date of shipment (if not known approximate date)
No and Date	Terms (c.i.f, f.o.b, c&f. etc)	Currency	Amount							

Section C: Other particulars

1. Details of forward purchase contract, if any, booked against the import _____ (No. & Date of contract) _____ (Currency and Amount of Contract) _____ (Balance under the contract)

2. If remittance to be made is less than invoice value, reasons therefore (i.e part remittance, instalment etc.) _____

_____

I/We hereby declare that the statements made by me/us on this form are true and that I/We have not applied for an authorization through any other bank.
I/We declare also understand that the foreign exchange to be acquired by me/us pursuant to this application shall be used me/us only for the purpose for which it is acquired that the conditions subject to which the exchange is granted will be complied with.

Stamp

_____

(Signature of Applicant/Authorised Officer)

@ Name and Address of Applicant _____

Importer's Code Number_____

@Nationality_____

@ To be filled in capital letters

Date : _____

Note: For remittance covering intermediary trade, form A2 should be used

Declaration to be furnished by the Applicant

I/We declare that

a) the import licence/s against which the remittance is sought is/are valid and has/have not bee cancelled by DGFT
b) The goods to which this application relates Have been* / will be* imported into India on my/our own account
c) The import is on behalf of @ _____ * and
d) The invoice value of the goods which is declared on this form is the real value of the foods imported * / to be imported * into India.

If the import has been made: I/We attach the relative Customs-stamped Exchange Control copy of Bill of Entry */ Post parcel wrapper (for imports by post) * / Courier Wrapper (for import through courier)*

or

If the import is to be made: I/We undertake to produce within three months to the authorized dealer the relative Customs-stamped Exchange Control copy of Bill of Entry */ Post parcel wrapper (for imports by post) * / Courier Wrapper (for import through courier)*

* Strike out the item not applicable

@ Where the import is on behalf of Central/State Government Department or a company owned by Central/State Government/Statutory Corporation, Local Body, etc. the name of the Government Department, Corporation etc. should be stated.

Date :

_____
(Signature of the Applicant / Authorised Official)

Space for comments of the authorized dealer

(While forwarding the application to Reserve bank for approval, reference to Exchange Control Manual paragraph / A.D Circular in terms of which the reference is made should invariably cited. If any remittance application on account of the same import was referred to Reserve Bank earlier, reference to the last correspondence/approval should also be cited).

_____
(Signature of Authorised Offical)
Name :_____
Designation:_____
Name and Address of_____
Authorised dealer _____

Stamp

Date:

Certificate to be furnished by Authorised Dealer (Importer's Banker)

We herby certify that

a) This payment is

Put a tick (√) in the relevant block

i) ☐ an advance remittance
ii) ☐ in retirement of bills under Letter of Credit opened through us
iii) ☐ against documents received through our medium of collection
iv) ☐ on account of documents received direct by the applicant/s against undertaking furnished by the latter to submit Customs-stamped Exchange Control copy of Bill of Entry of posted Parcel/ courier wrapper with three months.
v) ☐ on account of documents received direct by the applicant/s against Customs-stamped Exchange control copy of Bill of Entry/post parcel/courier wrapper (attached) submitted by the latter
vi) ☐ _____ (Any other case to be explained)

b) all the Exchange Control regulations applicable to the remittance have been complied with the payment to the supplier of the goods has been * / will be* made through _____ (Name and address of the foreign Bank)

* Strike out the item not applicable

We also certify/undertake that a the relevant Customs-Stamped Exchange Control copy of Bill of Entry or post parcel / courier wrapper

- shall be verified by us within three months [vide certificate (a) (ii) and (iii) above].
- Has been verified [vide certificate (a) (v) above]
- Shall be obtained from the applicant/s within three months [vide certificate (a) (i) and (iv) above].

_____
(Signature of Authorised Offical)
Name :_____
Designation:_____
Name and Address of_____
Authorised dealer _____

Stamp

Date:

ON LETTER HEAD OF COMPANY

REQUEST LETTER FOR OUTWARD REMITTANCES (NON IMPORT)

To
The Branch Manager,
Karur Vysya Bank,
_____ Branch.
(To be completed by the applicant in block letters)

I/We wish to make the following outward remittance and hereby request you to remit/issue a DD for the amount as per the details given below:

I.Details of Applicant(remitter):

Name of the Applicant	
Account Number	
Address	
Phone No.	

II.Details of Beneficiary:

Name of the Beneficiary	
Address	
Beneficiary Account No.	
Name and address of the Bank where the beneficiary account is maintained	
SWIFT/SORT code, IBAN NO.	
Correspondent Bank Name and SWIFT code (if any)	
Foreign Bank charges	To our Account/To beneficiary Account

III.Details of Foreign Exchange required:

Foreign Curency:	Amount in figures:
Amount in Words:	

IV.Purpose of Remittance with Purpose Code:

Code:	Description:

V.Additional message to be sent along with wire transfer on your behalf:

Authorised Signatory

VI.Forward Contract details:

Forward Contract No. % Date	Forward Contract Amount	Amount to be utilized for this remittance	Due date of the contract

We request you to debit our EEFC account no. _____ for an amount of _____ and the balance amount to our OCC/SOD/CA._____ along with your charges.

DECLARATION

I/ We hereby declare that the total amount of foreign exchange purchased from or remitted through all sources in India during this Calendar / Financial year including this application is within USD Limit as prescribed by RBI for the said purpose under FEMA 1999.

I/ We hereby declare that the transaction mentioned above doesn't involve, and is not designed for any purpose for which the drawing of foreign exchange is prohibited under rule 3 of the FEMA Current A/c transactions Rules, 2000 read with schedule I therefore of Viz,

1. Travel to Nepal & or Bhutan
2. Transaction with a person resident in Nepal or Bhutan
3. Remittance out of lottery winnings
4. Remittance of Income from Racing / riding etc. or any other hobby.
5. Remittance for purchases of Lottery tickets, banned or prescribed magazines, football pools, sweep stakes, schemes involving money circulations, securing prize money awards etc.
6. Payment of commission on exports made towards equity investments in joint ventures / wholly owned subsidiaries abroad of Indian Companies
7. Remittance of dividend by any company to which the requirement of dividend balancing is applicable.
8. Payment of commission on export under rupee state credit route except commission up to 10% in invoice value of exports of Tea & Tobacco.
9. Payment related to "Call back services" or telephones.
10. Remittance of interest income on funds held in non-resident special rupee a/c schemes.

Other relevant declarations:

I/we hereby declare that the purpose and transaction details as mentioned above are true to the best of my knowledge does not involve, and is not designed for the purpose of any contravention or evasion of the provisions of the FEMA, 1999 or any rule, regulation, notification, direction or order made there under. I/We agree that I/We shall be responsible and liable for any incorrect detail provided by me/us.

I/We also hereby agree and undertake to give such information / documents as will reasonably satisfy you about this transaction in terms of the above declaration.

I/we agree that in the event of transaction could not be executed/debited to my/ our account after submitting the request for processing to the bank on account of insufficient/ unclear balance at the same time of execution of the transaction in my/ our account any exchange losses incurred in this connection due to reversal of the Forex deal can be charged to my/our account.

I/we agree that in the event the transaction is cancelled or revoked by me/us after submitting the request for processing to the bank any exchange losses incurred in this connection can be charged to my/our account. I/we further agree that once the funds remitted by me/us have been transmitted by the bank to the correspondent and/or beneficiary banks, the bank shall not be responsible for any delays in the disbursement of such funds including the withholding of such funds by the correspondent and/or beneficiary banks. I/We further agree that once the funds remitted by me / us have been transmitted by Karur Vysya Bank, intermediary Bank charges may be levied by Correspondent and / or Beneficiary Banks, which may vary from bank to bank.

I/we agree that in the event the transaction being rejected by the beneficiary bank because of incorrect information submitted by me, any charges levied by the beneficiary bank or exchange losses incurred in this connection can be charged to my bank account.

I/we also understand that if I/we refuse to comply with any such requirement or make only unsatisfactory compliance therewith, the bank shall refuse in writing to undertake the transaction and shall, if it has reason to believe that any contravention/evasion in contemplated by me/us, report that matter to the RBI.

Authorised Signatory

I/we also agree that the exchange rate will be applicable at the time of deal booking and may vary from the rate prevailing when the request is submitted. I/we also understand that the rate communicated to us (if any) is an indicative rate and the actual rate may be different from the same.

I/We declare that the transaction does not have linkage with any Specially Designated Nationals and Blocked Persons (SDN)/countries listed under OFAC in any manner. If the transaction involves linkage with any Specially Designated Nationals and Blocked Persons (SDN)/countries listed under OFAC in any manner, I/We undertake not to hold The Karur Vysya Bank Ltd responsible for any of its action or inaction in respect of the OFAC-linked transactions.

I/We further declare that the undersigned has the authority to give this application, declaration and undertaking on behalf if the firm/company.

I / We authorize you to debit my/our account together with your charges and remit outwardly as per details provided in the application.

Date:

Authorised Signatory

GUIDELINES/CHECKLIST FOR THE APPLICANT FOR ENSURING SPEEDY & ERROR FREE REMITTANCE

1. Request letter to be signed by Authorised Signatory/ies of the company.
2. Ensure that all columns are filled in the request letter.
3. Documentary proof from Overseas beneficiary such as Proforma Invoice, Copy of Contract etc.,
4. Form 15CA & 15CB.
5. Other Document to be submitted:
   a) ODI Payments:
      - Form ODI full set
      - Annexure 1 declaration cum undertaking
      - Networth certificate
      - CA certificate
      - PAN card
      - 3 yrs IT returns
      - Offer of shares from the overseas firm
      - Valuation certificate of the overseas firm
      - Registration certificate of the overseas firm
      - Copy of Board resolution
      - MOA of both the company

   b) Dividend Payments: Certificate from CA or CS that
      - Shares have been validly issued to an overseas party giving names of non-resident shareholders and quantity of shareholding as on the record date of payment of dividend.
      - That the amount of remittance being made is net of dividend already paid/payable to domestic accounts/custodians of foreign shareholders.
      - Certified true copies of the board and general meeting resolutions (AGM's resolution not applicable for interim dividend) authorizing payment and quantum(%) of dividend.

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	003056
Date :	10/11/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : DHIO Research & Engineering Pvt Ltd

Contents of the bill : Mech lab Ruflok Software Advance Payment

Amount : 3,80,000/-

Receiver's Signature 27/10/18

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : SKPVV HINDU HIGH SCHOOLS COMMITTEE)

Kothapet, VIJAYAWADA - 1

Voucher No. : Supporting

Date : 27/10/2018

A/c.....

.....

Paid to Mr. / Mrs. DMIO Research & Engineering Pvt. Ltd.

Rupees in words Three lakhs eighty thousand rupees only

towards ANSYS software advance

.....

Rs. 380000/-

kplad 29/10/18

Signature

CHANDAN.U.
9964065457
DMIO

Entered by

Secretary & Correspondent

Treasurer

dhio
center for excellence

Ref No: DHIO/ANSYS/2018-2019/Quote-25
Bangalore, 01-10-2018

To,
Dr P S Srinivas
Professor & HOD Mechanical Dept.
Potti Sriramulu Chalavadi Mallikarjuna
Rao College of Engineering & Technology
Kothapet, Vijayawada- 520001
website: www.pscmr.ac.in

Sub: Submission of Techno-Commercial Proposal for ANSYS Mechanical CFD Teaching Bundle

We introduce ourselves as DHIO Research and Engineering Pvt Ltd., Bangalore based collaborative engineering design, analysis and engineering company involved in High End Simulation Software sales, support, service and training.

We here by submit techno-commercial proposal for **ANSYS Mechanical CFD Teaching Bundle**

In case of any queries or clarifications or any additional information that you may need on our product capabilities please do feel free to contact us.

Thanking you and assuring you of our best services and support at all times and we look forward to hearing from you.

With Warm Regards

DHIO Research & Engineering Pvt. Ltd.

Santhosh N L
Director
santhosh@dhio.in +91 9591994642

Ok to Proceed
9/10/18

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1. About DHIO Research and Engineering Pvt Ltd.,

DHIO Research & Engineering Pvt Ltd. is a Collaborative Engineering Services and R&D Company based in Bangalore India.

DHIO has an experienced pool of experts, engineers and scientists with decades of domain experience and expertise in applying state of the art simulation technology to in advanced Computer Aided Engineering Design, Analysis, Life Estimation and Optimisation Knowledge. DHIO Extends its support to Auto, Aero, Power plant, Chemical Processing, Railways and General Engineering Companies to achieve complex engineering simulation needs in product/process/material design, redesign, engineering, reverse engineering, analysis and optimisation to save money, material and time.

DHIO service portfolio includes

- CAD, Meshing, Advanced Pre and Post Processing
- FEA Studies – Structural Linear/Nonlinear/Static/Dynamic Analysis
- Crash, Impact Simulation
- Vibration, Dynamics, Acoustic, Seismic, Code Evaluation
- Life Calculations – Fatigue, Durability
- Thermal and Heat Transfer Studies
- Multi Body Dynamic Simulation
- Multi-Disciplinary Optimization
- Computational Fluid Dynamics
- Thermal Fluid Network Simulation
- Manufacturing Process Simulation
- Electronic Cooling Simulation
- EMI/EMC Evaluation and Certification
- Chemical Kinetics Simulation

DHIO – technology transfer division has a wealth of knowledge in selling CAE products and supplying technical support to customers that are solving highly complex simulations. DHIO's technical knowledge and understanding of CAE domain has helped customers to achieve the best results in shortest lead time by using state of the art technology tools.

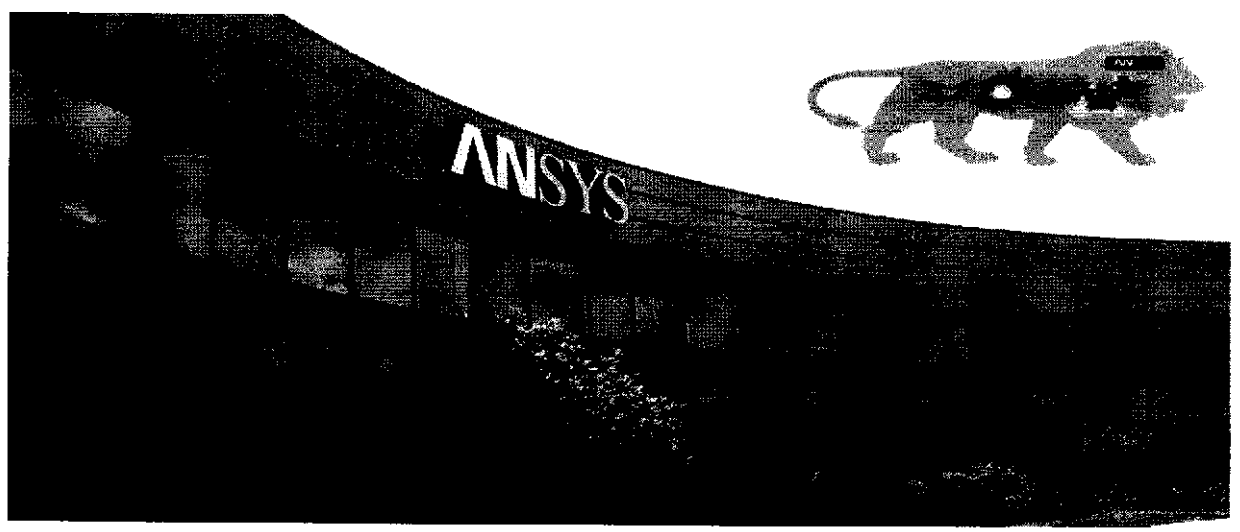
DHIO – training division supports working professionals, students and faculty members to adopt advanced software and technology knowledge. DHIO has unique courses designed for different level of engineers and covers theory + practical + projects and internship program to enhance the skills and experience.

For any details please contact us for any of your engineering needs.

2. About ANSYS India

ANSYS has been having direct presence in India for over 20 years. The Indian office is the second largest office for ANSYS in the world, second only to USA where the company is founded. Pune also has one of the development centres of ANSYS with sales offices in Bangalore, Delhi, Chennai, Hyderabad and Kolkata. ANSYS has a large customer base in India. Some of the reputed customers for ANSYS in India include:

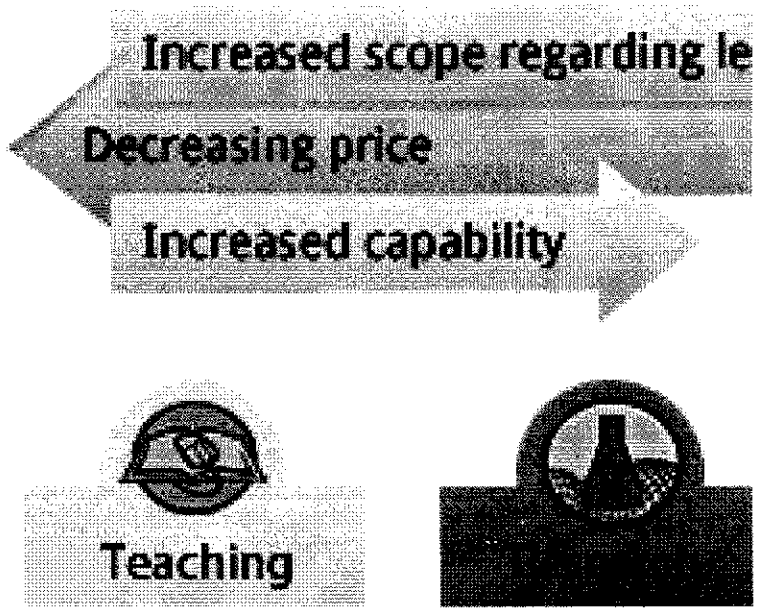
- Automotive Research: Mahindra Group, Honda Motors, Ashok Leyland, General Motors, BOSCH, ARAI, Cummins, TATA Group, Bajaj Auto
- Defence & Aerospace: HAL, NAL, Ministry of Defence, ISRO, Honeywell, ADA, General Electric, United Technologies, Airbus
- Energy Sector: NTPC, NHPC, Hindustan Petroleum, NPCIL, Alstom, BP, VESTAS, Suzlon
- Chemical, Oil & Gas: Ultra Tech, Indian Oil, ThyssenKrupp, EIL, Reliance, Shell, UOP, United Phosphorus, Phillips Carbon Black, Technip
- Industrial Equipment: BHEL, Kirloskar, Thermax, Godrej, L&T, Crompton Greaves, Siemens, Flowserve, MBE
- Metals & Minerals: Tata Steel, SAIL, JSW, NML, NALCO, AMPRI, Bharat Forge, CMERI
- Engineering Services: TCS, Infotech Partners, Wipro, Infosys, L&T, HCL, Quest
- Universities: Indian Institutes of Technology, Birla Institute of Technology, Institute of Technology, Raurkela, Vellore Institute of Technology, MSME Tool Rooms...



3. ANSYS Solutions for Academia

ANSYS proposes building the value chain through the following drive:

- Embedding Simulation: Campus licenses of ANSYS teaching and research licenses which shall enable teaching fundamentals of Simulation. ANSYS shall facilitate student competitions, projects and thesis to adopt simulation technology
- Growing Expertise: Integrating simulation in research activities, building simulation labs through simulation in Do-It-Yourself setups so the students community gets hands on and develop expertise
- Simulation in User Community: Developing Industry sponsored projects, Simulation in Incubators and assigning internships through a cooperative model
- Access to ANSYS Multi-physics licenses 24 x 7 within Campus
- Learning Portals containing curriculum-oriented courseware and self-learning courseware of Multi-physics Suite for Students and Professors
- Massive Online Training classes for Students and Professors
- Student Competition / project-based learning
- Establish Innovation Lab / Makers space / Incubation Center
- University Industry engagement via Symposiums, Seminars, Workshops and Round Tables



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center for excellence

4. Commercial Quote

DHIO Research & Engineering Pvt Ltd.,
28 (Old No 619/1), 2nd Floor, 36th Cross,
2nd Block, Rajajinagar, Next to Srinivasa
Kalyana Mantapa, Bangalore-560010 India
Web: www.dhioresearch.com Email: info@dhioresearch.com

QUOTE

Quote No	End User	Contact Details	Software and Version
Ref No: **DHIO/ANSYS/2018-2019/Quote-25**	**Dr P S Srinivas Professor & HOD Mechanical Dept.**	**Dr P S Srinivas Professor & HOD**	**ANSYS Mechanical CFD Teaching Bundle**

Dear Sir,

On behalf of DHIO Research and Engineering Pvt Ltd., (Reseller for ANSYS India), I am pleased to provide the following proposal for a ***Site Perpetual License*** of **ANSYS Mechanical CFD Teaching Bundle** for **Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering & Technology**

SL	Description	Quantity	Type of License	Charges in INR
1	**ANSYS Academic TEACHING Mechanical CFD (50 Tasks)** **TEACHING BUNDLE**	**50 USERS**	**PERPETUAL**	**INR 6,50,000.00**
	GST	**18%**		**INR 1,17,000.00**
Total and Final Price				**INR 7,67,000.00**
Rupees Seven Lakhs Sixty-Seven Thousand Only				

Terms and Conditions

The terms and conditions of this proposal are confidential to DHIO & **Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering & Technology** and may not be disclosed to other parties without the specific written permission of DHIO due to the specific considerations provided.

Please note

- **Taxes & Duties:** 18% GST Applicable Extra
- **Validity:** This offer is valid for 15 days from the date of proposal.
- **Training:** 3 Days of training is inclusive in the price quoted
- **Delivery:** ANSYS Support Portal Login will be provided and Software and Manuals in CD Format.

- **AMC:** 1st Year AMC is provided free, for the subsequent years of AMC 20% of the list price is applicable; AMC includes Software Updates, Maintenance and Support.
- **Delivery:** Within 3 to 4 weeks from the receipt of purchase order & signed license form. TECS/AMC starts from the date of License generation as per ANSYS standard norm. The software will have delivered through electronic down load from ANSYS customer portal.
- Purchase Order to be Placed on
  DHIO Research & Engineering Pvt Ltd.,
  # 28 (Old No 619/1), 2nd Floor, 36th Cross,
  2nd Block, Rajajinagar,
  Next to Srinivasa Kalyana Mantapa, Bangalore-560010 India

- **Payment Terms**
  - 50% at the Time of Purchase order
  - 50% on completion of installation and commissioning of the software at the customer site.

- The VAT/TIN No: and CST details are as mentioned below for DHIO Research and Engineering Pvt Ltd.,
  - **PAN: AADCD7135P**
  - **TIN: 2941601526**
  - **SERVICE TAX NUMBER: AADCD7135PSD001**
  - **CIN: U73100KA2011PTC057019**
  - **SSS: 290202101462**

Authorized Signatory for
DHIO Research & Engineering Pvt Ltd

Santhosh N L
Director
DHIO Research & Engineering Pvt Ltd
Ph. +91 9591994642 | Email: santhosh@dhio.in

(22)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003045
Date :	24/10/13

Bill No. : KVB 3721 *Date* : .....

Head of Account : K. Sudhakar

Contents of the bill : Eweb guru Payment yearly Subscription

Amount : 2,950/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY

Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada.
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906.
D.No. 7-3-6/1, Raghava Reddy Street, Kotha pet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax: 0866-2423443, E-mail: principal@pscmr.ac.in., Web: www.pscmr.as.in

13.10.2018

To
The Principal
PSCMRCET,
Vijayawada-1.

Respected Sir,

Sub: *Request to sanction the attached amount paid to the SSL Certificate for pscmr.ac.in domain*-reg.

It is to bring to your kind notice that our domain pscmr.ac.in needs to have SSL Certificate as part of the security for the domain. I have paid the Rs.2,950/- to the ewebguru.com on 10.10.2018. Please remit this amount at the earliest.

Thanking You Sir,

Yours sincerely,

K.Sudhakar, Assoc.Prof of CSE

College Website In Charge.

AVR

13/10/18

Secretary Sir Permission to Whatsup

PAID

M/s EWEBGURU
PAN No. AADFE8084H
ARN (GST) AA0506170049736
GSTIN 09AADFE8084H1Z5
SAC 998315
G-12, First Floor, Sector 63
Noida
Uttar Pradesh
Pin 201301

Invoice #EWEB-82492

Invoice Date: 10/10/2018

Invoiced To
PSCMR College of Engineering&Technology
ATTN: Sudhakar Kattupalli
Pottisriramulu Chalavadi Mallikharjuna Rao College of Engineering & Technology
Raghavareddy Street, Kothapet
Vijayawada, Andhra Pradesh, 520001
India

GSTIN: 37AABAS1653D1ZR

Description	Total
Comodo Positive SSL - pscmr.ac.in (10/10/2018 - 09/10/2019)	Rs.3000.00 INR
Discount	Rs.-500.00 INR
Sub Total	**Rs.2500.00 INR**
18.00% IGST	**Rs.450.00 INR**
Credit	**Rs.0.00 INR**
Total	**Rs.2950.00 INR**

Transactions

Transaction Date	Gateway	Transaction ID	Amount
10/10/2018	PayUMoney	213031897	Rs.2950.00 INR
		Balance	**Rs.0.00 INR**

PDF Generated on 10/10/2018

to provide Security from Hardware - forwarded to Principal Sir MV

know

(23)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	003052
Date :	24/10/18

Bill No. : KVB3771 *Date* : .....

Head of Account : A. Rama Devi

Contents of the bill : Reimbursement of NPTEL Exam Fee purpose.

Amount : 1100/-

A Rama Devi
Receiver's Signature

Treasurer

Secretary & Correspondent

From

Dr. A Rama Devi
Professor
Dept. of Freshmen Engineering
PSCMRCET
Vij - 1

23 October 2018

To

The Principal
PSCMRCET
Vij - 1

Dear Sir,

Sub: Request for the reimbursement of NPTEL exam fees - Reg.

This is to bring to your kind notice that I gave the NPTEL exam on 7/10/18 in the course "Technical English for Engineers". I got through the exam with a consolidated score of 91%. So, I request you to reimburse the exam Registration fees of Rs. 1,100/-. Kindly consider.

Recommended for re-imbursement.
KNCaw
23/10/18

Thanking you, Sir,

Yours faithfully,

A Rama Devi

Encl: A photocopy of the Online Certificate.

Ok
[signature]
23/10/18

Received
23/10/18.

Roll No:NPTEL18HS27S21930217

To

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING AND TECHNOLOGY
VIJAYAWADA

2/371

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:2

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

TOP TOPPER 1%

This certificate is awarded to

RAMADEVI AMARA

for successfully completing the course

Technical English for Engineers

with a consolidated score of **91** %

Online Assignments	23.75/25	Proctored Exam	67.5/75

Total number of candidates certified in this course: **1874**

A. Ramesh
Prof. A. Ramesh
Chairman
Center for Continuing Education, IITM

Aug-Sep 2018
(8 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

FREE ONLINE EDUCATION swayam

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POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003051
Date :	24/10/18

Bill No. : KVB 3771 Date : .....

Head of Account : S. krishna kishore

Contents of the bill : payment for paper publish, NPTEL certification, cloud computing IIT Bombay workshop purpose.

Amount : 10,514/-

S k Kishore 24/10/18
Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Vijayawada,
Dt.13-10-2018

To

The Principal,

PSCMRCET,

Vijayawada-1.

Sir,

Sub:- Paper published in Scopus Indexed – request for reimburse – reg.

This is to bring to your kind notice that, on 14th September, 2018 my paper titled "Building Confidential and Efficient Query Services in the Cloud with RASP Data Perturbation" published in the Journal IJOET (International Journal of Engineering & Technology) which is scopus indexed. I am herewith attaching the online receipt of payment towards publication charges. Hence I request you to reimburse the amount at the earliest.

This is for your kind information.

Thanking you sir,

S.K.Laishore 13/10/18.

(S. Krishna Kishore)
Asst. Professor, CSE Department, PSCMRCET.

Encl: Payment receipt.

received 23/10/18

Forwarded to Principal sir.

Recommended an incentive of Rs.5000/- kvcav 16/10/18

provide proof about the authenticity of the Journal (scopus indexing) kvcav.

23/10/18

Science Publishing Corporation
Publisher of International Academic Journals

International Journal of Engineering & Technology

ISSN: 2227-524X

Dear **S. Krishna Kishore, Gudipati Murali and A. Chandra Mouli**,

I am happy to inform you that after favourable referee reports, your article: **"Building Confidential and Efficient Query Services in the Cloud with RASP Data Perturbation"** has been accepted for publication in International Journal of Engineering & Technology, ISSN: 2227-524X.

On behalf of Editorial Board and publisher, thank you very much for your submission to our journals.

Sincerely,

Editor

International Journal of Engineering & Technology

Science Publishing Corporation.

309, 2nd Floor,
5th Street Extension, Gandhipuram,
Coimbatore-641012.
Contact:0422-4213231
Web:www.bonfring.org

Date:07/06/2018

To

S. Krishna Kishore,

Department of Computer Science & Engineering,

Acharya Nagarjuna University,

Guntur, AndhraPradesh, India.

Dear Sir,

The following is the Invoice for Journal publication.

Journal Name: **International Journal of Engineering & Technology**

Article Title: **Building Confidential and Efficient Query Services in the Cloud with RASP Data Perturbation**

S.No.	Particulars	Quantity	Price/copy	Amount in Rupees
1	Journal Publication	1	10,000	10,000
			Grand Total	10,000

Ten Thousand Rupees Only

Regards,

International Journal of Engineering & Technology, 7 (x) (2018) xxx-xxx

SPC

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET
doi:
Research paper, Short communication, Review, Technical paper

Building confidential and efficient query services in the cloud with RASP data perturbation

S. Krishna Kishore[1*], Gudipati Murali[2], A. Chandra Mouli[3]

[1]*Research Scholar, Department of Computer Science & Engineering, Acharya Nagarjuna University, Guntur, Andhra Pradesh. Asst. Professor, Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering & Technology, Vijayawada, Andhra Pradesh, India.*

[2]*Research Supervisor, Department of Computer Science & Engineering, Acharya Nagarjuna University, Guntur, Andhra Pradesh. Professor, KKR & KSR Institute of Technology And Sciences, Vinjanampadu, Guntur, Andhra Pradesh, India. E-mail:m_gudipati@yahoo.com*

[3]*Asst. Professor, Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering & Technology, Vijayawada, Andhra Pradesh, India. E-mail:achandramouli@pscmr.ac.in*

**Corresponding author E-mail:krishnakishoresajja@gmail.com*

Abstract

With the improvement of administrations figuring and distributed computing, it has turned out to be conceivable to outsource extensive databases to database specialist co-ops and let the suppliers keep up the range-inquiry benefit. Nonetheless, a few information may be touchy that the information proprietor does not have any desire to move to the cloud unless the information classification and inquiry security are ensured. We propose the Random Space Encryption (RASP) approach that permits productive range look with more grounded assault versatility than existing proficiency centered methodologies. The arbitrary space irritation (RASP) information annoyance technique to give secure and proficient range question and kNN inquiry administrations for ensured information in the cloud. The RASP information annoyance strategy consolidates arrange protecting encryption, dimensionality development, arbitrary commotion infusion, and irregular projection, to give solid flexibility to assaults on the irritated information and questions. It likewise saves multidimensional reaches, which enables existing ordering systems to be connected to speedup extend question handling. The kNN-R calculation is intended to work with the RASP go inquiry calculation to process the kNNinquiries.

Keywords: *Inquiry benefits in the cloud, security, run question, kNN question.*

1. Introduction

With the wide arrangement of open distributed computing foundations, utilizing mists to have information question administrations has turned into an engaging answer for the points of interest on adaptability and cost-sparing. With the cloud frameworks, the administration proprietors can advantageously scale up or down the administration and pay for the hours of utilizing the servers. While new methodologies are expected to safeguard information secrecy and inquiry protection, the effectiveness of question administrations and the advantages of utilizing the mists ought to likewise be saved. It won't be important to give moderate inquiry benefits because of security and protection confirmation. It is additionally not useful for the information proprietor to utilize a lot of in-house assets, in light of the fact that the motivation behind utilizing cloud assets is to diminish the need of keeping up adaptable in- house frameworks. Accordingly, there is an unpredictable relationship among the information secrecy, question security, the nature of administration, and the financial aspects of utilizing the cloud.[1] Here we abridge these prerequisites for building a handy inquiry benefit in the cloud as the CPEL criteria: information classification, question security, effective inquiry handling, and low in-house preparing cost. Fulfilling these prerequisites will drastically build the multifaceted nature of developing question benefits in the cloud. Some related methodologies have been produced to address a few parts of the issue. Notwithstanding, they don't palatably address these perspectives. For instance, the crypto index and request protecting encryption (OPE) are helpless against the assaults. The upgraded crypto index approach puts substantial weight on the in-house framework to enhance the security and protection. The New Casper approach utilizes shrouding boxes to ensure information questions and inquiries, which influences the proficiency of inquiry handling and the in house workload. We propose the irregular space bother (RASP) way to deal with building viable range inquiry and k- closest neighbor (kNN) question benefits in the cloud. The proposed approach will address all the four parts of the CPEL criteria and intend to accomplish a decent adjust on them. The RASP kNN question benefit (kNN-R) utilizes the RASP run inquiry administration to process kNN queries.[1] The RASP bother is an extraordinary blend of OPE, dimensionality development, arbitrary commotion infusion, and irregular projection, which gives solid privacy ensure. We have painstakingly assessed our approach with manufactured and genuine informational indexes. The outcomes demonstrate its remarkable favorable circumstances on all parts of the CPEL criteria. The RASP technique and its blend give secrecy of information and this approach is for the most part utilized to protect the multidimensional scope of inquiries in secure way, with ordering and effective question preparing. The go question is utilized as a part of database for recovering the put away data's. It will recover the records from the database where it can indicates some an incentive amongst upper

and lower limit. The kNN question means k-Nearest Neighbor inquiry. K means positive number and this question are utilized to discover the estimation of closest neighbor to k. The RASP bother installs the multidimensional information into a mystery higher dimensional space, enhanced with irregular commotion expansion to ensure the secrecy of data.[2]

2. Related work

We survey the some most related techniques like OPE, crypto-file, DRE, and PIR. Request Preserving Encryption: The request protecting encryption (OPE) jam the dimensional esteem arrange after encryption. Along these lines, it can be utilized as a part of most database tasks, for example, ordering and range inquiry. OPE speaks to Order Saving Encryption is utilized for information that permits any correlation. What's more, that correlation will be connected for the scrambled information; this will be managed without unscrambling. It permits database lists to be worked over an encryption table. The disadvantage of this procedure is the encryption key is as well expansive and execution makes the time and space overhead.

Cryptoindex: Cryptoindex is additionally in light of section astute bucketization. It allots an arbitrary ID to each can; the values in the can are supplanted with the pail ID to create the helper information for ordering. To use the record for inquiry handling, a typical range question condition needs to be changed to a set-construct inquiry in light of the pail IDs. Crypto record strategy is helpless against assaults yet the working arrangement of the crypto record has numerous troublesome procedures to give the secured encryption and security and furthermore the New Casper approach is utilized to ensure information and question yet the effectiveness of the question procedure will be influence. For instance, Xi < ai may be supplanted with

$$X'i \in [ID1, ID2, ID3]$$

On the off chance that the aggressor figures out how to know the mapping between the info unique inquiry and the yield can based question, the range that a basin ID speaks to could be evaluated. The width of the basin decides how exact the estimation should be possible. A basin dispersion plot was proposed to address this issue, which, be that as it may, needs to forfeit the exactness of question comes about. Another disadvantage of this technique is that the customer, not the server, needs to sift through the question result.

Low accuracy comes about raise extensive weight on the organize and the customer framework. Moreover, due to the randomized container IDs, the record based on basin IDs isn't so proficient for handling range questions as the file on OPE scrambled information is Separation recoverable encryption : DRE is the most instinctive strategy for protecting the closest neighbor relationship. As a result of the precisely safeguarded separations, numerous assaults can be connected. Here, speck items are utilized rather than separations to discover kNN, which is stronger to separate focused on assaults. One disadvantage is the hunt calculation is constrained to direct sweep and no ordering strategy can be connected. Private data retrieval(PIR): PIR tries to completely protect the security of access design, while the information may not be encoded. PIR plans are ordinarily expensive.

This protection safeguarding multi catchphrase seek depends on the plain content pursuit. In this the looking procedure will done by positioning procedure. The downside of this idea is a direct result of positioning procedure in house preparing time will be augmented.

The examination on security protecting information mining has multiplicative bother techniques, which are like the Grate encryption, however with more accentuation on safeguarding the utility for information mining.

3. Methodology

Inquiry services in the cloud

Inquiry is for the most part used to seek. Inquiries are built by utilizing organized inquiry dialect. It is for the most part used to recovering the required data from the database. Inquiry administrations are the strategy for administrations that are uncovered through an execution of specialist co-op. Here by utilizing RASP, go question and kNN inquiry in cloud give secure, quick putting away and recovering procedure of encryption and unscrambling of an information from database.

Range inquiry is a critical kind of question for some information investigative assignments from basic total to additional complex machine learning assignments. Give T a chance to be a table and Xi, Xj, and Xk be the genuine esteemed qualities in T, and an and b be a few constants. Take the tallying inquiry for instance. A commonplace range inquiry resembles

select tally (*) from T
where Xi ϵ [ai,bi] and Xj ϵ (aj,bj) and Xk=ak

which ascertains the quantity of records in the range characterized by conditions on Xi, Xj, and Xk. Range questions might be connected to self-assertive number of qualities and conditions on these properties joined with restrictive administrators "what's more, "or." We call each piece of the question condition that includes just a single characteristic as a basic condition. A straightforward condition like Xi ϵ[ai,bi] can be portrayed with two half space conditions $Xi \leq bi$ and $-Xi \leq -ai$. Without loss of generality, we will talk about how to process half-space conditions like $Xi \leq bi$ in this paper. A slight alteration will broaden the talked about calculations to deal with different conditions like Xi<bi also, Xi = bi. kNN inquiry is to locate the nearest k records to the inquiry point, where the euclide an separation is regularly used to measure the vicinity. It is regularly utilized as a part of location based administrations for looking through the items near a question point, and additionally in machine learning calculations, for example, progressive grouping and kNN classifier. A kNN question comprises of the inquiry point and the quantity of closest neighbors, k.

Framework architecture

We accept that a distributed computing foundation, for example, Amazon EC2, is utilized to have the question administrations and expansive informational indexes. The reason for this design is to expand the exclusive database servers to people in general cloud, or utilize a cross breed private- open cloud to accomplish adaptability and lessen costs while looking after privacy. Each record x in the outsourced database contains two sections: the RASP-handled characteristics D'=F(D,K) and the scrambled unique records, Z = E(D,K'), where K and K' are keys for annoyance and encryption, individually. The Grate annoyed information D' are for ordering and inquiry handling. Fig. 1 demonstrates the framework design for both Grate based range inquiry administration and kNN benefit.

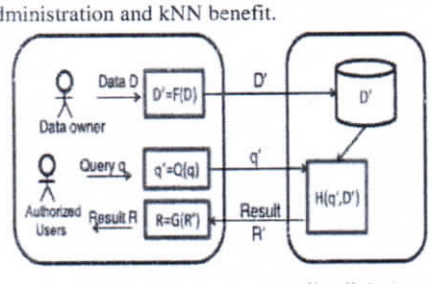

Fig. 1: The system architecture for RASP- based query services

There are two unmistakably isolated gatherings: the trusted parties and the untrusted parties. The trusted gatherings incorporate the information/benefit proprietor, the in-house intermediary server, and the approved clients who can just submit questions. The

information proprietors ends out the irritated information to the cloud. Then, the approved clients can submit run questions or kNN inquiries to learn insights or discover a few records. The untrusted parties incorporate the inquisitive cloud supplier who has the inquiry administrations and the secured database. The RASP-irritated information will be utilized to construct records to help question preparing. There are various essential techniques in this structure:

l) F(D) is the RASP irritation that changes the first information D to the annoyed information D'; 2) Q(q) changes the first inquiry q to the secured frame q' that can be prepared on the annoyed information; and 3) H(q',D') is the question handling calculation that profits the outcome R'. At the point when the measurements, for example, SUM or AVG of a particular measurement are required, RASP can work with fractional homomorphic encryption, for example, Paillier encryption [24] to figure these measurements on the encoded information, which are then recuperated with the technique G'(R').

Danger model

The cloud server is considered as "genuine however inquisitive" in our model, which is steady with related takes a shot at cloud security. In particular, the cloud server acts in a "fair" form and accurately takes after the assigned convention determination. Be that as it may, it is "interested" to derive and investigate information (counting file) in its stockpiling and message streams gotten amid the convention to take in extra data.

Suppositions: Our security investigation is based on the critical highlights of the engineering. Under this setting, we trust the accompanying presumptions are proper:

□ Only the approved clients can question the Restrictive database. Approved clients are not pernicious and won't deliberately rupture the classification. We consider insider assaults are orthogonal to our inquire about; in this way, we can bar the circumstance that the approved clients intrigue with the untrusted cloud suppliers to release extra data.

□ The customer side framework and the correspondence channels are legitimately secured and no ensured information records and questions can be spilled.

□ Adversaries can see the irritated database, the changed inquiries, the entire inquiry preparing strategy, the entrance designs, and comprehend the same question restores a similar arrangement of results, yet nothing else.

□ Adversaries can have the worldwide data of the database, for example, the applications of the database, the characteristic spaces, and potentially the characteristic appropriations, by means of other distributed sources (e.g., the circulation of offers, or patient sicknesses, out in the open reports).

Secured resources:

Data secrecy and inquiry security ought to be ensured in the RASP approach. While the honesty of question administrations is likewise an imperative issue, it is orthogonal to our investigation. Existing respectability checking and avoiding methods [33], [29], [18] can be incorporated into our structure. Consequently, the uprightness issue will be prohibited from the paper, and we can accept the inquisitive cloud supplier is occupied with the information and inquiries, however it will sincerely take after the convention to give the foundation benefit. Assailant displaying. The objective of assault is to recoup (or assess) the first information from the annoyed information, or recognize the correct inquiries (i.e., area questions) to rupture clients' protection. As indicated by the level of earlier information the assailant may have, we order the assaults into two classes:

□ Level 1: The assailant knows just the irritated information and changed inquiries, with no other earlier learning. This relates to the cipertext-just assault in the cryptographic setting

information circulations, including singular quality conveyances and the joint dispersion (e.g., the covariance framework) between characteristics. By and by, for a few applications, whose insights are intriguing to general society space, the dimensional circulations may have been distributed by means of different sources.

Grate: random space perturbation

Grate indicates Random Space Perturbation. Grate is one sort of multiplicative annoyance, with a novel mix of OPE, measurement extension, arbitrary commotion infusion, and irregular projection. Arbitrary projection is principally used to process the high dimensional information into low dimensional information portrayals. It contains highlights like great scaling potential and great exhibitions. Arbitrary commotion infusion is basically used to adding clamor to the contribution to get appropriate yield when we contrast it with the assessed control. The RASP strategy and its blend give privacy of information and this approach is for the most part used to ensure the multidimensional scope of questions in secure way and furthermore with ordering and productive inquiry preparing will be finished. Grate has some vital highlights. In RASP the utilization of lattice duplication does not secure the dimensional esteems so no compelling reason to experience the ill effects of the dispersion based assault. Grate keeps the information that are irritated from separate based assaults; it doesn't secure the separations that are happened between the records. And furthermore it won't secure more troublesome structures it might be a network and different parts. The range inquiries can be send to the RASP irritated information and this range question portrays open limits in the multidimensional space. In irregular space annoyance, the word irritation is utilized to do falling this procedure will occur as per the key esteem that is given by the proprietor. In this module the information proprietor need to enroll as proprietor and need to give proprietor name and key esteem. And afterward the client have enroll and get the key esteem and information proprietor name from the proprietor to do access in the cloud. Here client can present their inquiry as range question or kNN question and find their solution. We investigate and demonstrate the outcome with scrambled and furthermore in unscrambled arrangement of the information for the question build by the client. Grate has a few vital highlights. To begin with, RASP does not safeguard the request of dimensional esteems due to the lattice increase segment, which separates itself from arrange protecting encryption plans, and along these lines does not experience the ill effects of the dissemination based assault. Second, RASP does not save the separations between records, which keeps the irritated information from remove based assaults. Since none of the changes in the RASP: Eope, G, and F jelly separations, evidently the RASP irritation won't safeguard separations. Third, the first range questions can be changed to the RASP annoyed information space, which is the premise of our inquiry handling methodology. A range inquiry portrays a hypercubic zone (with potentially open limits) in the multidimensional space.

kNN query processing with RASP

The RASP irritation does not save separations (and separation orders), kNN inquiry can't be specifically prepared with the RASP annoyed information. In this area, we plan a kNN inquiry handling calculation in view of range questions (the kNN-R calculation). Subsequently, the utilization of record in extend question handling likewise empowers quick preparing of kNN inquiries. The first separation based kNN inquiry preparing finds the closest k focuses in the circular range that is focused at the question point. The essential thought of our calculation is to utilize square ranges, rather than circular reaches, to locate the rough kNN comes about, with the goal that the RASP run question administration can be utilized. There are various key issues to make this work safely and

that most likely contains the k comes about, without numerous connections between the cloud and the customer? 2) Will this arrangement safeguard information secrecy and inquiry protection? 3) Will the intermediary server's workload increment? what exactly degree? The calculation depends on square ranges to roughly discover the kNN contender for a question point, which are characterized as takes after.

Definition 1: "A square range is a hypercube that is focused at the question point and with rise to length edges."

Fig. 2 delineates the range-inquiry based kNN handling with 2D information. The Inner Range is the square range that contains in any event k focuses, and the Outer Range encases the round range that encases the inward range. The external run doubtlessly contains the kNN comes about (see Proposition 2) yet it might likewise contain superfluous focuses that should be separated out.

Suggestion 1 : "The kNN-R calculation returns comes about with 100 percent review."

Verification : The circle in Fig. 2 between the external range and the inward range covers all focuses with separations not exactly the span r. Since the internal range contains in any event k focuses, there are in any event k closest neighbors to the inquiry focuses with removes not as much as the range r. Thusly, the k closest neighbors must be in the external range.

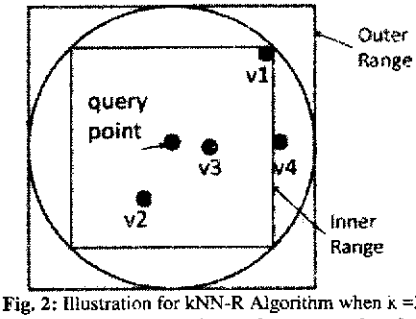

Fig. 2: Illustration for kNN-R Algorithm when k =3.

The kNN-R calculation comprises of two rounds of connections between the customer and the server. Fig. 3 exhibits the strategy. 1) The customer will send the underlying upper bound range, which contains more than k focuses, and the underlying lower bound range, which contains not as much as k focuses, to the server. The server finds the inward range and comes back to the customer. 2) The customer ascertains the external range in light of the inward range and sends it back to the server. The server finds the records in the external range and sends them to the customer. 3) The customer unscrambles the records and locate the best k hopefuls as the last outcome.

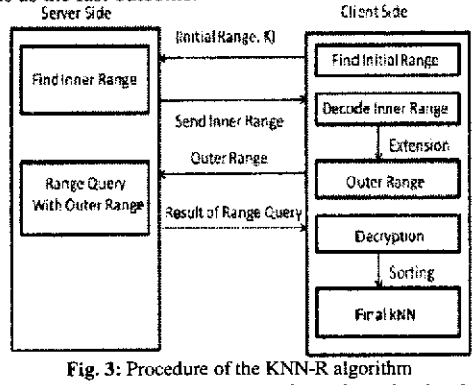

Fig. 3: Procedure of the KNN-R algorithm

In the event that the focuses are around consistently circulated, we can appraise the exactness of the returned result. With the uniform supposition, the quantity of focuses in a region is corresponding to the measure of the zone. On the off chance that the internal go contains m focuses, m > = k, the external range contains q focuses, and the dimensionality is d, we can infer q =2d=2m.

4. Conclusion

We propose to think about an outsourced benefit in view of the CPEL criteria: information Confidentiality, question Privacy, Efficient question preparing, and Low in house workload. With the CPEL criteria as a main priority, we build up the kNN-R approach for secure outsourced kNN question benefit. The kNN-R approach exploits quick and secure RASP extend question preparing to execute kNN question handling. It can discover high accuracy kNN comes about and furthermore limit the connections between the cloud server and the in house customer. High accuracy kNN comes about and limited collaborations result in low in house workload. We have led a careful security examination on information secrecy and inquiry protection. Contrasted with the related methodologies, the kNN-R approach accomplishes a superior adjust over the CPEL criteria. Scratch technique with extend inquiry and kNN question. This strategy essentially used to annoy the information given by the proprietor what's more, spared in distributed storage it additionally joins arbitrary infusion, arrange safeguarding encryption and arbitrary commotion projection and additionally it has contains CPEL criteria in it. By utilizing the range inquiry and kNN question client can recover their information's in secured way and the process in time of the question is limited.

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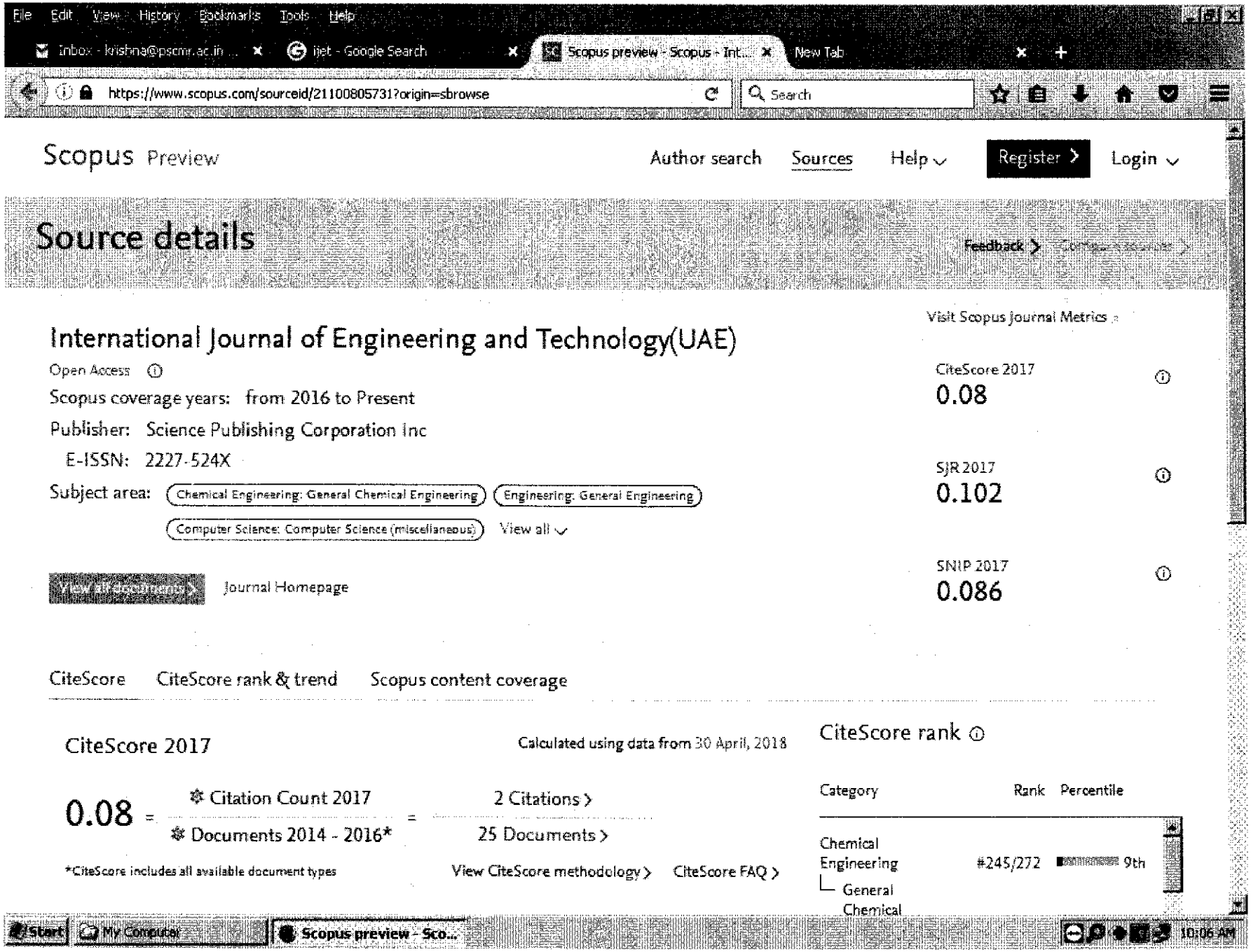
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10. Please bring your own Scientific Calculator, for use in the exam.
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1	Registraion fee for participants	400 ✓	
2	Train Tickets from Vijayawada to Mumbai - 2 tickets	4022 ✓	1150 refunded
3	Return Train Tickets from Mumbai to Vijayawada	3977 ✓	1135 refunded
4	Local conveyance, auto	200	
5	Train Food expenses, water - 2 persons, in Mumbai	1500	
6	in Mumbai transport charges, CAB	1500	

Total Amount:	11199 → 11599	2285 refunded
Refunded for cancellation:	2285	
amount	**8914** → 9314	
(add) Cancellation Charges:	381	
Net amount	**9295** → 9695	
(Less) Advance received:	**6000**	
Balance amount:	**3295** → 3695	

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1 S. Krishna Kishore, Asst.Prof. : S.K.Kishore.

2 AUV Nageswara Rao, Librarian: AUVNRao.

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known

Tickets - 4022 - 1150 = 2872

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9314

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Quota	ClassType
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Boarding At	Date of Boarding
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Adult	Child
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Transaction Id	Fare
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Name	Status
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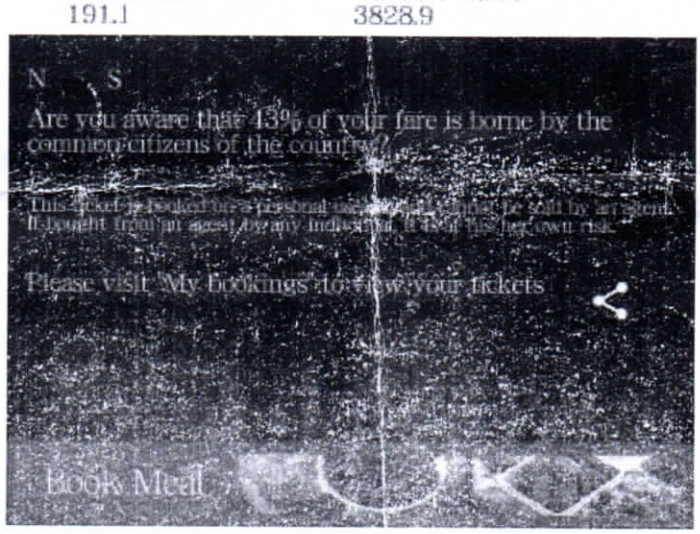
Total Tax	Taxable Value
191.1	3828.9



[redacted]

From Station		To Station
LOKMAN-YATILAK T (LTT)		VIJAYAWADA JN (BZA)

Departure	Arrival
30 Sep 2018 12:25	01 Oct 2018 08:45
Quota	**ClassType**
GENERAL	3A
Boarding At	**Date of Boarding**
LOKMANYATILAK T (LTT)	30 Sep 2018
Adult	**Child**
3	0
Transaction Id	**Fare**
100001441404773	3977.04

Travel Insurance Opted: Yes

[redacted]

NAGESWARARAO 45 M	CNF B3/27/UB
KRISHNAKISHORE 42 M	CNF B3/29/MB
A RAVI 40 M	CNF B3/30/UB

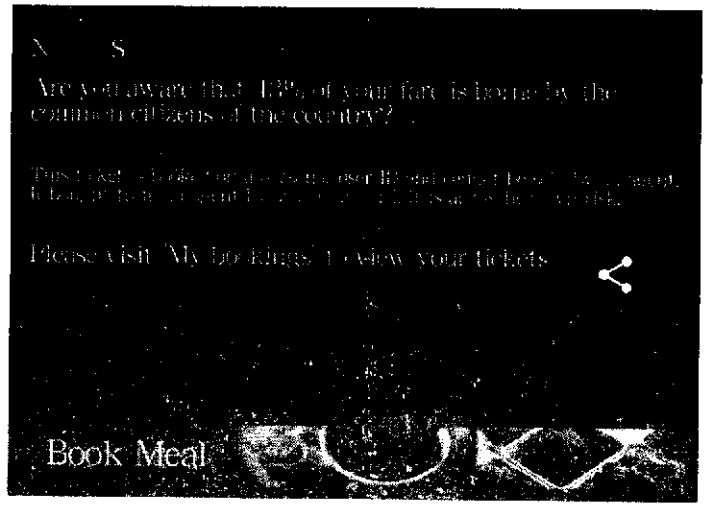
[redacted]

Supplier Information

SAC Number.	GSTIN/State
996421	07AAAGM0289C1ZL Maharashtra

IGST
189.0 @ 5.0%

Total Tax	Taxable Value
189.0	3786



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Friday
28 Sep 2018
CANCELLED

Transaction ID: **100001432108871**
Train No./Name: **18519 / VSKP LTT EXPRESS**
VIJAYAWADA JN (**BZA**) →LOKMANYATILAK T (**LTT**)
Cancellation/Refund ID: **100000268848959**
Booking Amount: **4022.04**
Refund Date: **25 Sep 2018**
Boarding Station: **VIJAYAWADA JN (BZA)**
Ticket Type: **E-Ticket**

PNR: **6119402158**
Transaction Date: **24 Sep 2018**
Refund Status: **REFUNDED**
Bank Name: **PAYTM WALLET**
Refund Amount: **1150.0**
Reservation upto: **LOKMANYATILAK T (LTT)**
Quota: **GENERAL**

Name	Age	Gender	Status	Cancellation Date
AUV NAGESWARARAO	44	Male	Booked	
S KRISHNAKISHORE	42	Male	Booked	
A RAVI	41	Male	Cancelled	24-Sep-2018 21:02:12 HRS

Sunday
30 Sep 2018
CANCELLED

Transaction ID: **100001441404773**
Train No./Name: **17222 / LTT COA EXPRESS**
LOKMANYATILAK T (**LTT**) →VIJAYAWADA JN (**BZA**)
Cancellation/Refund ID: **100000268848960**
Booking Amount: **3977.04**
Refund Date: **25 Sep 2018**
Boarding Station: **LOKMANYATILAK T (LTT)**
Ticket Type: **E-Ticket**

PNR: **8109965322**
Transaction Date: **24 Sep 2018**
Refund Status: **REFUNDED**
Bank Name: **PAYTM M**
Refund Amount: **1135.0**
Reservation upto: **VIJAYAWADA JN (BZA)**
Quota: **GENERAL**

Name	Age	Gender	Status	Cancellation Date
AUV NAGESWARARAO	45	Male	Booked	
S KRISHNAKISHORE	42	Male	Booked	
A RAVI	40	Male	Cancelled	24-Sep-2018 21:03:12 HRS

To

The Principal

PSCMR College of Engineering and Technology

Kothapet,

Vijayawada

Respected Sir,

This is A. Ravi, system Engineer in CSE Department. Due to some installation work in New Computer Labs for internal Exams and ION Online Test. In this context I'm unable to attend the KOHA Workshop on 29th September 2018 KOHA Workshop, IIT Bombay.

Please sanction to cancel tickets.

Thanking you sir

(A. RAVI)

knowl
3/10/18

PSCMRCET EMAIL

Krishna Kishore .S <krishna@pscmr.ac.in>

Fwd: Invitation to participate in 'Training for Koha and Library Automation' workshop

1 message

Dr.K.N. Rao <principal@pscmr.ac.in> Thu, Aug 30, 2018 at 10:41 AM

To: "Krishna Kishore .S" <krishna@pscmr.ac.in>, nagesh avala <mahitha2013@gmail.com>

---------- Forwarded message ----------
From: **eoutreach** <eoutreach@it.iitb.ac.in>
Date: Wed, Aug 29, 2018 at 6:14 PM
Subject: Invitation to participate in 'Training for Koha and Library Automation' workshop
To:

Dear Remote Centre Coordinator,

Greetings from IIT Bombay!

We are glad to announce that we are in the process of organising a one day workshop for **library staff**, on the **'open source library software Koha'** for the project **National Virtual Library of India** (NVLI) **sponsored by Ministry of Culture, Government of India,** which I am leading.

Following are the dates for two workshops:

Coordinator Workshop (1 day): Saturday, 29 September 2018 at IIT Bombay- One library staff and One System administrator to attend the workshop from RC

Main Workshop (1 day): Friday, 12 October 2018 at RC- Library staff from the nearby libraries to attend at the participating RC through A-VIEW.

To know further details of the programme, please see the attached invitation letter. For registration and other details, please visit our website https://www.it.iitb.ac.in/lakshya

This workshop is the first step in the computerisation of all the libraries in India, especially the public libraries. Therefore, we look forward to your enthusiastic participation in this novel initiative.

Thanks and regards,
Kannan Moudgalya
PI, NVLI

CC: Heads of Institutions

Enclosed:
- Invitation Letter to Remote Centres

--
Prof. K N Rao. B.E., M.Tech., Ph.D.,
MIEEE, MIE, C.Engg., MISTE, MIETE, MCSI, MACM
(Formerly from A.U.College of Engineering)
Principal
Potti Sreeramulu Chalavadi Mallikharjuna Rao college of Engineering and Technology
Kothapet
Vijayawada 520 001

+91 9441037218

Invitation Letter KOHA-1.pdf
871K

KK, Ravi & Librarian
May be permitted to attend.
KNRao
30/8/18

Sd/-
1/9/18

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COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Vijayawada,
Dt.11-10-2018

To
The Principal,
PSCMRCET,
Vijayawada-1.

Sir,

Sub:- Koha workshop attended – IIT Bombay, Mumbai - reg.

This is to bring to your kind notice that, on 29-09-2018, we have attended the workshop on "Library Automation" using the Open source Software KOHA at IIT Bombay, Mumbai which is conducted by National Virtual Library of India (NVLI) and funded by the Ministry of Culture, Government of India. This is completely open source and we can also adopt this for our library.

This is for your kind information.

Thanking you sir,

1. Mr.S. Krishna Kishore, Asst. Professor :
2. Mr. AUV Nageswara Rao, Librarian.

11/10/18

(25)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003157
Date :	12/10/2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : V. Praveen

Contents of the bill : Incentive for papers published on thesis in "Enhancement of DVR capability using wavelets"

Amount : 5,000/-

V. Praveen
Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada,
10/10/18.

From,
V.Praveen,
Asst. Professor,
EEE Department,
PSCMR College of Engineering and Technology,
Vijayawada-1.

To
The Principal,
PSCMR College of Engineering and Technology,
Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on 9-10-18 in **"Enhancement of DVR Capability Using Wavelets ": ELSEVIER SCOPUS journal**....Regd.

I, V.Praveen working as an Asst. Professor in EEE Department. I published a paper **"Enhancement of DVR Capability Using Wavelets "**on 9-10-18 in **"Journal Of Advanced Research In Dynamical & Control Systems": ELSEVIER SCOPUS journal**. So I request you to consider my published paper for an incentive as per the norms of our institute.

Thanking You,

Yours faithfully,

V.Praveen.

V. Praveen

Recommended.
— Incentive may be given as per college norms.
10/10/18
HEEE

Recommended an incentive of Rs-5000/-
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Journal of Advanced Research in Dynamical and Control Systems

Country	United States - SJR Ranking of United States
Subject Area and Category	Computer Science Computer Science (miscellaneous) Engineering Engineering (miscellaneous)
Publisher	Institute of Advanced Scientific Research
Publication type	Journals
ISSN	1943023X
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6

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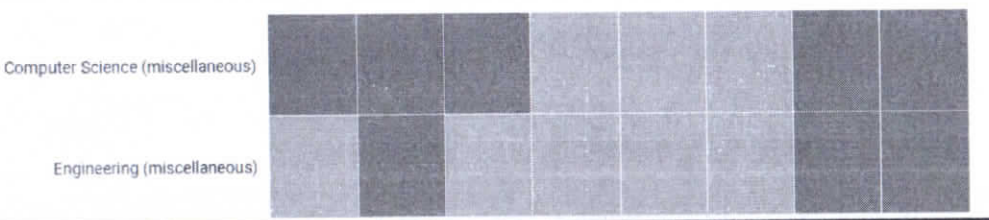

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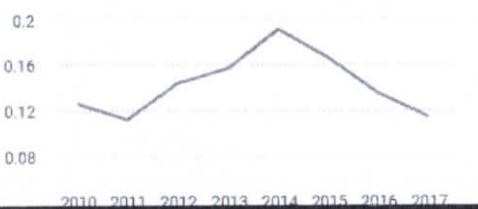

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The journal also features in-depth papers devoted to control systems research that spotlight the geometric control theory, which unifies Lie-algebraic and differential-geometric methods of investigation in control and optimization, and ultimately relates to the general theory of dynamical systems.

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Special Issue

12-Special Issue, 2018

Guest Editor(s):

Table of Contents

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Enhancement of DVR Capability Using Wavelets

V. Praveen and Dr.S.N.V. Ganesh

Abstract:

This paper proposes wavelet concepts to enhance DVR capability. Wavelet detects the magnitude and phase of DVR injected voltage precisely and is made at 90 degrees to the load current. The real power injected becomes zero and only reactive power is injected to the line. Although it is very difficult to maintain zero active power injection for long time; this technique mitigates the voltage sags and swells with minimum energy utilization. Minimum utilization also reduces the dc energy storage rating and size. The proposed topology is simulated in matlab simulink environment. The results are validated with various case studies.

Issue: 12-Special Issue

Year: 2018

Pages: 1224-1228

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Enhancement of DVR Capability Using Wavelets

V. Praveen, Assistant Professor, Department of EEE, PSCMRCET, Vijayawada, Andhra Pradesh.

Dr.S.N.V. Ganesh, Professor, Department of EEE, VBIT, Hyderabad, Talangana.

Abstract--- This paper proposes wavelet concepts to enhance DVR capability. Wavelet detects the magnitude and phase of DVR injected voltage precisely and is made at 90 degrees to the load current. The real power injected becomes zero and only reactive power is injected to the line. Although it is very difficult to maintain zero active power injection for long time; this technique mitigates the voltage sags and swells with minimum energy utilization. Minimum utilization also reduces the dc energy storage rating and size. The proposed topology is simulated in matlab simulink environment. The results are validated with various case studies.

Keywords--- Wavelet, DVR Capability, Energy Optimized, Series Compensator, Voltage Stability.

I. Introduction

In recent scenario power systems contains DVR inside it have been considered advanced series compensator for activating or responding with a variety of voltage variations. Their fast response is the main advantage, which can accomplish most of the requirements for sensitive loads, for which good power quality can be guaranteed. [1]-[6]. Additionally the supervision technique needs to be considered, as dissimilar compensation concepts will finish in different performances. The DVR will respond when power is supplied through load side. By specifying the selection of DVR the load ratings are arranged. The grimness of voltage sag are also important factor Converter inside a DVR which is a controllable component makes the dc link capacitor to play a vital role. According to power system applications, capacitor with insufficient energy says that the DVR cannot fulfill demand during compensation. Voltage disturbances are most common in distribution system, which adversely affects the sensitive loads. Dynamic Voltage Restorer is most commonly used device to protect the sensitive loads. DVR comprises of injecting transformer, filter, Voltage Source Converter and Dc energy source. However, the DVR can inject maximum 50% of load voltage. DVR utilizes some energy for voltage injection; energy utilization depends on the type of compensation technique employed. The load voltage is compared with reference value and error so obtained is fed to PI controller to calculate the phase angle jump. The reference sinusoidal signal is obtained using phase angle jump is superimposed on carrier triangular signal to obtain PWM pulses for the Voltage Source Converter. However it is difficult to tune PI controller as the gains values needs to be changed frequently. Since, the integral component resolves the error signal into various low and high frequency components, wavelets are the better solution as alternative to PI controller. In past, various methods have been attempted to enhance the PI controller such as non-linear PI, neural PI, fuzzy PI etc. This paper proposes a PI controller based on multi-resolution decomposition of the error by using wavelets.

The error is decomposed as $e(n) = \sum e_i * k_i$, where K_i is the controller parameters to be determined.

Wavelet decomposition extracts high frequency information from the error signal along with process dynamics, noise etc... Then each error components is scaled by gains of and added to generate the control signal.

II. Zero Active Power Tracking Technique

In this zero active power tracking technique, the magnitude and phase of the DVR voltage plays a vital role in reaching better compensation for the voltage sag. The injected voltage V_{DVR} and load current are maintained at 90°.

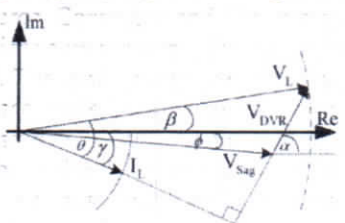

Fig. 1: Zero Active Power Tracking Technique

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The fig 1 shows the DVR voltage phasor with zero active power injection. The compensating voltage is added to the sag voltage to obtain injected voltage and is given by eqn (3). The corresponding active and reactive power injected by the DVR is given by eqns (1), (2).

$$P_{DVR} = V_{DVR}I_L \cos(\alpha - y) = 0 \quad (1)$$

$$Q_{DVR} = V_{DVR}I_L \sin(\alpha - y) \quad (2)$$

$$|V_{DVR}| == \sqrt{V_L^2 - 2V_L V_{sag} \cos(-\theta + \gamma + \emptyset) + V_{sag}^2} \quad (3)$$

III. Wavelet Control System

The main objective of the control system is to generate the voltage suitable for compensation with less active power consumption from the DVR. The wavelet PI controller is employed to provide accurate phase angle for the required voltage.

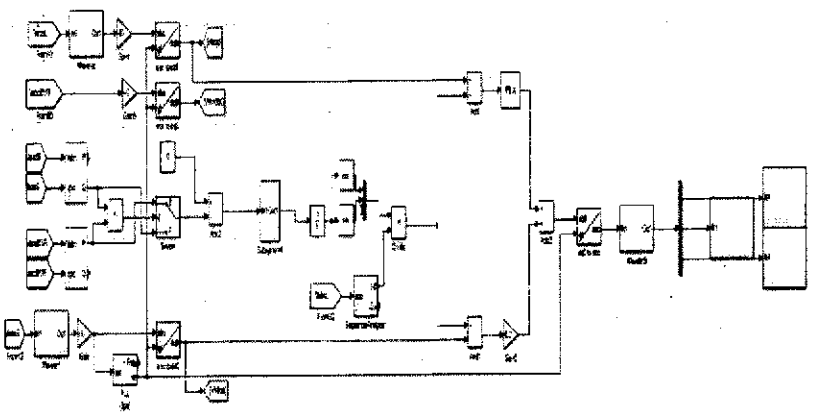

Fig. 2: Proposed Control System with Wavelets

As shown in fig 1 power injected depends on the angle þ; power increases as the angle þ increases with respect to zero degree reference. This increment of angle þ is obtained by wavelet decomposition of error so obtained by the power error. Fig 2 represents the wavelet PI controller to calculate the incremental angle þ.

In frequency domain, the proportional gain K_p and integral gain K_i captures low frequency information and derivative gain captures high frequency information of the error signal. If the error signal is represented as $f(t)$, the wavelet PI controller decomposes the error signal into low and high scaled components. Each component is multiplied by a gain (k_H.... K_{nn-1}) and control signal þ is the sum of product of individual components as given in eqn (4)

$$\text{þ} = k_H e_H + K_{n1} e_{n1} + \cdots + K_{nn-1} e_{Hnn-1} + K_L e_L \quad (4)$$

The resolution in frequency and time are two properties of the wavelet decomposition. If resolution if one domain increases, the other one decreases. Hence there shall be tradeoff between both the resolutions. In this paper, db4 wavelet is used for decomposing. Disturbance rejection improves with high scale signal (K_H). The lowest scale signal filters the noise and by making K_L to zero, smooth signal active component can be obtained. This active component is then compared with dc voltage to obtain the required active component to be injected.

The controlled DVR voltage signals are then passed to the converter switching control, which generates the required voltage that the compensation requires. Therefore, gating signals G1-G12 in Fig.2 are passed to switching devices in the converter (typically the IGBTs) for the sine wave PWM strategy.

IV. Simulation

The system for verification of the proposed compensation technique was designed in MATLAB for comparison with existing technique, As shown in the schematically simplified diagram in Fig 3 the components representing the system are full bridge power converters with LC filters and DC-link capacitor (C) included, three insertion transformers used as coupling devices series connected between a three-phase power supply and a lagging power factor load, and the control that monitors the system voltage (V_{PCC}), load voltage (V_L) and current (I_L), as mentioned previously.

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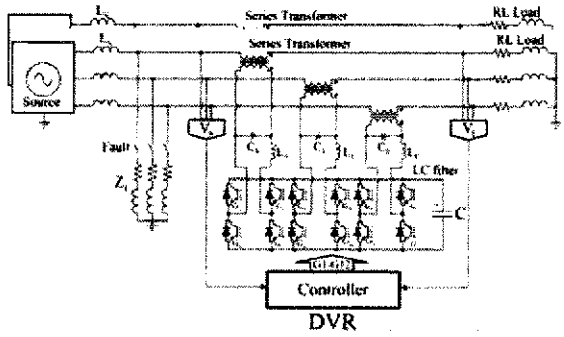

Fig. 3: Simulation Model of Test System

Table 1: Test System Parameters

S.No.	Parameter	Rating
1	Source Voltage (V_s)	380V
2	Load	2.33kVA, 0.45 lag
3	DC link capacitor	3.3mF
4	Filter (L, C)	1mH, 20μF

The test system comprises of distribution generator with 380V feeding to the series RL load through a transmission line with line inductance 1mH. DVR is connected through a injection transformer to the load. The load ratings are 2.33kVA with 45° lagging. The simulations were then conducted comparatively, as described in case-studies 1 and 2.

Case 1: With PI Controller

The traditional zero active power tracking technique with PI controller is simulated by creating voltage sag between 0.4 to 0,9 secs, highlighted by the remaining energy in the DC-link capacitor and duration of the proper supporting voltage that was being generated by the DVR during the compensation. . The fig 4 represents the reactive component of voltage reduced, DVR injected voltage and line voltage. With sag of 114V, the DVR is able to bring back the load voltage to normal as pre sag condition.

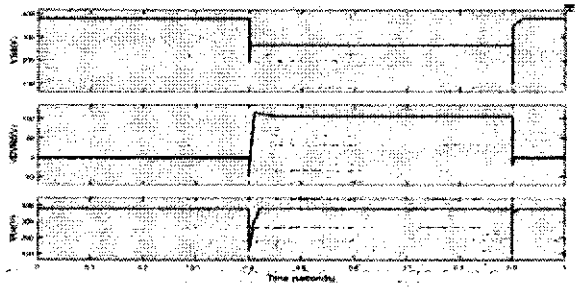

Fig. 4: Magnitudes of V_{sd}, V_{DVR} and Load Voltage

The corresponding voltages direct axis, injected voltage and load voltages are shown in fig 5. It is clearly evident that the drop in V_s between t=0.4sec and 0.9s, which was seen as V_{Sd}, is illustrated in fig. 5. Then, at t=0.4sec the load voltage was at 114V which was lower than the rated V_L=380V

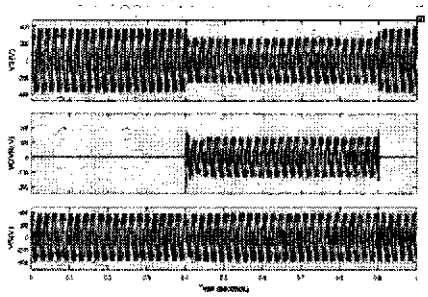

Fig. 5: Voltages of Direct Axis, DVR and Load

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In the in-phase compensation technique, the DVR is sable to compensate the voltage sag but larger rating of dc link capacitor is required. Hence, wavelet PI controller is employed in the simulation to validate the proposed control strategy.

Case 2: Wavelet PI Controller

In order to extend the compensation as described in the previous sections, the proposed technique of zero-real power tracking was implemented with wavelet along with PI controller the same system mentioned in subsection. With wavelet PI controller and zero active power injection, the magnitudes of direct axis component of power, DVR injected power and load powers are shown in the fig 6. As seen from the fig 6, the active power injected by the DVR is maintained at zero value.

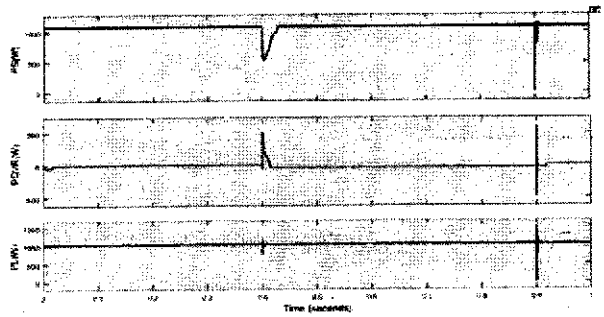

Fig. 6: Powers of Source, DVR and Load

The corresponding direct axis, DVR and load voltages are shown in the fig 7. The quadrature axis voltage components are depicted in figs 8 and 9. With voltage sag of 110V, DVR is able to compensate the sag effectively with zero active power tracking by wavelet PI controller.

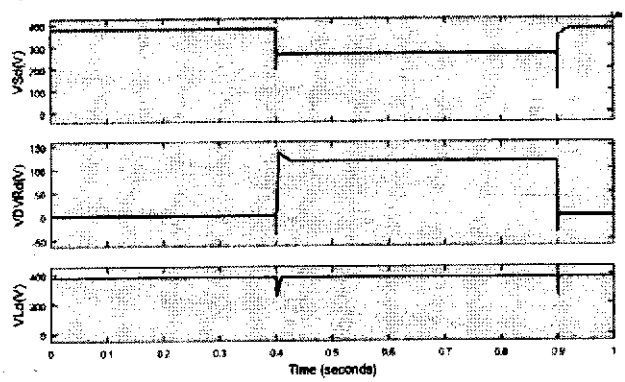

Fig. 7: D-axis Voltages at the System (V_{Sd}), (V_{DVRd}), and Load (V_{Ld})

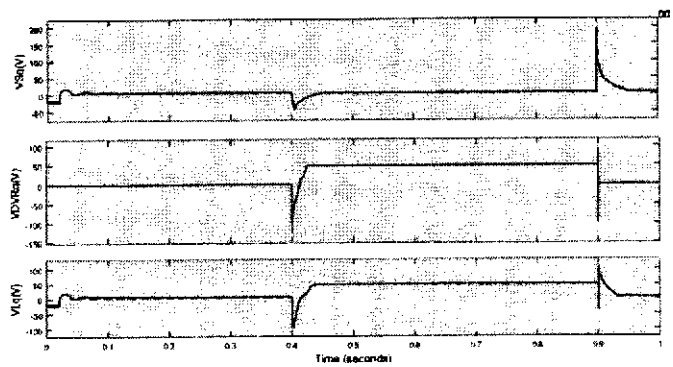

Fig. 8: Q-axis Voltages at the System (V_{Sq}), (V_{DVRq}), and Load (V_{Lq})

The voltage discharged with the implementation of wavelet is less when compared with the voltage discharged only with PI controller. Moreover, the utilization of zero active power tracking technique will able to clear the fault not only the certain limits but also in extended level.

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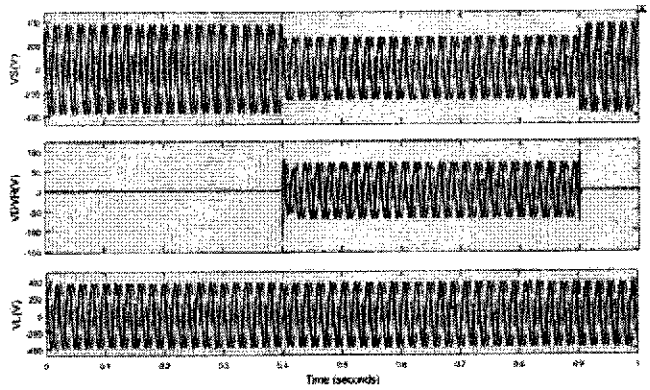

Fig. 9: Three Phase Voltages at the System (V_S), (V_{DVR}), and (V_L)

Table 2: Comparison of PI and Wavelet Controllers

S No	Parameter	With PI Controller				With Wavelet Controller			
		Source voltage		DVR voltage	Load voltage	Source voltage		DVR voltage	Load voltage
		Supply voltage	Drop voltage			Supply voltage	Drop voltage		
1	D-Axis	380v	120v	110v	380v	380v	120v	50v	380v
2	Q-Axis	0v	0v	98v	98v	0v	0v	50v	50v
3	Three phase	380v	130v	130v	385v	380v	100v	70v	380v

V. Conclusion

Zero real power tracking technique is implemented with PI and wavelet PI controller in DVR to test the ability of DVR in voltage sag mitigation. The simulation results clearly illustrates that the proposed zero-real power tracking technique applied to DVR-based compensation can result in superior performance compared to the traditional in-phase technique.

The traditional in-phase technique, more of the energy stored in the DC-link capacitor was utilized quickly, reaching its limitation within a shorter period. The compensation was eventually forced to stop before the entire voltage sag period was finished.

When the compensation was conducted using the proposed technique, less energy was used for the converter basic switching process.

Finally, with the utilization of wavelet and zero active power tracking technique we can able to utilize less energy that is taken out from the dc-link capacitor, resulting in smaller size dc capacitor.

References

[1] Bollen, M. Understanding Power Quality Problems, Voltage Sags and Interruptions. *New York, NY, USA: IEEE Press*, 1999.

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(26)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

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BANK BILL DESCRIPTION

Cheq. No.	003138
Date :	5/10/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : Surendra Babu

Contents of the bill : Mechanical Department Engineers day Celebrations

Amount : 6,000/-

K. S

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Secretary & Correspondent

No. 82

CASH BILL

Date 14/9/2018

RAMAKRISHNA MISSION

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Name PRINCIPAL, P.S.C.M.R.C.E.T, ~~Bo~~ VJA-1

Code	Item	Qty	Rate	Amount Rs.	Ps.
SPB	Youth of Sel Ariz	24	50	1200	-
181	Youth Power	3	250	750	-
Bani	Bani	3	100	300	-
Delu	Delu	3	100	300	-
Foun	Foun	3	100	300	-
	out of Box	3	100	300	-
Sgs	Success of Stud	3	100	300	-
RMOTR	F. Malen	1	100	100	-
Lcode	Ledesig	1	100	100	-
Posun	Poshy	1	100	100	-
	Weeing forwd	3	100	300	-
	A Goal for life	3	100	300	-
	Bani mi	1	100	100	-

Rupees ....

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4450

Signature

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Code	Item	Qty	Rate	Amount Rs.	Ps.
SCH	Charante Lean	18	10	180	–
S40	You Can	18	10	180	–
S30	Born to W	18	10	180	–
S88	Effort	18	10	180	–
2180	Vivek for Youth	19	10	190	–
4601	Secret of Cond	19	10	190	–
4502	Modern	19	10	190	–
Buy	Less feel than	19	25	485	–00
2569	Yuvak ken S V.	10	50	500	–

Rupees ....

....

2265

Signature

RAMAKRISHNA MISSION BOOK-STALL
GANDHI NAGAR
VIJAYAWADA
GSTIN/UIN: 37AAAAR1077P2Z1
State Name : Andhra Pradesh, Code : 37

Bill of Material

Bill No : 14-09-2018-8 Time : 17:40 hrs
Date 14-9-2018

Sl	Description	HSN	Qty	Rate	Amount
1	3608 YOUTH OF INDIA ARISE - SP		24	50.00	1200.00
2	1811 YOUTH POWER		3	250.00	750.00
3	BEIN BE INNOVAT-IVE & BECOME SUCCE-SSFUL		3	100.00	300.00
4	DETERM-INATION FORM		3	100.00	300.00
5	FOCUS ON YOUR WORK		3	100.00	300.00
6	OUT OF THE BOX		3	100.00	300.00
7	SUCCE-SS OF STUDEN-TS(E)		3	100.00	300.00
8	EMOTIO-NAL INTELI (E)		1	100.00	100.00
9	LEADER-SHIP FORMU-LAS (E)		1	100.00	100.00
10	POSSE-SSING KNOWL-EDGE		1	100.00	100.00
11	WINNING FORMU-LAS (E)		3	100.00	300.00
12	A GOAL FOR E		3	100.00	300.00

	IN BE		1	100.00	100.00
14	SCI CHARAC-TER WINS		18	10.00	180.00
15	SYO YOU CAN BECOME A BETTER PERSON		18	10.00	180.00
16	SBO BORN TO WIN		18	10.00	180.00
17	SEF EFFECTI-VE STUDY TECHNI-QUES		18	10.00	180.00
18	2180 VIVEKA-NANDA FOR YOUTH		19	10.00	190.00
19	4601 SECRET OF CONCE-NTRATI-ON - 0506		19	10.00	190.00
20	4502 MODERN PROBL-EMS & ANCIENT SOLUTI-ONS		19	10.00	190.00
21	BUS USEFUL THOUGH-TS FOR YOUTHS		19	25.00	475.00
	2569 YL AT/ U S.V.		10	50.00	500.00
		Total	210		₹ 6715.00

Total

Cr/Dr Card	6715.00
Total Paid	6715.00

THANK YOU
VISIT AGAIN

PADMAJA GRAPHICS

D.No. 28-10-20, Maszid Street, Arundalpet, VIJAYAWADA -2.
Ph : 6643404

No. : 334 **CASH / CREDIT BILL** Date : 14/9/18

To Principal P.S.C.M.R CET. Kothuru.,

S.No.	PARTICULAR	Qty.	Amount Rs.	Ps.
	As Colour prints		850.	00
			850.	00

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color graphics
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15/09/2018.

To
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Principal
PSCMR CET, Vijayawada-1

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13"x 19" } 250/-

250/-

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Office : 9440157126, Works : 9290408129

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : SKPVV HINDU HIGH SCHOOLS COMMITTEE)

Kothapet, VIJAYAWADA - 1

Voucher No. : A/c.....

Date : 15-09-2018 .....

Paid to Mr. / ~~Mrs.~~ M. Nagendra Babu

Rupees in words Two Hundred & Fifty Rupees only

towards Photo frame for Engineers day event

.....

Rs. 250/-

Signature M. Nagendra Babu

Entered by *Secretary & Correspondent* *Treasurer*

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P.)

Department of Mechanical Engineering

Expenses

Requisition No: ME13/2018-19

28/9/18

No	Requisition No	Department / Laboratory	Recurring / Non Recurring	Details of the Item	Estimate Amount Rs.
28/9/18	Mech / Dept / 2018-19 / 4	Department	Non Recurring	Engineer's day Celebrations Prizes Certificates Mokshagundam Visweswaraya Photo with Frame **Total** Sanctioned Met the remaining 2,065/- from the Students participation fee.	 6,715/- 850/- 500/- **8,065/-** **6,000/-**
28/9/18	Mech / Dept / 2018-19 / 5	Department	Non Recurring	Old Bike engine - 1 (2 stroke Petrol Engine) Old Car engine - 1 (In line petrol engine) Auto charges for transportation of engines from Guntur TA & DA charges for 3 persons Material for Iron stand Tools set (Flat spanners set and Ring Spanners set) **Total** 1/10 cleared	2,300/- 3,000/- 600/- 390/- 680/- 2,490/- **9,460/-**
28/9/18	Mech / Dept / 2018-19 / 6	Department	Non Recurring	Expenses to conduct the workshop on Automobile parts on 19th and 20th September 2018.	10,000/-

Credit 6000/- to Surendra Babu A/C

Adv - 10000

Secretary & Correspondent

Principal

28/9/18

Head of the Department

(27)

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)
KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

C **BANK BILL DESCRIPTION**

Cheq. No.	002969
Date	28/9/18

Bill No. : PNB3771 *Date* :

Head of Account : T. Sreesha.

Contents of the Bill : Advance for Seminar Purpose PCB design.

Amount : 5000/-

T. Srinivas
Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada,

24/09/2018.

From,
T. Sireesha,
Asst. Professor,
ECE Department,
PSCMR College of Engineering and Technology,
Vijayawada-1.

To
The Secretary and Correspondent,
PSCMR College of Engineering and Technology,
Vijayawada-1.

Respected Sir,

** Through a proper channel **

Sub: Requisition for sanctioning of amount in advance for certificates and prize distribution regarding **"5 day Workshop on PCB Design"** --- Regd.

I, T.Sireesha working as an Asst. Professor in ECE Department since 2015. Our department has conducted **"A 5 day Workshop on PCB Design"** from 11-09-2018 to 15-09-2018 for II ECE and II EEE students. It is effectively exhibiting student's talent in formulating and fabricating the circuits and coming to last day concluded with valedictory function. Some expenditure was spent during this workshop. As the amount Rs. 8125/- was already paid for the components (ASHISH ELECTRONIC CORPORATION), I would like to bring to your kind notice that we require an amount of Rs. 5,000/- in advance regarding certificates for students and faculty and also prize distribution to the students of this workshop. For this Rs. 5,000/- amount, I will submit the bills for certificates and prizes for this workshop within one week. So I request you to grant me the amount of Rs. 5,000/- in advance as early as possible.

Thanking You,

Yours Sincerely,

T.Sireesha.

Forwarded
24/9/18

24/9/18

25/9/18

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Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002932
Date :	6/9/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : N. Mounika

Contents of the bill : Incentive for paper published on september 2018 springer journal

Amount : 5,000/-

N. Mounika.
Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada,
4/09/18.

From,

N. Mounika,

Asst. Professor,

ECE Department,

PSCMR College of Engineering and Technology,

Vijayawada-1.

To

The Principal,

PSCMR College of Engineering and Technology,

Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on September 2018 in **"Innovations in Electronics and Communication Engineering: Springer journal**....Regd.

I, N. Mounika working as an Asst. Professor in ECE Department. I published a paper titled **"ICI Cancellation in OFDM Systems Under Stanford University Interim Channel Model"** on September 2018 in **"Innovations in Electronics and Communication Engineering:** Proceedings of the 6th ICIECE 2017" **Springer Journal**. So I request you to consider my published paper for an incentive as per the norms of our institute.

Thanking You,

Yours faithfully,

N. Mounika.

N. Mounika.

Forwarded
4/9/18.

Rec. 15,000/- incentive.
4/9/18

4/9/18

Received - 4/9/18
1:40 Pm

ICI Cancellation in OFDM Systems Under Stanford University Interim Channel Model

N. Mounika, M. Durga Rani, J. Lakshmi Narayana and M. Naga Lakshmi Kalyani

Abstract In orthogonal frequency division multiplexing (OFDM) systems, it is observed that intercarrier interference (ICI) is the most pervasive effect. Due to the Doppler shift or phase noise, the intercarrier interference effect will occur. In this paper, to alleviate the ICI, a parallel cancellation algorithm and space frequency techniques are combined to form a new technique called space frequency parallel cancellation scheme. The performance of this space frequency parallel cancellation approach is evaluated under SUI (Stanford University Interim) channeling environment.

Keywords SUI · SF · SFPC · ICI · BER

1 Introduction

With OFDM, it is possible to have an overlapping of subchannels in the frequency domain, unlike FDM in which several low-rate user signals are modulated with a separate carrier and transmitted in parallel. Compared to conventional communication techniques like TDMA (time division multiple access), FDMA (frequency division multiple access), and CDMA (code division multiple access), orthogonal frequency division multiplexing communication system has a number of advantages. OFDM is a key scheme for bandwidth-efficient modulation technology and high data rate wireless applications (Figs. 1 and 2).

N. Mounika (✉) · M. Durga Rani · J. Lakshmi Narayana · M. N. L. Kalyani
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H. S. Saini et al. (eds.), *Innovations in Electronics and Communication Engineering*,
Lecture Notes in Networks and Systems 33,
https://doi.org/10.1007/978-981-10-8204-7_25

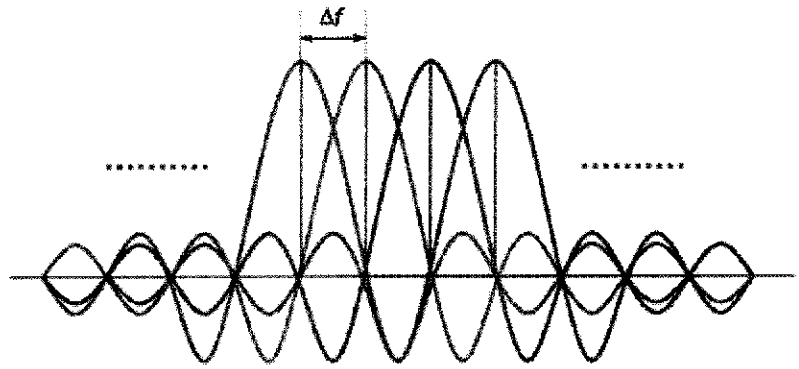


Fig. 1 Orthogonality in orthogonal frequency division multiplexing (OFDM)

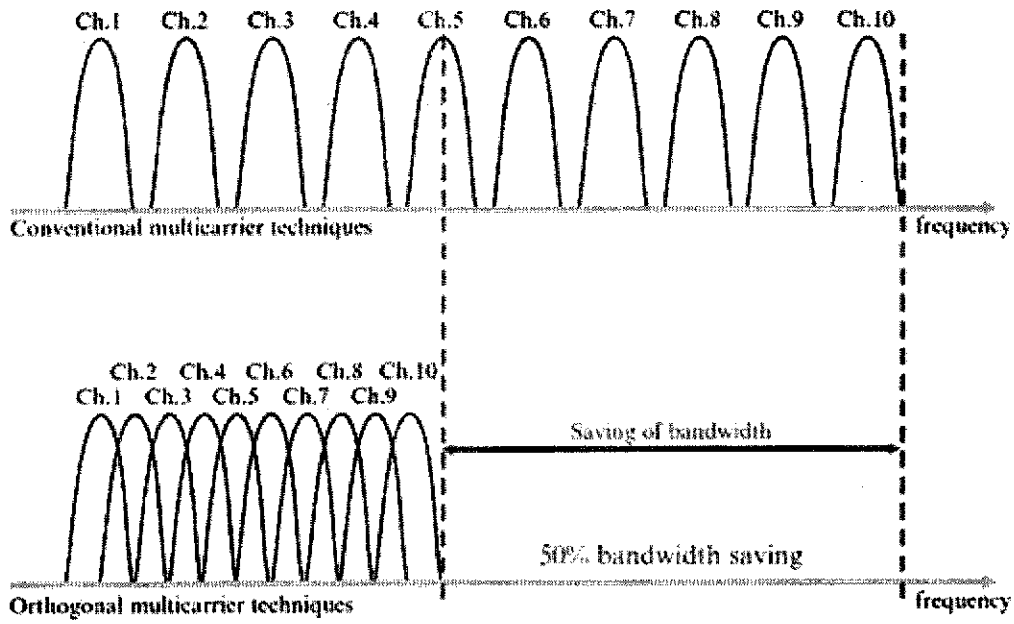


Fig. 2 Conventional and orthogonal multi-carrier techniques

OFDM system has better spectral efficiency as well as high data rate. Because of some special characteristics like flexible and reliable high-speed data rates, and robustness against narrowband interference and frequency selective fading, OFDM is also termed as a future generation communication system.

2 Literature Survey

The subcarriers (multiple frequency channels) are orthogonal to each other in OFDM. Due to the difference between the transmitter and receiver local oscillator frequencies or due to Doppler shift of the channel, the frequency offset sensitivity is existing between the transmitted and received signals, which lead to intercarrier interference [1]. Various techniques are proposed to combat the ICI in OFDM systems [2].

3 OFDM System Model

Openness to the small differences in frequency at the transmitter and the receiver called frequency offset which is the main disadvantage of the OFDM [3] system. The baseband transmitted signal after applying IFFT is

$$y_k = \sum_{n=0}^{N-1} i_n e^{j\frac{2\pi}{N}kn} \qquad \text{k} = 0, 1 \ldots \text{N} - 1 \tag{1}$$

where 'i_n' is the data symbol. Add a cyclic prefix to the signal and then apply parallel to serial conversion then the signal is transmitted [4] (Fig. 3).

$$\hat{i}_n = \frac{1}{N}\sum_{K=0}^{N-1} t_k \, e^{-j\frac{2\pi nk}{N}} = \frac{1}{N}\sum_{n=0}^{N-1}\sum_{k=0}^{N-1} H_n \, i_n \, e^{j\frac{2\pi(n+\epsilon)k}{N}} e^{-j\frac{2\pi mk}{N}} \tag{2}$$

4 Parallel Cancellation Approach

The PC-OFDM approach has two branch operations as shown in Fig. 4.

The upper branch is a regular OFDM system in which IFFT is calculated at the transmitter and FFT is calculated at the receiver as shown in Fig. 3. In the lower branch, FFT operation is performed at the transmitter which is given below.

$$y'_k = \sum_{n=0}^{N-1} i_n e^{-j\frac{2\pi}{N}kn} \qquad \text{k} = 0, 1 \ldots \text{N} - 1 \tag{5}$$

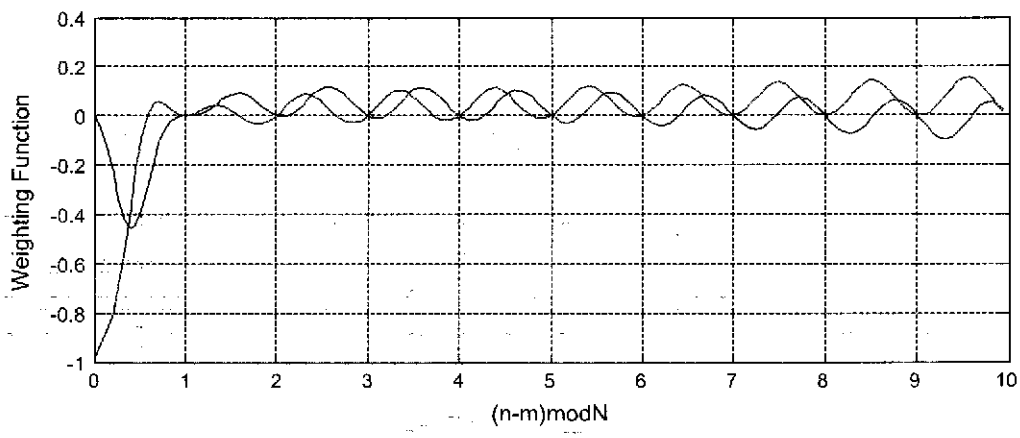


Fig. 3 Weighting function of in regular OFDM systems

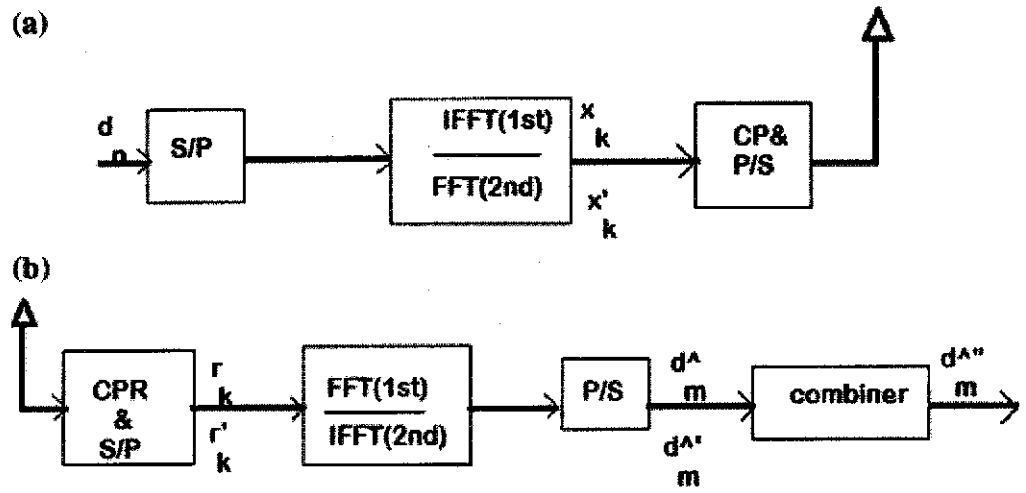


Fig. 4 a PC-OFDM Transmitter b PC-OFDM Receiver

IFFT operation is performed in the lower branch as shown below.

$$\hat{i}'_m = \frac{1}{N}\sum_{k=0}^{N-1} i'_k e^{j\frac{2\pi mk}{N}} = \frac{1}{N}\sum_{n=0}^{N-1}\sum_{k=0}^{N-1} i_n H'_n e^{j\frac{2\pi(-n+c)k}{N}} e^{j\frac{2\pi mk}{N}} \tag{6}$$

$$= H'_m i_m q_0 + \sum_{n=0, n\neq m}^{N-1} H'_n i_n q_{n-m} \tag{7}$$

5 SF-OFDM Systems

Figure 5 shows the block diagram for the space frequency orthogonal frequency division multiplexing system. At the transmitter, the input vector is given by $i = [i_0 i_1 \ldots i_{N-1}]^T$. In this system, two N length blocks are formed through space frequency coding for two branches (upper and lower) as two parallel input data vectors as given below.

$$i_2 = \left[i_1 - i_0^* \ldots i_{N-1} - i_{N-2}^*\right]^T \quad i_1 = \left[i_0 - i_1^* \ldots i_{N-2} - i_{N-1}^*\right]^T,$$

The two input data vectors i_1 and i_2 are sent to two parallel IFFT blocks and transmitted with cyclic prefix through two transmit antennas $T1$ and $T2$. At the receiving side, it performs the operations like de-multiplexing to separate the two branch signals.

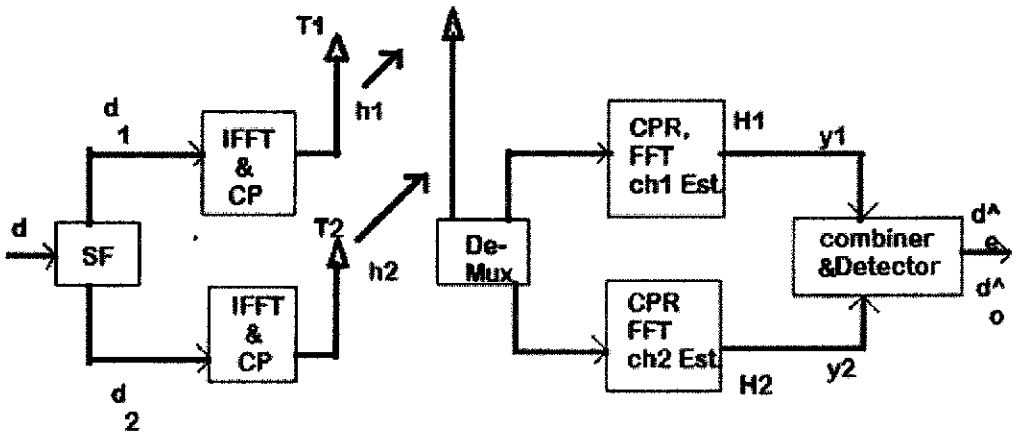


Fig. 5 Block diagram of SF-OFDM transceiver

6 Proposed Approach

The parallel cancellation and space frequency-OFDM techniques are combined naturally as both the techniques PC-OFDM and SF-OFDM are per OFDM symbol basis. The Fig. 6 shows that two vectors of length N are formed as input data vectors i_1 and i_2 at the transmitter.

After removing the cyclic prefix using CPR, FFT is calculated in the upper branch and IFFT is calculated in the lower branch.

7 SUI (Stanford University Interim) Channel Model

The SUI (Stanford University Interim) is one of the channel model used to estimate the bit error rate performance of the system. This SUI channel response depends upon the components like shadowing, path loss, Doppler spread, multipath fading,

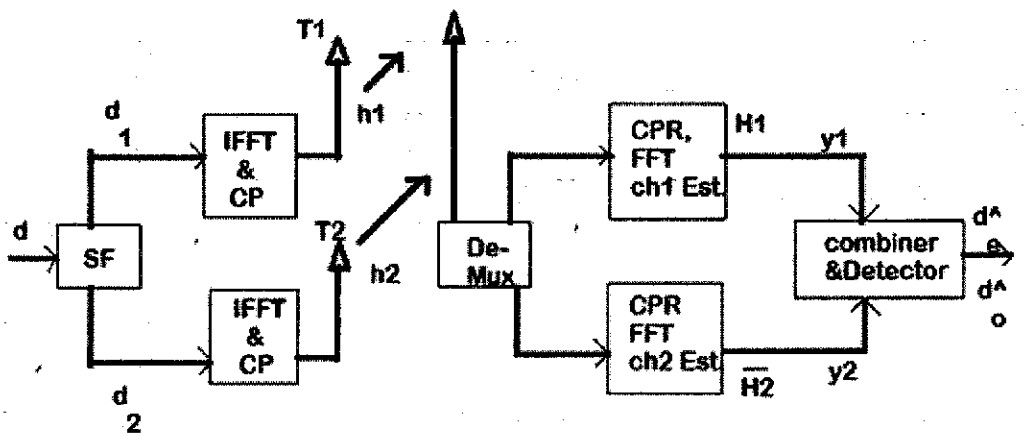


Fig. 6 Proposed approach's block diagram (SFPC)

Table 1 Classification of SUI Channels

			Terrain	Tree density
Terrain type	A	SUI-5, SUI-6	Hilly terrain	Moderate to heavy tree density
	B	SUI-3, SUI-4	Hilly terrain with	Light tree density
			Flat terrain	Moderate to heavy tree density
	C	SUI-1, SUI-2	Mostly flat terrain	Light tree densities

co-channel interference and adjacent channel interference. These parameters are changed according to the atmospheric conditions like tree density, terrain and beam width and antenna height. These parameters are random in nature Based on these above Stanford University channels are proposed (Table 1).

7.1 SUI Channel Model Parameters

BTS antenna height	30 m
Cell Size	7 km
BTS antenna beam width	120
Receive antenna height	6 m
Polarization	Vertical only
Receive antenna beam width	Omnidirectional

8 Simulation Results

The bit error rate performance of the Parallel Cancellation-OFDM, Space Frequency-OFDM and Space Frequency Parallel Cancellation-OFDM schemes has been assessed by simulations. The BER performance of the existing and proposed approaches are shown below.

The Space Frequency Parallel Cancellation scheme is compared with the existing Space Frequency scheme in Fig. 7 with different $N = 256$, $N = 512$ and $N = 1024$ subcarriers (Figs. 8 and 9).

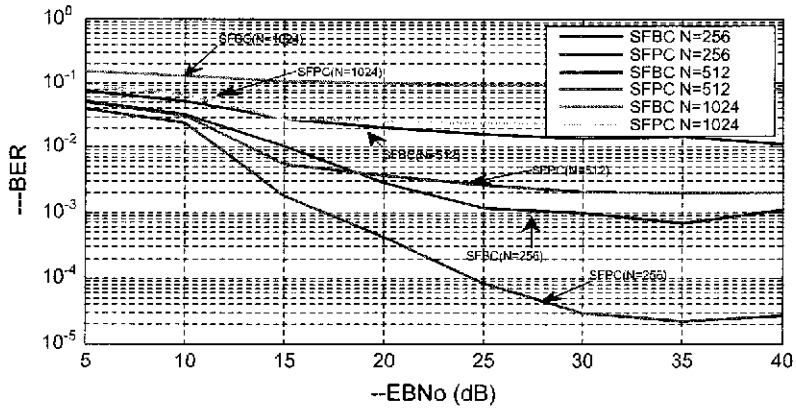


Fig. 7 BER performance for the proposed and existing SFBC schemes with $N = 256, 512, 1024$

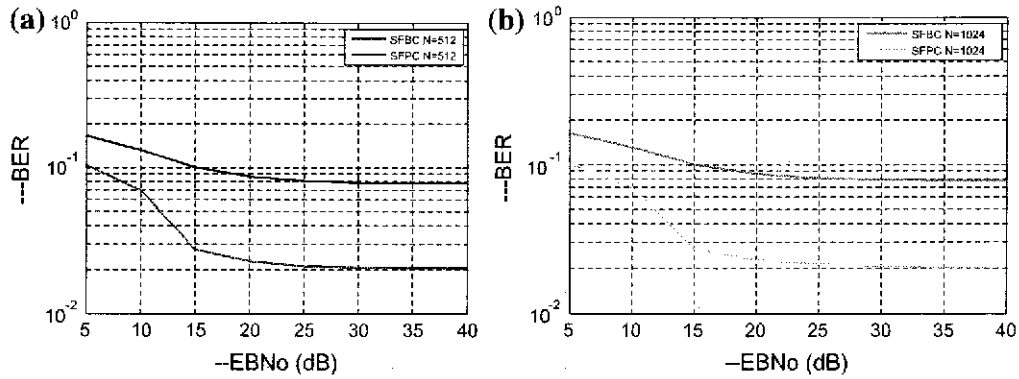
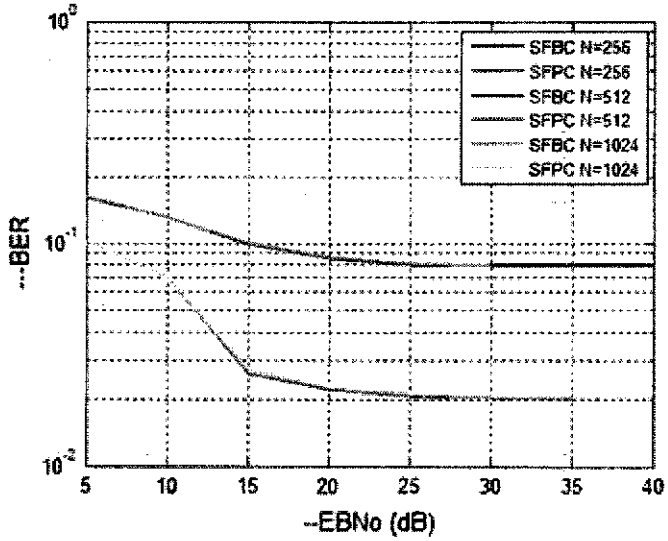


Fig. 8 **a** SFBC & SFPC with $N = 256$ **b** SFBC & SFPC with $N = 512$ **c** SFBC & SFPC with $N = 1024$

Fig. 9 BER performance for the proposed and SFBC under SUI channel with different subcarriers



9 Conclusion

The proposed space frequency parallel cancellation-OFDM approach is tested with existing parallel cancellation scheme and space frequency approach under different Stanford University Interim (SUI) channel models. The simulation results show that for the OFDM block size of 256 numbers of subcarriers, the SFPC-OFDM approach is showing better results even at 1024 subcarriers also, when compared against the existing PC-OFDM and SF-OFDM approaches. It is shown that the SFPC-OFDM approach is performing well under different Stanford University Interim channeling environments when compared against the existing parallel cancellation approaches.

References

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POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	002931
Date :	6/9/18

Bill No. : KVB 3771 *Date* : .....

Head of Account : T. Sireesha

Contents of the bill : Incentive for paper Published on August 2018 in WSEAS Transactions on systems Journal

Amount : 3,000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

Vijayawada,
16/08/18.

From,

T. Sireesha,

Asst. Professor,

ECE Department,

PSCMR College of Engineering and Technology,

Vijayawada-1.

To

The Principal,

PSCMR College of Engineering and Technology,

Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on August 2018 in WSEAS Transactions on Systems and Control Scopus Journal....Regd.

I, T. Sireesha have been working as an Asst. Professor in ECE Department since 2015. I published a paper titled **"Comparative Analysis of Gyro-Parameters in Digital Closed-Loop Interferometric Fibre-Optic-Gyro based on Variations in V2π Ramp and Vπ/2 Bias Voltages"** on August 2018 in WSEAS (World Scientific Engineering Academy and Society) Transactions on Systems and Control Scopus Journal. So I request you to consider my published paper for an incentive as per the norms of our institute.

Thanking You,

Yours faithfully,

T.Sireesha.

Forwarded 16/8/18.

16/8/18

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Comparative Analysis of Gyro-Parameters in Digital Closed-Loop Interferometric Fibre-Optic-Gyro based on Variations in V2π Ramp and Vπ/2 Bias Voltages

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Abstract: - Fibre-Optic-Gyro (FOG) is an inertial-sensing device, determines the rotation-rate mainly working on the principle of Sagnac-effect. The accomplishment of inertial-grade-performance focused on an Interferometric Fibre-optic-Gyro (IFOG) with the closed-loop operation, but there are several drawbacks exist in analog-IFOG and finally considered the Digital Closed-Loop Interferometric Fibre-Optic-Gyro (DCLIFOG) and it mainly engage with bias-signal frequency and ramp signal (V2π voltage of IOC). The feedback signal uses a digital phase-ramp voltage to neutralize the gyro output. If the slight difference occurred in ramp and bias voltages, then founds the change in performance of gyro. Meanwhile, the dead-band occurs in DCLIFOG at low-rotation-rates, which is a significant phenomenon causes the nonlinearity output and also influences its accuracy. However, dead-band-error elimination is an important problem in DCLIFOG design, and suppresses the effect of dead-zone by a suitable resetting V2π voltage by controlling DAC reference-voltage. Here, different test-methods were proposed and considered for three-cases: (i) V2π (vary) & Vπ/2 (constant), (ii) Vπ/2 (vary) & V2π (constant) (iii) both V2π and Vπ/2 are varying simultaneously. This paper addresses the comparative analysis made on gyro-performance by evaluating its parameters among three-cases: the experimental results showed that the performance of gyro concerning with bias-stability, scale-factor linearity and also tremendously eliminated its dead-band.

Key-Words: - Digital Closed-loop Interferometric Fibre-Optic-Gyro (DCLIFOG); Ramp signal Voltage (V2π); Bias signal Voltage (Vπ/2); Dead-band or Dead-zone and Low-rotation-rates.

1 Introduction

In recent years most of the commercially available Fibre-Optic-Gyros uses Interferometric configuration due to its involvement in reducing the errors to improve the gyro performance by using several techniques including optical reciprocity. With this help of advancement, Interferometric configuration is popular and technology wise it is nature [2]. Based on the principle of interference of light operation, Interferometric Fibre-optic-Gyros (IFOG's) are designed to measure the rotation rate induces optical path difference as measure of phase difference between two counter propagating beams [1, 5]. The main advantage exists in the IFOG technology for inertial systems are smaller size with increased integration of the components, having high reliability and lower cost. In IFOG, the sensitivity depends upon the fiber-coil length, builds a specific mechanism effective in wide range of applications because of having high accuracy and low random noise requirement. However, IFOG's are further arranged as either open loop or closed-loop [6].

A simple arrangement of IFOG is open-loop IFOG obtains the rotation rate by direct estimation but introduces a nonlinearity output for small deviation in phase and causes the instability, limited dynamic range, low accuracy and insensitive for lower rotation rates [4, 6]. But the Closed-Loop IFOG (CLIFOG) was greatly fulfilled for solving most of the above noticed issues. In the operation of CLIFOG the rotation rate was obtained by using a feedback loop which generates a value given to phase-modulator so that the differential phase shift cancels out the rotation induced Sagnac phase shift. Due to this reason, the closed-loop system establishes a very high performance by eliminating

the dependency of light intensity and these are very attractive due to increase in scale-factor (SF) stability and linearity.

The different closed-loop approaches primarily differ in the method used to produce the rotation induced non-reciprocal Sagnac phase deviation, which is equal to its significance and sign inversion [12]. The fulfillment of navigation-grade performance mainly focuses on a closed-loop design with IOC, integrated optic chip (sometimes also named as multi- functional integrated optic chip) [14]. So that its operation more feasible with an IOC due to availability of an integrated-optic phase modulators. Such high-speed components are sufficient for yielding the effective phase modulation for calibrating rotation rates in the prescribed dynamic range. However, the feedback loop cannot maintain stability at certain rotation rates due to voltage-dependent errors in the feedback signal, phase servo, or electrical cross-coupling etc.

Two approaches exist in the CLIFOG system is: analog and digital. In analog based CLIFOG system, the interference channel develops a nonlinear response due to sinusoidal biasing signal modulation. But this ACLIFOG system (established with an analog ramp signal with a sinusoidal biasing signal modulation), does not produce a sufficient result on account of unstable output against environment, to conquer this problem by designing a Digital Closed-Loop Interferometric Fiber-Optic-Gyro (DCLIFOG). The DCLIFOG system constructs with the digital feedback ramp signal and with a square-wave biasing signal modulation to eliminate the error close to zero point. This is the main advantage is to operate the DCLIFOG scheme around the zero-point in order to estimate the rotation rate is unsusceptible with the optical power, the electronic-gain, or any other circumstances against environment, especially against vibration. However by maintaining the linear characteristic, scale-factor (SF) stability and good accuracy, obtains a great improvement with this DCLIFOG system [3].

One of the exotic aspects identified within the CLIFOG system is known as the dead-zone. Dead-zone is the region where the Gyro cannot recognize to sense any rotation at low angular rate, thus ignoble sensation in the Gyro. Additionally, noted that dead-band can be affiliated with a number of reasons and extended with the influenced factors based on assembly quality and parameters (optical and electric parameters) of IFOG design is affected on the dead-zone. This dead-band-error leads to extreme impact on inertial-navigation-grade-performance and its precision. By this impact, these are divided into two fundamental sources or groups in accordance with their origin. The primary group is the electronics cross-talk (or cross-coupling) exists in-between the modulated feedback voltage and the photo detector, and in-between the modulated feedback voltage and output of ADC, and also in-between the DAC nonlinearity and the electro-optical phase modulator. Cross coupling is the main factor of a dead-zone and a certain issue to minimize its effect in electronic design. The cross-coupling effect causes due to interfere with each other on the PCB board or through the signal power, or ground. With this interference gyro bias was affected, results a dead-band [7].

The secondary group is the phase modulation tendency of the IOC. The IOC consists of phase modulator produces only constrained or inaccurate response at low frequencies like pole-zero filters. If the variation exists in frequency characteristics then the modulated phase signal is further altered in accordance with the phase ramp signal frequency and it is equivalent to the input rotation rate. Sometimes, due to the impact of an artificial interferometer founded by back- scattering and back-reflections, as well as radiation errors in the integrated optic chip (IOC). Due to this reason at lower rotation rate induces the bias instability, spikes produced in the output due to noise, and look-alike dead-zone.

While concentrating the reasons of dead-zones in an IFOG, the aim is to detect the most influenced key factor. According to investigations, the dead-zone is mainly concerned by the second group (in order of significance) of an artificial interferometer signal and other factors have not been identified to show any high impact. Many researchers are concerned to the dead-band compensation by applying an additional phase modulation without eliminating its causes and all these techniques is not to permit the absolute phase value to persist at one fixed value takes place at low rotation rates when the Sagnac phase shift adjusted by the feedback represents to an infinitesimal extra phase. The reason behind this is during the feedback-voltage dependent error exactly cancels the rotation-induced Sagnac phase shift then the lockup takes place and develops a constant feedback loop. To address this lockup issue and to suppress the dead-zone, a bias phase is to adopt larger than the feedback-voltage dependent error and due to this biasing in the phase modulator decreases its dynamic range, needs to perform separation of the additional biased rate [10]. Hence, the dead-zone was also compressed by randomizing the modulation depth, but the bias

instability and random noise rises by virtue of optical power sensitivity on the photo detector. Finally, proposed a new modulation scheme is to eliminate the dead-band along with its causes and to produce a sophisticated linear response of the gyro output to any applied rotation rate.

2 Methodology

The basic idea exists in closed-loop approaches by adopting a phase compensating feedback signal generates a proper value to remove the rotation induced Sagnac phase shift from the differential phase shift, thus directly proportional to the detected rotation rate. However, this was not extremely convenient result for maintaining reciprocity. It is not so simple to maintain reciprocity on an adequate range to establish the convenient gyro operation. This device uses the Sagnac effect, which is analogous and reduce the other no desired effects.

If the system is in continuous medium, constant time and away from magnetic fields, the clockwise (CW) and counter clockwise (CCW) optical path lengths are interchangeable then the arrival of two waves to the detector are entirely in phase, except for Sagnac shift [4, 5]. Furthermore, in CLIFOG design the rotation rate grasp by a fed back signal for preventing the turn persuaded Sagnac phase inaccuracy, but it obtains a deviation on account of repeated usage of Sagnac loop. Again, the system inserts the output as feedback to the input, then the phase shift among CW and CCW (clockwise and counter clockwise) paths in entire line, containing direct and feedback lines determines as Sagnac phase deviation.

In Optoelectronics, the CLIFOG suffers from a lockup near low rotation rates or around zero (i.e., due to insensitivity), which results a dead band, dead zone, or an uncertainty region. It is a field of rates where the sensation of the gyro weakens to zero then it is not any more to sense the rotation rate [8]. Moreover, it seems that the noise also increases in addition to this characteristic region. As a result, the feedback-voltage dependent error occurs with the lockup and the increased noise. This error is the source of the dead zone that exists due to electrical cross-coupling between the modulated feedback voltage and the input signal of the photo detector, the back- scattering, and radiation errors inside the IOC of the designed IFOG.

However, the dead band is mainly concentrated with the second group of source and this generates the bias and the feedback phase signal by the phase modulator in the IOC. The system leads to a persuaded modulated feedback voltage in the photo detector output (see dead zone sources in Fig. 1) and directly initiated in the input of ADC. On account of this induced signal the interferometer signal is also increases created an imperfect feedback and occurs the output of gyro signal to lockup at lower rotation rates [7]. This lockup is attributed to the influence of a very small amount of backscatter from the mirror surfaces, and results in a dead band region (below a certain threshold of rotational velocity) for which there is no output signal. Above the lockup threshold, output approaches the ideal linear response curve in a parabolic fashion. Instead of a linear response to an input angular rate, the transfer curve may exhibit a flat zone until it exceeds some undefined threshold. It would therefore be highly desirable to provide a gyro that exhibits a linear response to any applied angular rate [13].

In CLIFOG system, the output of the detector demodulates at the frequency of phase modulation treats as an error signal. This loop offers a contained load of an unequal phase deviation among the two counter propagating optical signals for rectifying the rate-of-turn actuated Sagnac phase deviation. Thus the final phase variation must be within the two interference signals to control the rate-of-turn at zero and recommends the non-reciprocal phase shift as a gyro output and it is nearly relevant to the rate-of-turn i.e., it is return back to the CLIFOG setup and further reproduce feedback phase $\Delta\phi_{fb}$ and that is inverse to Sagnac phase $\Delta\phi_s$. Therefore,

$$\Delta\phi_{fb} = -\Delta\phi_s \qquad (1)$$

3 Digital Closed-Loop Interferometric Fibre-Optic Gyro (DCLIFOG) System

Fig.1 shows the proposed digital closed-loop Interferometric fibre-optic-gyro (DCLIFOG) configuration. A new modulation scheme was proposed by using a dead band compensator in the FPGA board and it was employed by randomized discrete voltage-step to the feedback signal for the dead zone suppression (and also eliminate its causes) to attain the proper V2π reset by controlling DAC reference voltage. The voltage-step is used uncertainly with the time duration considerably smaller than the time earlier to lock the fixed feedback voltage and induces the insensitivity against rotation rate.

The simplest implementation is to remove the voltage-step in the demodulation process while responding by the photo detector signal. But the randomized voltage-step restricts to remain at one consistent level of the feedback signals. Moreover,

it equally allocates the modulating feedback voltage signals within the full phase of V2π modulation range, so that the error in this range is moderated and reduces to zero. As a result, this is standard (or real) rotation rate found by the new modulation scheme of IFOG.

In this given digital system constructs the feedback loop with various functional units such as Signal conditioning Amplifier (SCA), DPEC (Digital Phase Estimator card) board and output differential driver. The purpose of the phase modulator adopts the effective biasing, but it needs a laser light emission to hold the reset signal that happens quickly at each cycle, but the replacement of this requirement with the channel waveguide usage in electro-optic phase modulators.

The error in the lock-in amplifier output samples quantizes and retains nearly zero by digitized fed back signal. However, the frequency of sampling signal reciprocates to the emitted transit time τ as the prescribed readjustment of the staircase and biasing signals [14]. Proceedings takeoff against the error signal then guided to the phase modulator by a controller and to reproduce the amplitude of phase steps is adequate to the Sagnac phase deviation and transit time τ.

The DAC systematically generates a staircase reset signal by virtue of its redundancy. The step of the reset signal resembles to a phase shift of 2π radians, constantly to receive proper Sagnac phase shift. The system accomplishes the rotation rate arrangement by the direct measurement of error signal in a digital pattern. Meanwhile, this DCLIFOG system controls the constant phase while retrieving the signal. In FPGA board, if the filtering and amplification development performs the correct regulation then the feedback loop will fine-tune the feedback phase and it is approximately equal with a reverse Sagnac phase by considering entirely with a stable input rate-of-turns.

4 Signal Processing Scheme of DCLIFOG System

The signal-processing design of digital closed-loop Interferometric fiber-optic gyro (DCLIFOG) succeeds through DPEC (Digital Phase Estimator card) board consists of ADC, temperature sensor, FPGA, and DAC etc., which is also shown in Fig 1. Here, the DPEC is a signal-processing board develops for the rate-of-turn measurement in DCLIFOG system. In order to achieve the closed-loop functionality, this DPEC board serves as a signal-processing and data acquisition unit. The suggested way can develop the fed back signal for adjusting the phase deviation of DCLIFOG setup.

The DCLIFOG system tilts with a square-wave biasing signal and its duration is adequate to the transit time τ. However, for light intensity modulation, a square wave biasing signal modulation adapts the raise in sensitiveness and indication of sign to the rate-of-turn. The optic strength of the signal (coming from PINFET photo-detector) converted into electrical signal which is gyro output as a square-wave modulated cosine wave. But, this design receives modulated Sagnac phase deviation through PINFET. The DPEC board consists of 16-bit ADC which (is in parallel interface with FPGA) gets the PINFET data through SCA (Signal Conditioning Amplifier) and transmits this data to FPGA [9].

Then FPGA processes this data to load the digital output with the frequency of sampling signal, which develops into transit gyro frequency. Here, the data samples (1 sample per τ) and demodulates synchronously. Thus, the obtained demodulated signal is familiar with the Sagnac phase deviation exists in the detector result and this error traverse into a moving average (FIR) filter. This outcome amplifies with the gain factor (received through UART). The dead-zone difficulty and whatever the existed spike signals that are compensated by the dead band compensator and this compensation signal also receives through UART. This system integrates the error signals against τ in the phase integral controller to receive the final step height.

Subsequently the integrated error signal from the integrator induces to a digital ramp signal generator, which generates the ramp signal with constant voltage (V2π of MIOC) and that is precisely equivalent to source wavelength. Therefore, the operation of an integral controller with an unpredictable gain revokes the rate-of-turn actuated Sagnac phase deviation of the gyro by virtue of a ramp generator. To accomplish the closed- loop performance of a system, the staircase ramp signal operates as a feedback compensated phase deviation signal to restrict the rate-of-turn actuated phase variation; this approach is well-known as "digital serrodyne modulation technique"[11].

5 Dead-Band Elimination

In this proposed DCLIFOG system, the dead-band error can be eliminated by the addition of a periodic compensation signal, at the input to the step-size integrator. This designed system generates timing

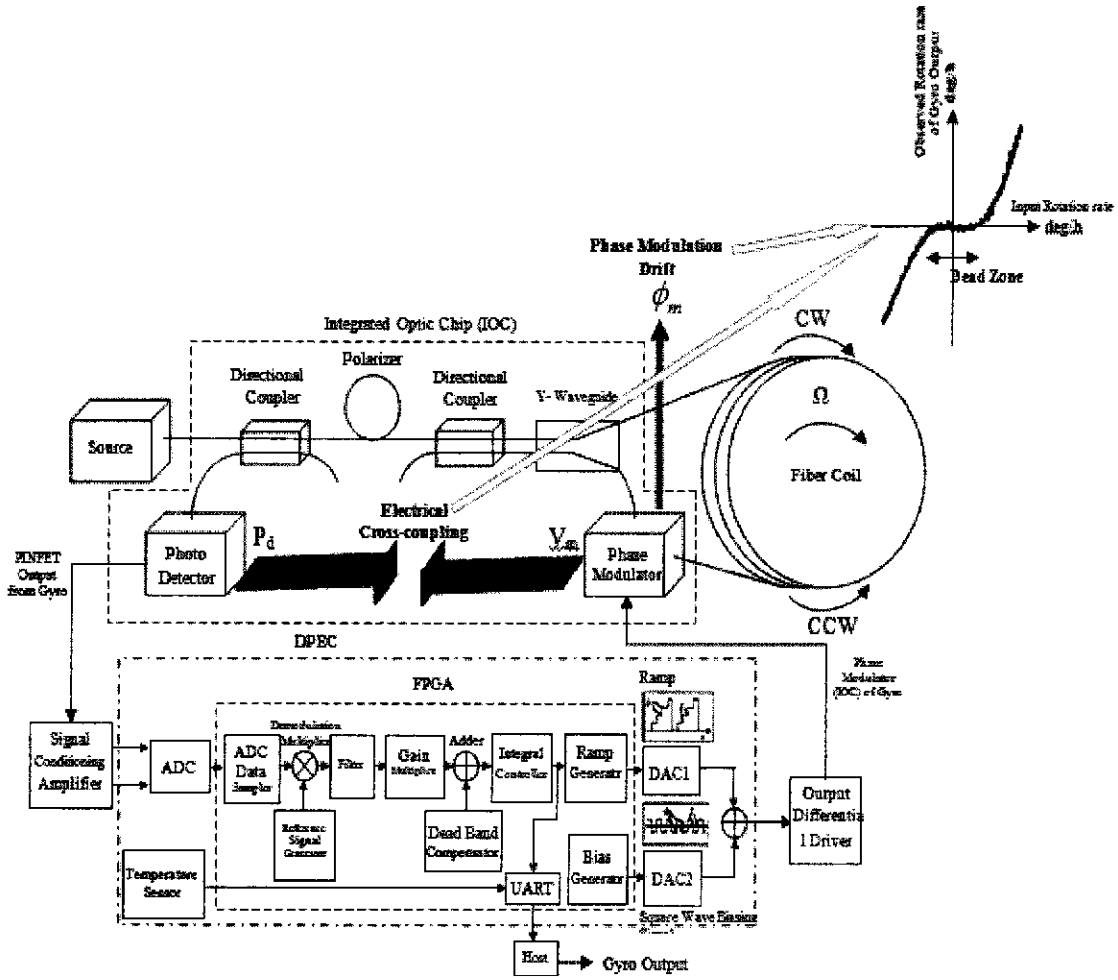


Fig.1 Proposed Configuration of Digital Closed-loop Interferometric Fibre-Optic Gyro (DCLIFOG) and Dead-Zone Sources

control signals used to upload the averaged step size data (i.e. rotational rate information) to PC [2].

Depending on the timing control signals generated, step-size data is accumulated and truncated (power of 2 divisions). Here, the feedback phase compensating signal ($V2\pi$) and the biasing square-wave signal ($V\pi/2$) are used as control signals for DCLIFOG. The peak-to-peak voltage of the biasing signal ($V\pi/2$ is equal to one-fourth of the $V2\pi$, peak-to-peak voltage of the ramp signal) also inclines to IOC for intensity modulation.

Finally, on-board 16-bit DAC receives these control signals and given to the phase modulator of the IOC. In the current design by using these control signals, the DPEC (Digital Phase Estimator card) board substitutes the averaged data output of phase integrator for every 2.5ms and temperature data to the Host/PC by nullifying the temperature-induced-bias-errors in the gyro output at the time of synchronization pulse request. One of these control signals can also be used to generate the compensation square wave signal used in Dead-band compensation [3].

The DCLIFOG system has several parameters like bias-stability, scale-factor, threshold and linearity etc., but while concentrating the lower rotations in the system described by the parameter threshold. So, the system is subjected to various kinds of tests to certain its performance and one of the tests considered here is threshold. Theoretically, the threshold is characterized as the variation in the output is acquired by the given input value and the resolution is specified as a slight increase in input generates the definite variation in output. The

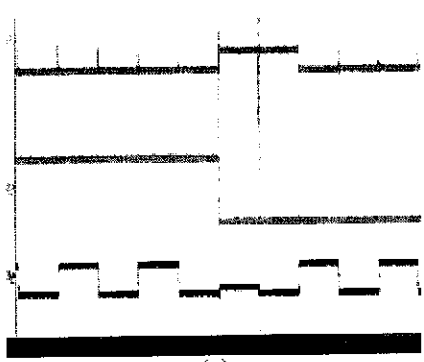
threshold sensitivity of a Gyro was related to the rotational velocity of an object is analogous to a degree per second. Thus the proposed system prompts the threshold to be maximum because of dead zone exists in the gyro which is predominantly brought about by the electronic cross-coupling interference in the modulation and demodulation circuit. The threshold should be less than 0.01deg/hr and the resolution should be better than 0.01deg/hr. In general, the working principle of IFOG determines that it has no dead-zone; otherwise if the dead band error exists then it is to be eliminated by addition of periodic compensation signal at the input. But in practice, in order to avoid the dead band error in the gyro output is to increase the dead band value. It was observed that the dead-zone decreases with gyro accuracy increasing.

Based on the definition of the resolution and threshold for FOG, a dead band definition and test method in digital closed- loop IFOG were proposed. The purpose of this threshold test is to measure the threshold and resolution of the gyro and also to determine the dead band as the input range (near zero) over which the output is less than 10% of the input. The data averaging time should be long enough to reduce the gyro noise to less than 25% of the dead band, prior to analyzing data then any bias should be removed.

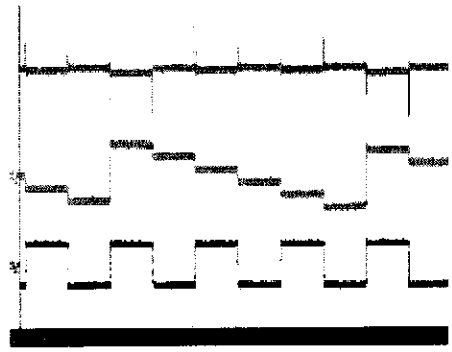
6 Tested Results

In the result analysis, the discussion starts with the closed- loop operation of DCLIFOG system without and with calibrations were seen in the DSO (digital storage oscilloscope) as displayed in the Fig. 2. In these figures (a & b), three waveforms represents with the gyro output, ramp and square wave biasing signals.

After that process performs various tests to measure the DCLIFOG parameters and displays its MATLAB outputs in Fig's 3 to 6.



(a)



(b)

Fig.2 Closed-Loop Outputs without and with Calibration

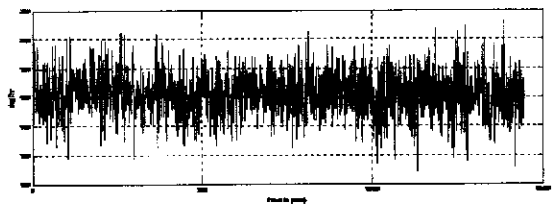


Fig. 3 Bias Test result from the Gyro

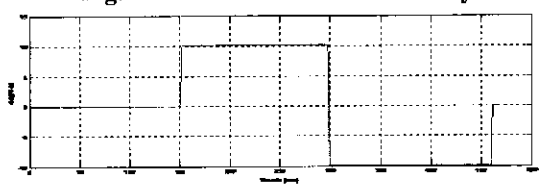


Fig.4 Scale-factor Test result from the Gyro

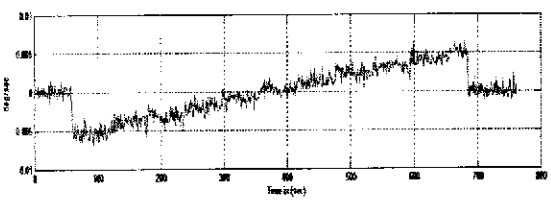


Fig.5 Threshold Test result from the Gyro

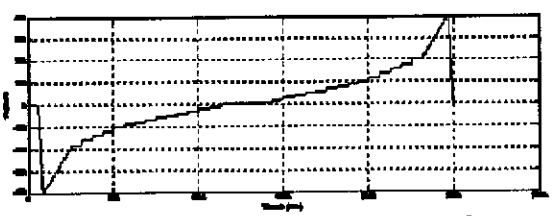


Fig.6 Linearity Test result from the Gyro

From the view of testing results, the DCLIFOG parameters maintain the stability of bias, scale-factor, linear response and sense for lower rotations by eliminating the dead band error.

7 Comparative Analyses on Gyro Parameters

Now the comparison made on DCLIFOG parameters by considering the peak-to-peak voltage of the ramp signal (and/or biasing signal) increases from 1% to 10% and decreases to 10% to 1% and observed the comparative results for three cases as shown below: (i) $V\pi/2$ kept stable and changes the $V2\pi$, (ii) $V2\pi$ kept stable and changes the $V\pi/2$, and (iii) Changing both $V2\pi$ and $V\pi/2$ at the same time.

7.1 Bias

The bias-test performs for all cases; then the comparable bias values for three cases are as displayed in the Fig's. 7 (a), 7 (b) & 7 (c).

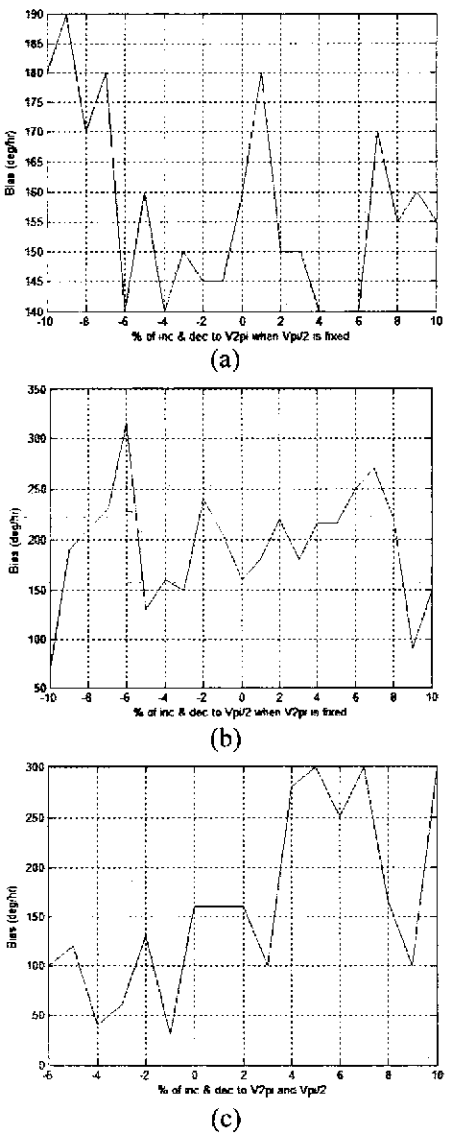


Fig.7 Estimation of Bias values for three-cases

7.2 Scale-Factor

The Scale-Factor-test implements for all cases, and displays its calculated scale-factor (SF) for three cases in Fig's. 8 (a), 8 (b) & 8 (c) in addition to this estimated the interrelated-offset [3].

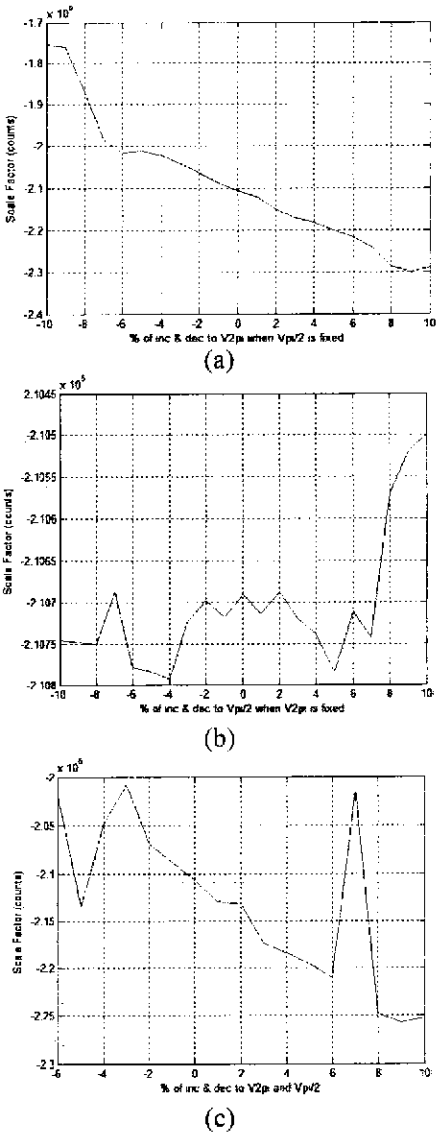


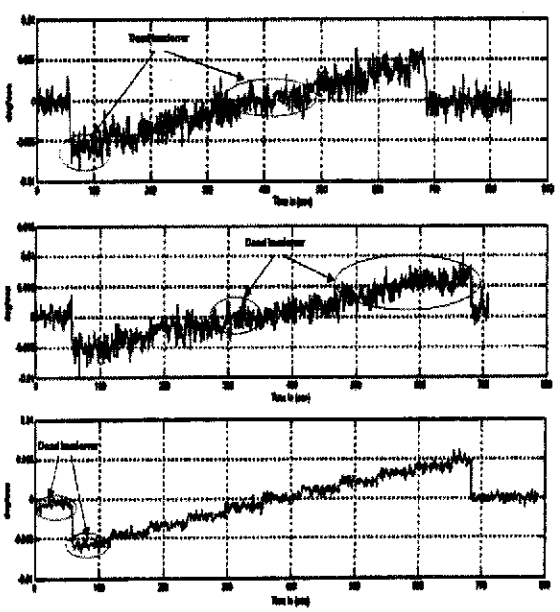
Fig.8 Estimation of Scale-Factor for three-cases

7.3 Threshold

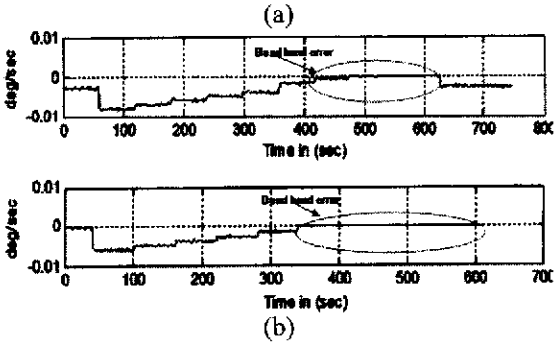
The threshold test executes for all cases as observed in Fig's 9 (a), 9 (b) & 9 (c). The system notices for all of the above three-cases, that there exists a dead zone according to $V2\pi$ and $V\pi/2$ voltage variations. In the first case by varying (either increasing or decreasing) the $V2\pi$ voltage, the DCLIFOG system can sense the lower rotations but cannot obtain the correct rotation rates (regarding the increase in error

voltage) even though Vπ/2 kept constant. As a result, the dead band error occurs and this error is also increases in a wide range with increase in V2π, as seen in Fig 9(a), and from this Fig 9(a), it was also observed that the increase in distortion of the DCLIFOG system due to percentage increase (or decrease) of V2π voltage. Hence, the system results with high % error and the output remains non-linear.

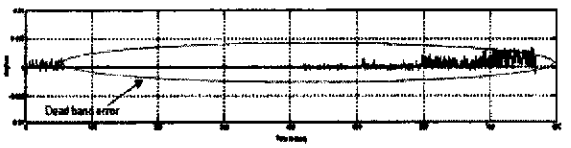
Although, in the second case by varying (either increasing or decreasing) the Vπ/2 and constant V2π voltage, the system can gradually not sense for lower rotations especially in clockwise directions as seen in Fig 9(b). Consequently, the effect of the DCLIFOG system has negligible except for some instances the system cannot sense properly for lower rotations because of having very low % error. Meanwhile, in the third case by varying both V2π and Vπ/2 voltages, the DCLIFOG system cannot respond correctly due to increase in % error and also the threshold range was exceeded and insensitive for all lower rotations either in clockwise or counter-clockwise directions, as displayed in Fig. 9(c).



(a)



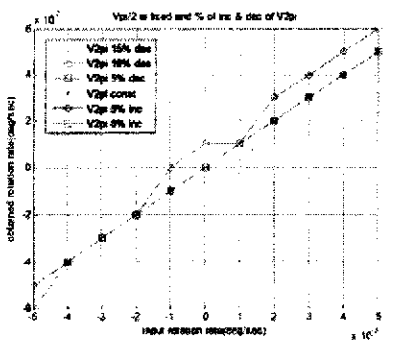
(b)



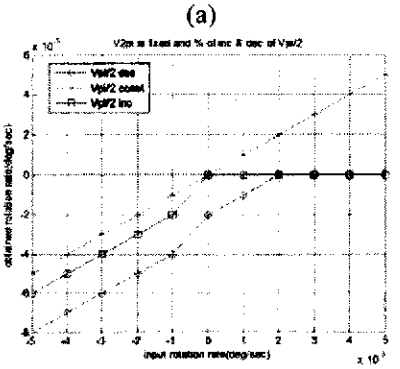
(c)

Fig.9 Threshold Results from Gyro for three-cases

Thus the threshold test executed for all cases, and then observed the linear characteristics of the gyro output by plotting a graph between the obtained rotation rates with actual input rotation rate for first two cases as displayed in the Fig's. 10(a & b) with respect to the tested results of Fig's. 9(a) & 9(b). But for third case cannot plot a graph because of insensitivity of the system for all lower rotations, as seen in Fig 9(c).



(a)



(b)

Fig.10 Estimation of Threshold Output for (a) Vπ/2 kept constant and V2π vary and (b) vice versa.

Finally from all these comparative results of the DCLIFOG system, it was observed that there exists a dead-zone. So that the system needs a correct reset value of V2π voltage to eliminate the dead band thereby reduces the non-linearity and instabilities present in the gyro output. Therefore, the ramp voltage must be exactly fixed with V2π range (which is also equivalent to phase shift range). This

limits the range of voltage applied to the modulator for phase controlling in the gyro and need not require threshold testing, otherwise perform the threshold test to find out the dead band error and generate an additional feedback phase voltage according to error and is to be added to the system for dead band elimination.

However to eliminate this dead band error, both the V2π and Vπ/2 voltages are kept constant then only the DCLIFOG system seems to be more stable by effectively removal of dead-band-error and maintains the linear relationship between the measured and actual rotation rates, as displayed in the Fig 11. As a result, V2π "resets" known to those familiar in the art of digital closed-loop Interferometric fiber-optic-gyros (DCLIFOG) occur naturally and automatically then maintain the stability and linearity in the gyro output.

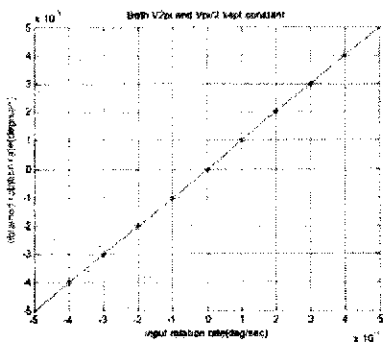
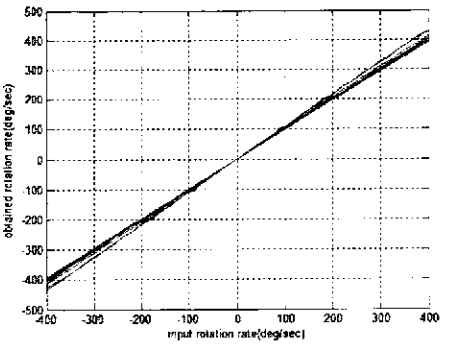


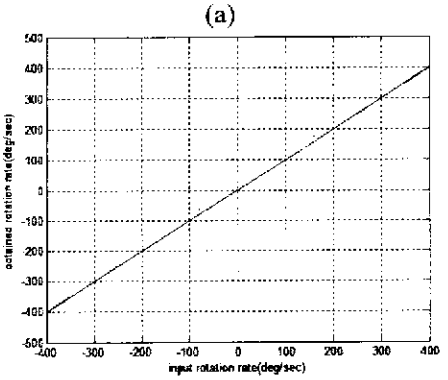
Fig.11 Estimation of Threshold Output for both V2π and Vπ/2 kept constant

7.4 Linearity

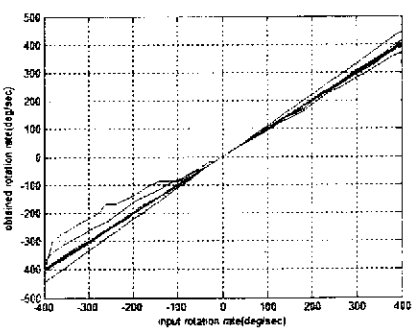
The linearity test executes for all cases, and then observed the linear characteristics of substantial rotation rate for an inclined rotation rate of input for three cases as displayed in the Fig's. 12 (a), (b) & (c). From the Figure 12 (b), it seems that the removal of dead band error and results a more stable and linear relationship between the measured and actual rotation rates, but in remaining two figures (Fig's 12 (a) & 12 (c)) there exists dead-zone due to variation in V2π voltage [2]. Therefore, the system observes that the ramp voltage must be exactly fixed with V2π range (which is also equivalent to phase shift range). This limits the range of voltage applied to the modulator for phase controlling in the gyro and need not require threshold testing.



(a)

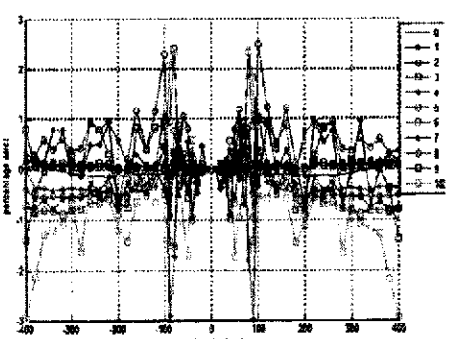


(b)

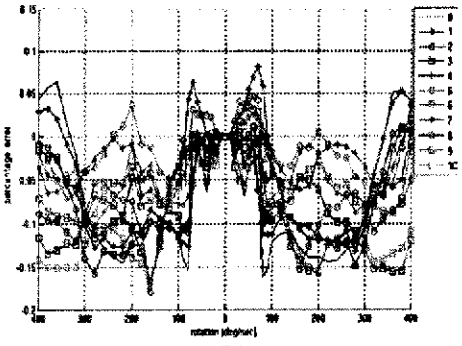


(c)

Fig.12 Estimation of Linearity for three-cases



(a)



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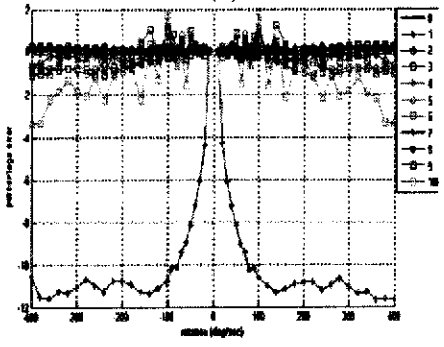
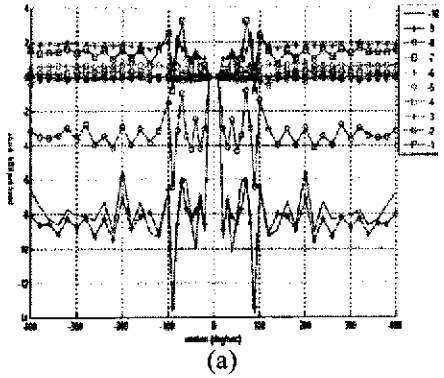
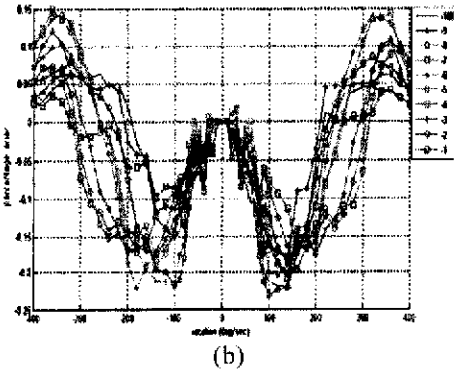


(c)

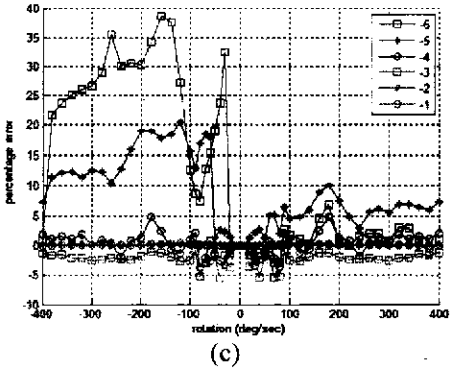
Fig.13 Estimation of % error increases from 1% to 10% for three-cases



(a)



(b)



(c)

Fig.14 Estimation of % error decreases from 10% to 1% for three-cases

The % error also detects for all cases, within a inclined rate-of-turn for three cases as displayed in Fig. 13 (a), 13 (b) & 13 (c) and Fig. 14 (a), 14 (b) & 14 (c).

In DCLIFOG system, the comparison is made on three cases, and the parameter values are finally tabulated as shown in the Table 1.

Table 1 Calibrated Values of DCLIFOG Parameters

DCLIFOG Parameters	Gyro Output
Ramp Voltage V2π	8.75V, 200 KHz
Square-Wave Bias Voltage Vπ/2	2.18V, 100 KHz
Bias	160 deg/hr
Scale-factor	-210683 counts
Offset	0.045 counts
Threshold Range	± 0.005 deg/sec
Linearity Range	± 400 deg/sec
Max. Non-Linearity	1313.60 counts
Min. Non-Linearity	-1290.10 counts
Percentage Error	± 10 %

8 Conclusion

In this paper, the rotation rate measurement in DCLIFOG system was studied theoretically and observes its performance by evaluating the gyro parameters. By changing these parameter values, different tests are done for three cases. All these obtained results comparison made in terms of bias, scale-factor, threshold and linearity. The performance of the DCLIFOG system was observed at lower rotation rates by adequate elimination of the dead band error. Otherwise, the system required to perform the threshold test in order to know the dead band error value for suppression. The

comparative analysis made on gyro parameter among three cases: the obtained results shows that the system performance is susceptible against the change in ramp V2π voltage and results a dead band error in gyro output is of 10%, but has no severe effect in the system due to change in Vπ/2 square-wave biasing signal voltage when V2π voltage kept stable i.e., system is precise. Finally, concluded that the DCLIFOG system performance is very sensitive with respect to ramp voltage (V2π) variations. To eliminate the dead-band error, a proper resetting of V2π voltage is required. The experimental results shows that this adopted method can tremendously eliminate the dead-band error, nonlinearities and instabilities, produces an accurate output at the rate of ±0.005 deg/sec, and has no severe effect on other static FOG performance. As a result, V2π "resets" known to those familiar in the art of digital closed-loop Interferometric fiber-optic-gyros (DCLIFOG) occur naturally and automatically then maintain the stability and linearity in the gyro output.

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07-09-2018
Vijayawada

U.Chandramouli
Assistant Professor
Department of MBA
P S C M R C E T
Vijayawada.

To
The Principal
P S C M R C E T
Vijayawada.

// through proper channel//

Respected Sir,

Sub: Request for advance from salary– Reg.

This is with reference to above stated subject I request your kind self to provide me a sum of twelve thousand rupees as advance from my salary to meet my unexpected financial obligations.

Please deduct the advance amount in Two Instalments from My Salary: 6000 (Aug) + 6000 (Sep).

Thanks in anticipation,

With warm regards,

Chandy

(U.CHANDRAMOULI)

V.Vijay Durgaprasad
07/09/2018.

7/9/18

7/9/18

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VIJAYAWADA - 520 001.

Approved by AICTE - ISO 9001:2015 Certified - Affiliated to JNTUK, Kakinada.

To

The Committee,

PSCMR,

Vijayawada

14-9-2018

Respected Sir,

Samarasata Sewa Foundation termed as SSF has made an MOU with our college for which a website and an Android app with all their requirements has been delivered to them. This project is done by M V D Kiran (15-565) and M S T Tejaswini of IV CSE under the guidance of Mr.Murali Krishna and Mr. Sarath Chandra who helped for successful completion of project.

Based on the MOU SSF offered Rs.25000/- for this project. In which Rs.5000 is being rewarded to each of the students who made this project successful.

Thanking you Sir,

Signature of HOD

Cheque for 5000/- Each Student

14/9/18

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Vijayawada,
14/09/18.

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N.Mounika,

Asst. Professor,

ECE Department,

PSCMR College of Engineering and Technology,

Vijayawada-1.

To

The Principal,

PSCMR College of Engineering and Technology,

Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on September 2018 in "**Innovations in Electronics and Communication Engineering": Springer journal**....Regd.

I, N. Mounika working as an Asst. Professor in ECE Department. I published a paper titled " **Systematic Method for Detection and Prevention of Fire Accidents in Rail Transport**" on September 2018 in "**Innovations in Electronics and Communication Engineering" Springer Journal**. So I request you to consider my published paper for an incentive as per the norms of our institute.

Thanking You,

Yours faithfully,

N.Mounika.

N.Mounika.

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14/9/18.

Rec. for an incentive of Rs. 5000/-
14/9/18

14/9/18

Systematic Method for Detection and Prevention of Fire Accidents in Rail Transport

B. Vanajakshi and N. Mounika

Abstract Exemplary embodiment of the present disclosure is directed toward a systematic method for preventing fire in a rail transport. The system includes a flame detector which detects fire at a critical fire point in compartments of a rail transport, a control unit which receives the detected fire information from the flame detector for transmitting digital signals, an alarm unit which notifies the detected fire information to the passengers through an alarm, a liquid-crystal display unit which displays a fire presence compartment number of the rail transport, a power activation and deactivation unit which deactivates a power of the rail transport and activates battery bulbs in the compartments of the rail transport, water sprinkling pipes which split the water in the fire presence compartments, a power relay unit which controls the speed of the rail transport, and emergency services alerting unit which transmits an information of detected fire information to the emergency services through a communication network [1].

Keywords Rail transport · Flame detector · Alarm · Liquid-crystal display unit Power activation and deactivation unit · Water sprinkling pipes

1 Introduction

Trains are moderate vehicles which are used for transporting people and goods. Mostly, people prefer train journey for long distance as it is cheaper. But nowadays, fire accidents occur in many trains. The main purpose of a systematic method for preventing fire in rail transport is to rescue the people's life and save the government property [2]. This project will focus on the system that will detect and control the fire accidents in running trains (Fig. 1).

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H. S. Saini et al. (eds.), *Innovations in Electronics and Communication Engineering*,
Lecture Notes in Networks and Systems 33,
https://doi.org/10.1007/978-981-10-8204-7_15

Fig. 1 Firing train

2 Background

In railway vehicles, low-error smoke gas detection is of utmost interest. In particular, the fire load introduced by the passengers cannot be controlled, which is why fires that break out can spread quickly and countermeasures must be taken very quickly. For example, a fire-fighting system must be able to tackle very quickly a fire that has broken out. If the fire spreads and the fire-fighting system fails, serious damage must be anticipated in most cases, which is why it is imperative that smoke detection must be designed with redundancy.

There has been an alarming increase in railway fires in recent years. Fire on a running train is more catastrophic than on a stationary one, since fanning by winds helps to spread the fire to other coaches. Moreover, passengers sometimes jump out of a running train on fire, resulting in increased casualties. In the light of the aforementioned discussion, there is a need for a system and method for preventing fire in rail transport.

3 Proposed System

In this system, when the fire occurred in any coach, that fire can be monitored and controlled totally in six stages:

Stage1: *Alarm* will be activated and *LCD* unit displays the fire presence compartment number.
Stage2: *Power supply* should be turned off.

Stage3: *Battery bulbs* will glow with the help of inverter.
Stage4: *Doors* and *windows* should be opened automatically.
Stage5: *Water* is sprinkled through water pipes.
Stage6: Automatically, the train should be slowed down and then stopped depending upon the speed.
Stage7: *Emergency services alerting unit* transmits the detected fire information to the emergency services through a communication network.

4 System Model

The system includes a flame detector configured to detect the fire at a critical fire point in one or more compartments of a rail transport. The system includes a control unit configured to receive the detected fire information from the flame detector for transmitting one or more digital signals [3]. One or more digital signals are received by the control unit for activating one or more water sprinkling pipes. A direct current motor configured to operate the one or more water sprinkling pipes. The power relay unit decreases the speed of the rail transport and also we use GPS (Global positioning system) to track the place where the fire accident occurred.

5 Brief Description of Drawings

Other objects and advantages of the present invention will become apparent to those skilled in the art upon reading the following detailed description of the preferred embodiments, in conjunction with the accompanying drawings.

Figure 3 illustrates a diagram of a fire prevention system in multiple compartments of the rail transport. As shown in the figure, a flame detector is configured to detect fire at a critical fire point in one or more compartments of a rail transport; a control unit is configured to receive the detected fire information from the flame detector for transmitting one or more digital signals;

6 Detailed Description of Drawings

It is to be understood that the present disclosure is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the drawings. The present disclosure is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting.

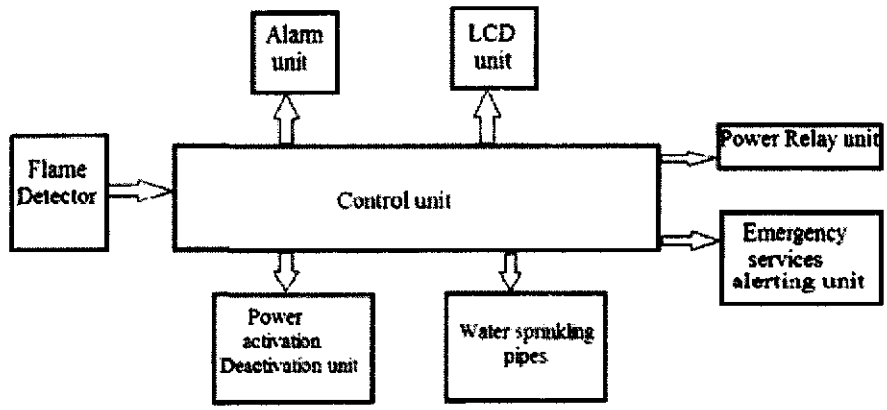

Fig. 2 Fire prevention system in the rail transport

Referring to Fig. 2 is a block diagram depicting a fire prevention system in rail transport. It depicts a flame detector which may configure to detect fire in compartments of a rail transport. The flame sensor may detect the fire at a critical point. The critical point may be referred as a predetermined value or preset value for detecting the fire. The flame detector transmits detected fire information to a control unit [4]. The system may include a power activation and deactivation unit which may be configured to deactivate a power in the rail transport for preventing of spread the fire into other compartments due to the power supply. Then, doors and windows may be opened automatically in the compartments of the rail transport. The communication network may include but not limited to global system for mobile communication, Zigbee, other wireless communications, and the like.

Referring to Fig. 3 is a diagram depicting a fire prevention system in multiple compartments of the rail transport. The diagram depicts an engine compartment of the rail transport which may be include a flame detector, an alarm unit, a liquid-crystal display unit, and power activation and deactivation unit. The flame detector may be configured to detect fire in the engine compartment of the rail transport. The control unit activates the alarm unit, the liquid-crystal display unit, and the power activation and deactivation unit. The alarm unit provides an alarm in the rail transport. At the same time, the liquid-crystal display unit may configure to display a fire presence compartment number in the rail transport. Then, the rail transport doors and windows are opened automatically due to the occurrence of the fire in any compartment.

Referring to Fig. 4a is a flow diagram depicting a method for preventing fire in the rail transport. The first step in this method starts with a flame detector that detects the fire in the compartments of the rail transport. The detected fire information is transmitted to a control unit at the next step. At next step, the control unit activates an alarm unit, a liquid-crystal display unit.

Referring to Fig. 4b is a flow diagram depicting fire preventing steps in the rail transport. The first step in this method is that, the control unit receives the detected fire information in the rail transport from the flame detectors which are used to

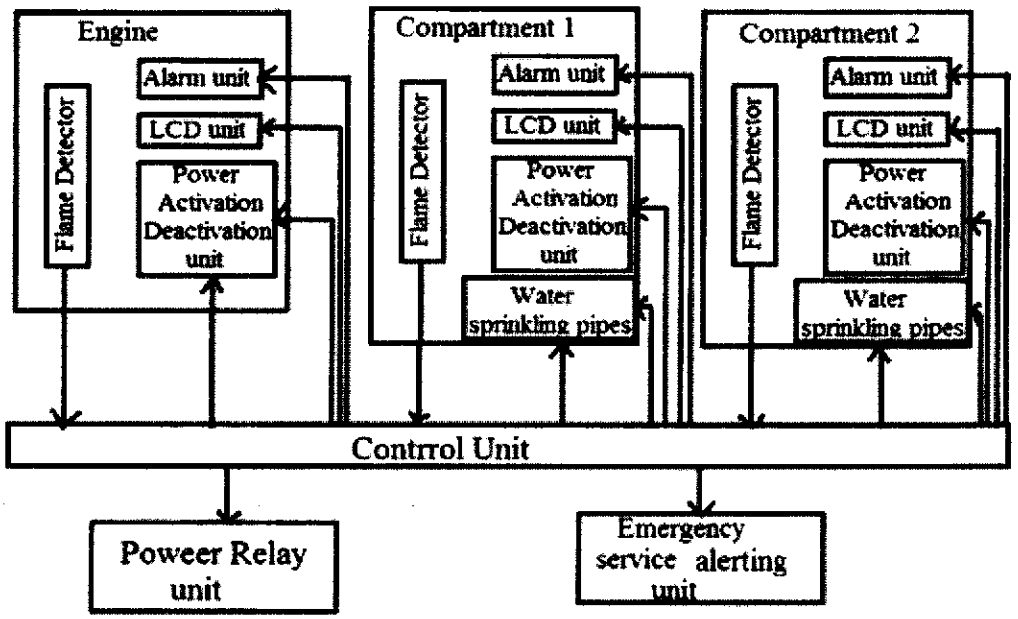

Fig. 3 Fire prevention system in multiple compartments of the rail transport

detect the fire in the rail transport at the critical fire point. At next step, an alarm unit alerts the passengers in the rail transport by providing a buzzer, bell, and voice announcement.

7 Experimental Results

Firing Train Figure 5 indicates the firing train and the fire is detected by the sensor and this is the first stage of this project. This is a black color device and it has a lm-35 fire sensor. When the fire is detected in any coach, this fire sensor will detect the fire (Figs. 6 and 7).

Figure 8 shows the glowing of battery bulbs. This action can be performed automatically when the power supply is turned off. Figure 9 shows the water sprinkling to reduce fire. The water can be sprinkled through water pipes.

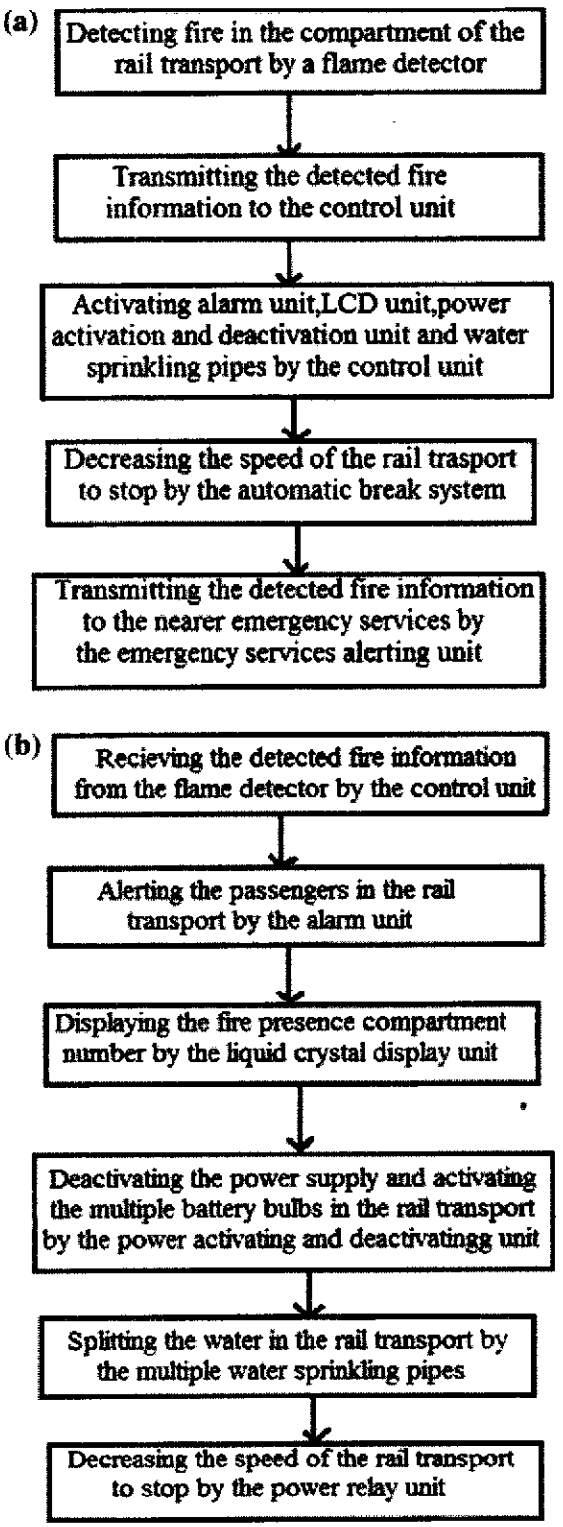

Fig. 4 **a** Method for preventing fire in the rail transport **b** Fire preventing steps in the rail transport

Fig. 5 Firing sensor

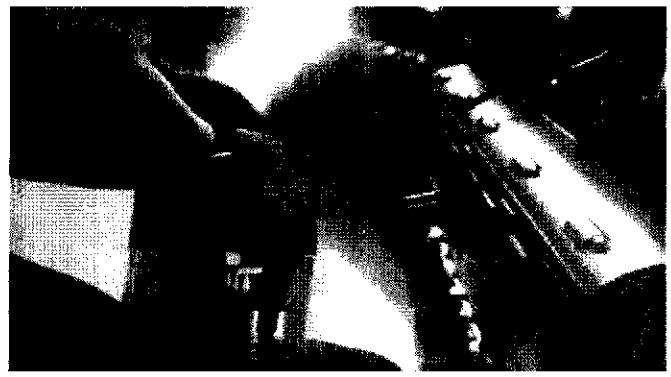

Fig. 6 Display

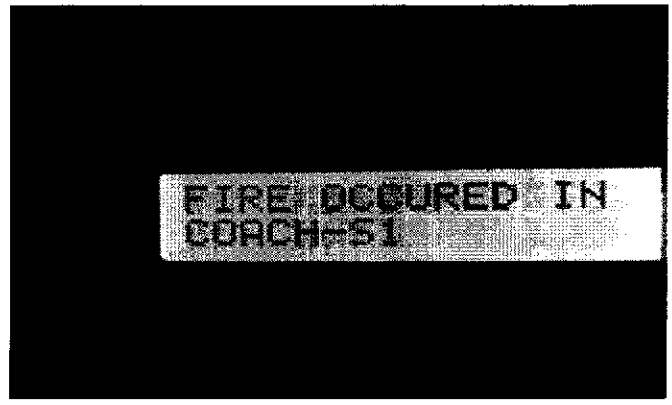

Fig. 7 Buzzer

Fig. 8 Glowing of battery bulbs

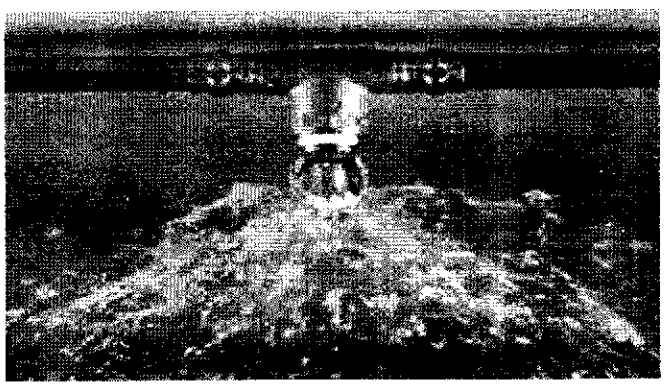

Fig. 9 Water sprinkler

8 Conclusion

With the help of wireless sensor network prototype module, the microcontroller can sense the data from different sensors like fire sensor and smoke sensor which are used for taking necessary actions using communication network. Fire accidents are to be controlled and reduced with the concept of this "systematic method for preventing fire in rail transport" and rescue the lives of many people and save government property.

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EEE Department,

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To

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A Comparison between SFLA and Wavelet based Zero Active Power Tracking Technique for Improving DVR Capability and Voltage Sag

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Abstract--- In this paper we enhance the power quality problems in terms of voltage sag. To protect the system this paper proposes a concept of DVR. Here wavelet based zero active power tracking technique for enhancement of DVR capability has been proposed. The main aim is to enhance the abilities of DVR to maintain acceptable voltages and last longer during compensation. The discrete wavelet transform uses filter banks for the analysis and synthesis of a signal. By this technique we can gain the less energy being taken out of the dc-link capacitor, resulting in smaller size requirements. The Shuffle Frog Leaping Algorithm (SFLA) combines the benefits of the genetic- based and the social behavior-based PSO algorithms. Here a comparison is made between SFLA and wavelet. These systems are verified using mat lab/simulink. Here THD values are compared.

Keywords--- DVR, WAVELET, SFLA, SAG.

I. Introduction

Due to sensitive loads power quality problems occurs in distribution systems. Sag, swell and some other problems are the power quality problems which affects the performance of the system [1]. In this paper we discuss the sag, swell occurs due to the faults and sensitive loads [2] [3]. To overcome these power quality problems we required a compensating device which is DVR [4]-[5].

SFLA combines the advantages of both genetic-based memetic algorithms and social behaviour than other algorithm. Also it is worthy or mentions that the time of performing this algorithm is faster. Among the various controllers available in this present scenario PI controller is probably most popular existing controller. There exist many variations in the PI controller like, e.g,: nonlinear PI with nonlinear gains. Initially, the error signal moves into the PI control loop where it is multiplied by the proportional and integral constant. PI controller is nothing but a feedback control loop that calculates an error signal by taking the difference between the output system. The output of the PI control is a power value and in order to change into a quantity that is comparable to that of control signal, it goes through a power to PWM signal converter. The error, the integral of the error could be related to the low and high Frequency contribution in the error signal. This motivates resolving the signal using wavelet analysis and using a linear combination of the time frequency signals at different bands to construct a controller. A comparison with standard PI controller shows that the dynamic response of the proposed wavelet is much faster. To improve the capability of DVR we are using wavelet for better results. In recent scenario power systems contains DVR inside it have been considered advanced series compensator for activating or responding with a variety of voltage variations. Their fast response is the main advantage, which can accomplish most of the requirements for sensitive loads, for which good power quality can be guaranteed. [6]-[11]. Additionally the supervision technique needs to be considered, as dissimilar compensation concepts will finish in different performances. The DVR will respond when power is supplied through load side. By specifying the selection of DVR the load ratings are arranged. The grimness of voltage sag is also important factor.

II. Dynamic Voltage Restorer

To protect the power system components from voltage sags and swells, the DVR plays a key role when compared with the other compensating devices. The efficiency of DVR is high and provides reliable operation as compared with the basic controllers such as injection Transformers, series and shunt reactors and fault limiters. The main function of DVR is to inject extra voltage to the Transmission system for regulating the voltage across load

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[12].The location of dynamic voltage restorer is generally located in distribution side i.e. between distribution feeder and load. The schematic diagram of the DVR is shown in Figure 1.

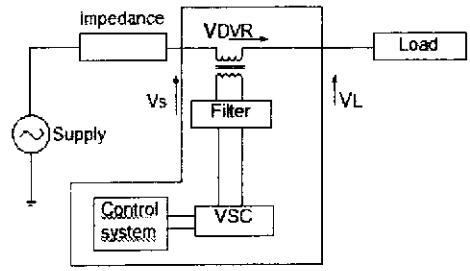

Figure 1: Basic Structure of DVR

The general configuration of the DVR mainly consists of the following components

- An boosting Transformer
- A filter for reducing harmonic
- The battery energy Storage system
- A Voltage Source Converter
- DC charging circuit
- A control diagram for controlling DVR based on reference voltages and actual load voltages with the help of PWM technique. In this a general PI controller is used for controlling the error value by using WAVELET and SFLA.

III. Zero Active Power Tracking Technique

In this zero active power tracking technique, the magnitude and phase of the DVR voltage plays a vital role in reaching better compensation for the voltage sag. This voltage involved in the calculation of stored energy in the dc-link capacitor to achieve the best performance, displacement of the corresponding DVR voltage and load current complex phasors must be maintained at an angle of approximately 90 degrees.

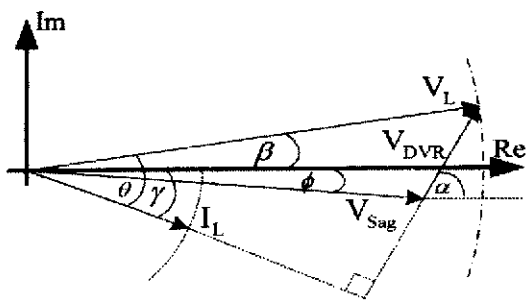

Figure 2: Zero Active Power Tracking Technique

The above Figure 2 shows the DVR voltage phasor is a stretchable one as required representing the compensation voltage added to the sag voltage. Its magnitude existed related to the calculation of equation(1) and its displacement angle α is said according to equation (2) an angular displacement γ indicates the load characteristic, which can be determined directly using equation(3)

$$PDVR = VDVR\ IL \cos(\alpha-\gamma) = 0 \quad (1)$$

$$QDVR = VDVR\ IL \sin(\alpha-\gamma) \quad (2)$$

$$QS = VSag\ IL \sin(\gamma-\varphi) \quad (3)$$

relating to the load real power similar to the angle θ displacement it is also tied to the resulting voltage therefore the DVR voltage will resulting both θ and γ being changed by this technique. Some β degrees must be observed. The tracking process starts with the control of the converter output to provide the corresponding voltage. Which must be varied to meet the targets? The magnitude and phasor increased continuously until reaching a value that results in a relatively acceptable power. Two possible targets are set as preferred tracking boundaries. In ideal zero active power

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(PDVR=0) is achieved while the load is still supported by some of the system reactive power (V sag).Boosting the converter to generate suitable voltages required for the compensation, here less real power is output from the DVR, which is the main objective of this control tracking system. The actual compensating voltage must be bump into the mentioned targets in searching for the desired conditions a fuzzy logic based controllers (FLC) is activated to provide a proper phase angle for the appropriate voltage, dealing with nonlinearity due to the incremental phase displacement Referring to the phasor diagram illustrated in fig 1 whenever the angle β increases with respect to zero degree reference, the power also increases but not in a proportional manner. According to the principle described previously, A absolute increment of the angle β phase shifting of the demand voltage will be achieved from the FLC, as shown in figure 3, Where the applicable power error was then proceed to provide for the phase shifting.

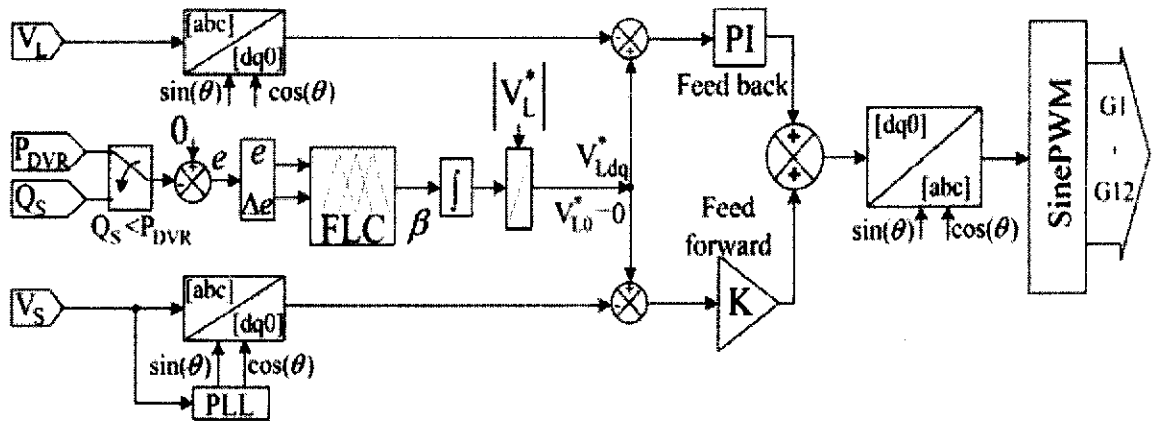

Figure 3: The Angle β Phase Shifting of the Demand Voltage will be Achieved from the FLC

IV. Fuzzy Logic Controller

In the previous section, control strategy based on GA-PI controller is discussed. But in case of GA-PI controller, it has high settling time and has large steady state error. In order to rectify this problem, this paper proposes the application of a fuzzy logic controller (FLC) shown in figure 4. Generally, the FLC [13] is one of the most important software based technique in adaptive methods. As compared with previous controllers, the FLC has low settling time, low steady state errors. The operation of fuzzy controller can be explained in four steps.

1. Fuzzification
2. Membership function
3. Rule-base formation
4. Defuzzification.

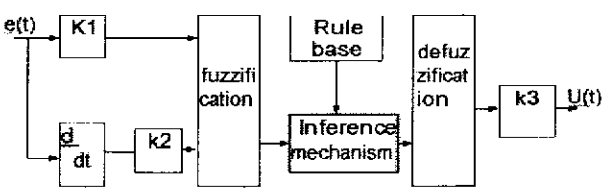

Figure 4: Basic Structure of Fuzzy Logic Controller

In this paper, the membership function is considered as a type in triangular membership function and method for defuzzification is considered as centroid. The error which is obtained from the comparison of reference and actual values is given to fuzzy inference engine. The input variables such as error and error rate are expressed in terms of fuzzy set with the linguistic terms VN, N, Z, P, and Pin this type of mamdani fuzzy inference system the linguistic terms are expressed using triangular membership functions. In this paper, single input and single output fuzzy

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inference system is considered. The number of linguistic variables for input and output is assumed as 3.The number of rules is formed as 9.The input for the fuzzy system is represented as error of PI controller. The fuzzy rules are obtained with if-then statements. The given fuzzy inference system is a combination of single input and single output. This input is related with the logical operator AND/OR operators. AND logic gives the output as minimum value of the input and OR logic produces the output as maximum value of input.

V. Shuffle Frog Leaping Algorithm

The SFL algorithm combines the benefits of the genetic- based and the social behavior-based PSO algorithms. In this algorithm the population consists of a set of frogs (solutions) that is partitioned in to subsets referred to as memeplexes. The different memeplexes are considered as different cultures of frogs, each performing a local search. Within each memeplex, the individual frogs, and evolve through a process of memetic evolution. After a defined number of memetic evolution steps, ideas are passed among memeplexes in a shuffling process. The local search and the shuffling processes continue until defined convergence criteria are satisfied [14,15]. As described in the pseudo code of an initial population of P frogs is created randomly.

For S-dimensional problem (S variables), a frog i is represented as Xi= (xi1, xi2,……,xis).

Afterwards, the frogs are sorted in a descending order according to their fitness. Then the entire population is divided in to m memeplexes, each containing n frogs (p=m x n). In this process the first frog goes to the first memeplex, the second frog goes to the second memeplex, frog m goes to the m memeplex and frog m+1 goes back to the first memeplex, etc. within each memeplex, the frogs with the best and the worst fitness is identified as Xg. Then a process similar to PSO is applied to improve only the frog with the worst fitness in each cycle.

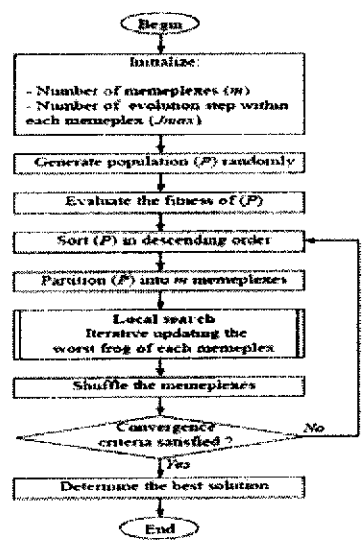

Figure 5: SFLA Flow Chart

SFLA Procedure:

1) Create an initial population of p frogs generated randomly.
2) Sort the population increasingly and divide the frogs in to m memeplexes each holding n frogs such that p= m×n.
3) Within each constructed memeplex, the frogs are infected by other frog's ideas: hence they experience a memetic evolution. Memetic evolution improves the quality of the meme of an individual and enhances the individual frog's performance towards a goal. Below are details of meme tic evolutions for each memeplex
4) set m1=0 where m1 counts the number of memeplexes and will be compared with the total number of memeplexes m. set y1=0 where y1 counts the number of evolutionary steps and will be compared with the maximum number of steps (ymax), to be compared within each memeplex.
5) set m1= m1+1
6) set y1 = y1+1

7) For each memeplex, the frogs with the best fitness and worst fitness are identified as X_W and X_b respectively. Also the frog with the global best fitness X_g is identified, and then the position of the worst frog X_W for the memeplex is adjusted such as (6) and (7)
8) If $m1<m$, return to step 5. If $y1<y_{max}$, return to step 6, otherwise go to step 2.
9) Check the convergence. If the convergence criteria are satisfied stop, otherwise consider the new population as the initial population and return to the step 2.

By observing the above flowchart we can easily understand the how this method is implemented.

VI. Wavelet

In this present scenario wavelet has being playing a key role in both theoretical and practical applications [16]. Wavelet is nothing but a small wave which contains both oscillatory and window functions. It is a tool used to convert a signal into a series of wavelets. It can be used in approximating data with sharp discontinuous manner. We can obtain data at every point in the signal without losing the information in it [17]. The wavelet avoids the generation of high frequency spikes in the reference control current signal and ensures stability. Wavelet analysis consists of breaking of a signal into shifted and scaled version of the original wavelet.

The fundamental idea of wavelet transforms is that the transformation should allow only changes in time extension, but not shape. This is affected by choosing suitable basis functions that allow for this. Changes in the time extension are expected to conform to the corresponding analysis frequency of the basis function. Based on the uncertainty principle of signal processing,

In other words, the basis function Ψ can be regarded as an impulse response of a system with which the function x(t) has been filtered. The transformed signal provides information about the time and the frequency. Therefore, wavelet-transformation contains information similar to the short-time-Fourier-transformation, but with additional special properties of the wavelets, which show up at the resolution in time at higher analysis frequencies of the basis function. The difference in time resolution at ascending frequencies for the Fourier transform and the wavelet transform is shown below.

VII. Simulation

The system for verification of the proposed compensation technique was designed in MATLAB for comparison with existing technique, As shown in the schematically simplified diagram in Fig 3 the components representing the system are full bridge power converters with LC filters and DC-link capacitor (C) included, three insertion transformers used as coupling devices series connected between a three-phase power supply and a lagging power factor load, and the control that monitors the system voltage (VPCC), load voltage (VL) and current (IL), as mentioned previously.

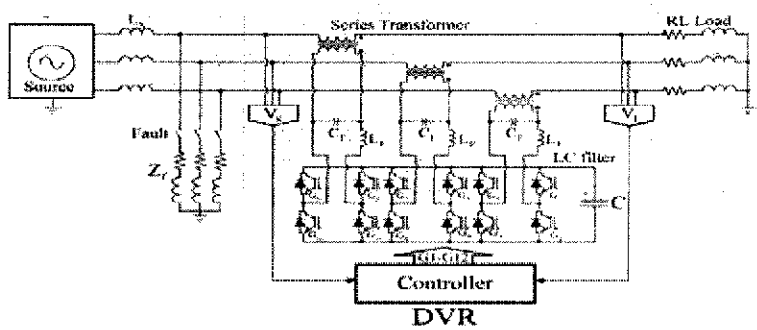

Figure 6: Circuit Diagram Model for Simulation Using MatLab/Simulink

Table 1: Parameter Ratings for Simulations and Experiments

QUANTITY	VALUE
Vs	380V
LOAD	2.33KVA,0.45 lagging
DC Link Capacitor	3.3mF
LC Filter	1mH, 20μF
Zf	0.43Ω 1mH

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Output signals from the control (G1-G12)were used for further gating of all the IGBTs in order to have the synthesized compensation voltage at the insertion transformer terminals, according to the technique employed. In comparison to this simulation, all the model's parameters were established relative to the overall test rig availability for the experimental tests and were scaled to available laboratory ratings. As shown in Table 1, a three-phase programmable supply of upto 380V AC was used as the system source voltage (VS). The simulations were then conducted comparatively, as described in subsections A and B.

Simulink Diagram for SFLA-PI Controller

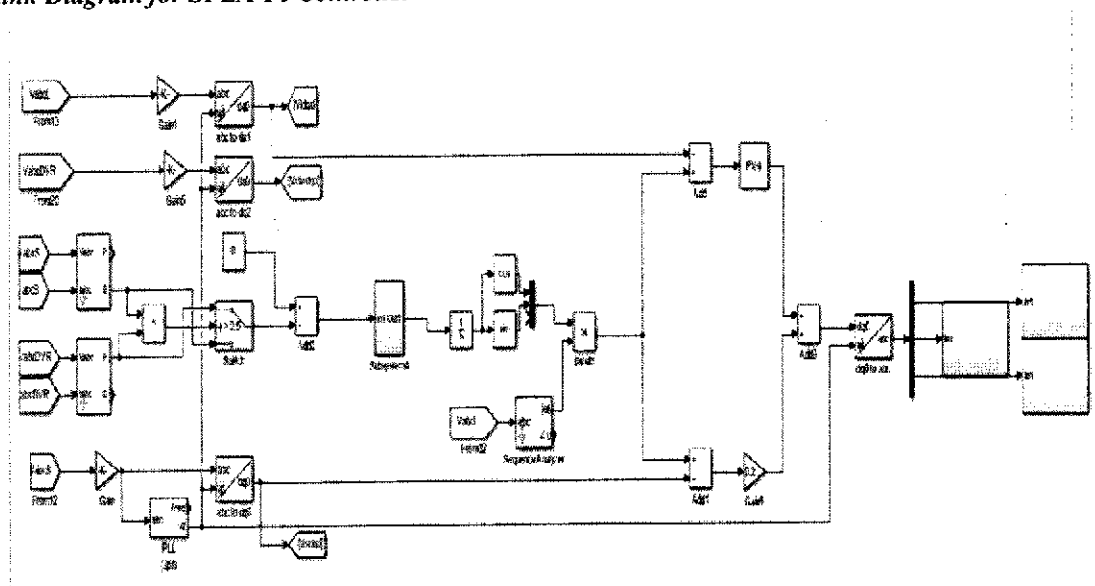

Figure 7: Simulink Diagram for SFLA-PI Controller

For comparison, the traditional zero active power tracking technique with SFLA-PI controller was conducted first, highlighted by the remaining energy in the DC-link capacitor and duration of the proper supporting voltage that was being generated by the DVR during the compensation.

For clarity, the highlights occur with voltage sag. For example, The drop in Vs between t=0.4sec and 0.9s, which was seen as V_{Sd}, is illustrated in fig. 8 Then, at t=0.4sec the load voltage was at 114v which was lower than the rated V_L=380V.

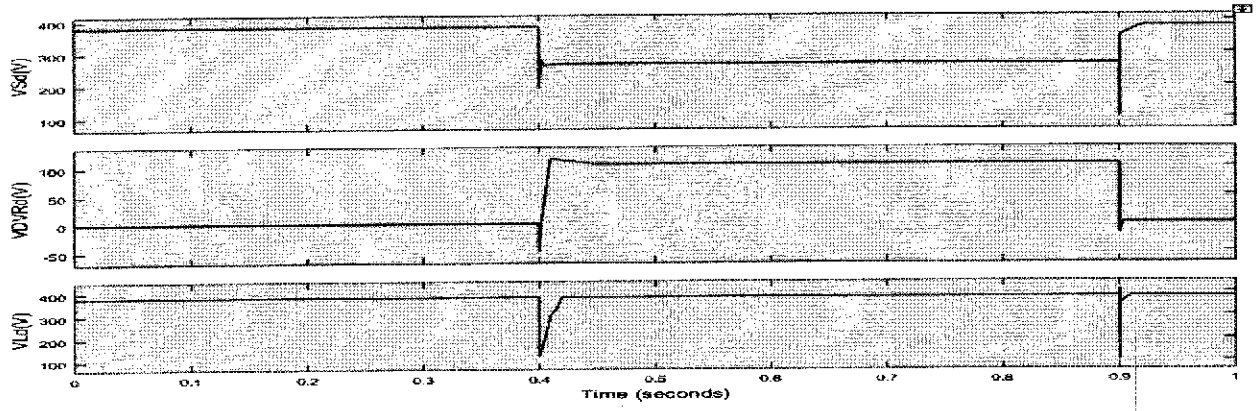

Figure 8: D-axis Voltages at the System (VSd), DVR (VDVRd), and Load (VLd) Zero Active Power Tracking Compensation with SFLA-PI Controller

In response to this, the DVR injected an exact compensating voltage (VDVR) immediately after the DVR detected the mentioned sharp drop in the VSd. Afterwards, as a result, the load voltage was then increased to the desired value. As can be seen, this was the zero active power tracking technique compensation.

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All the quadrature components of the relevant voltages were zero, as shown in Fig. 9 Therefore, the direct-axis voltage directly represents the magnitude of the load voltage, resulting in the corresponding three-phase voltage increase shown in Fig. 10 The magnitude was the same as the trend in direct-axis volt age captured, as shown in Fig 8

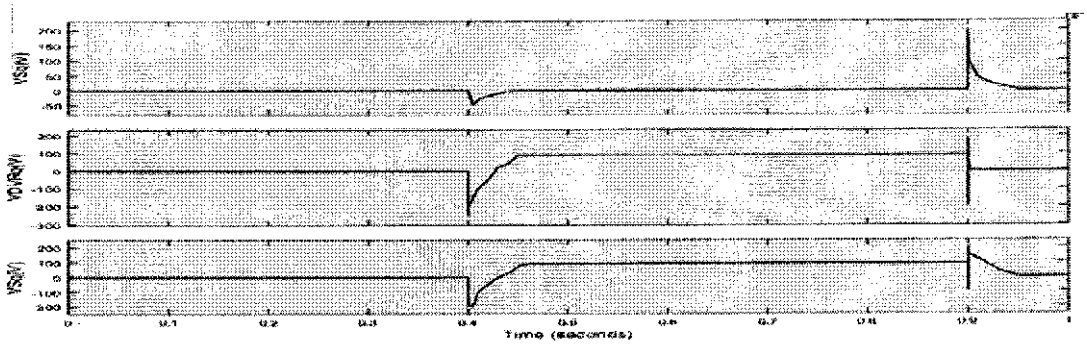

Figure 9: Q-axis Voltages at the System (VSq), DVR (VDVRq), and Load (VLq) During Zero Active Power Tracking Compensation with SFLA-PI Controller

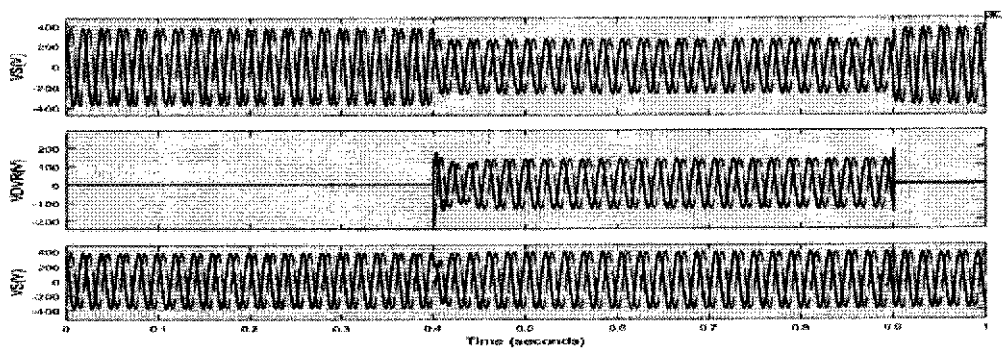

Figure 10: The Overall Three-phase Voltage Signals during Zero Active Power Tracking Compensation with SFLA-PI Controller Compensation

Related to this process, the overall real power flows were captured, as shown in Fig 10, in order to consider how long the DVR could cover for the compensation. Real power flows were agreeable to the voltages plotted in both Figs 8 and 9. It can be clearly seen that real power PDVR was associated with the energy output of the DVR provided for the compensation. When the sag occurred, the load was able to consume power at its own demand only in the first 245 ms of the entire voltage sag. When the compensation started, stored energy in the DC-link capacitor was used to generate AC voltage at the corresponding converter.

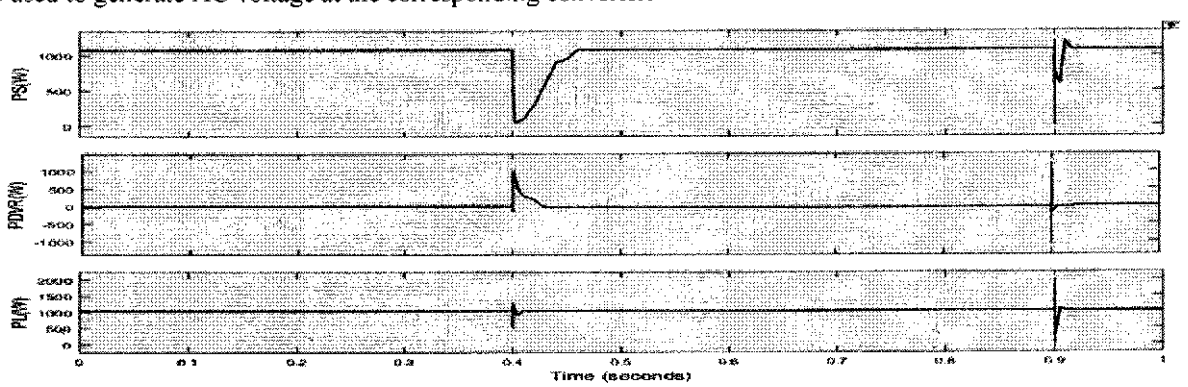

Figure 11: Real power at source (PS), the DVR (PDVR) and load (PL) during zero active power tracking compensation with SFLA-PI controller

Then, the DC-side voltage reduced proportionally to the utilized energy, as shown in Fig 11 Nonetheless, this satisfactory compensation continued for approximately t = 0.9 s, According to this evidence, it is implied that a portion of the voltage sag covered by zero active power tracking compensation technique.

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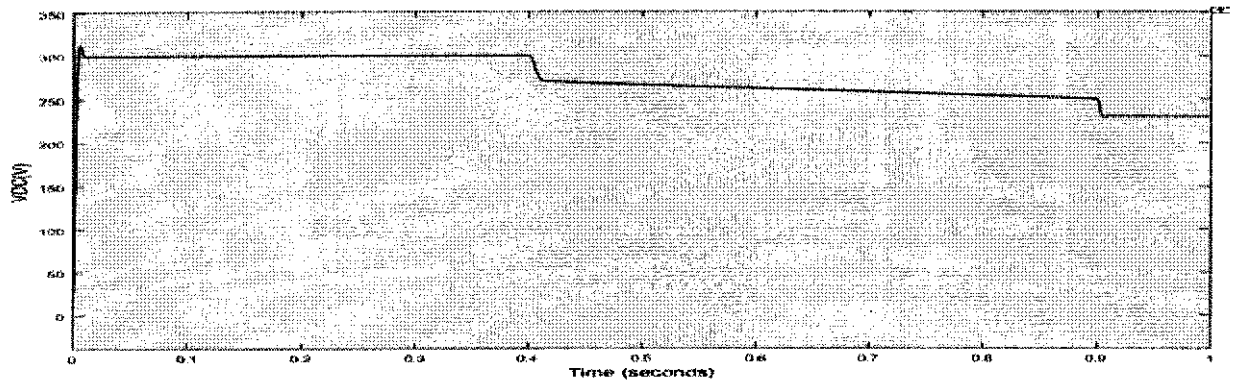

Figure 12: The DVR DC-side Voltage (VDC) during Zero Active Power Tracking Compensation with SFLA-PI Controller

The bottom trace of Fig 11 shows that the load was therefore fed with its rating power even during the deep sag period, which was a promising result. According to this technique, much lower real power was drawn from the DC-link capacitor, which resulted in relatively less energy being output for the instant compensation. Therefore, the decrease in DC-side voltage at the DC-link was not considerable, as seen in Fig 12, for further compensation. So, that we are using a wavelet technique as a supporting tool for SFLA-PI controller.

Simulink Diagram for Wavelet-PI Controller

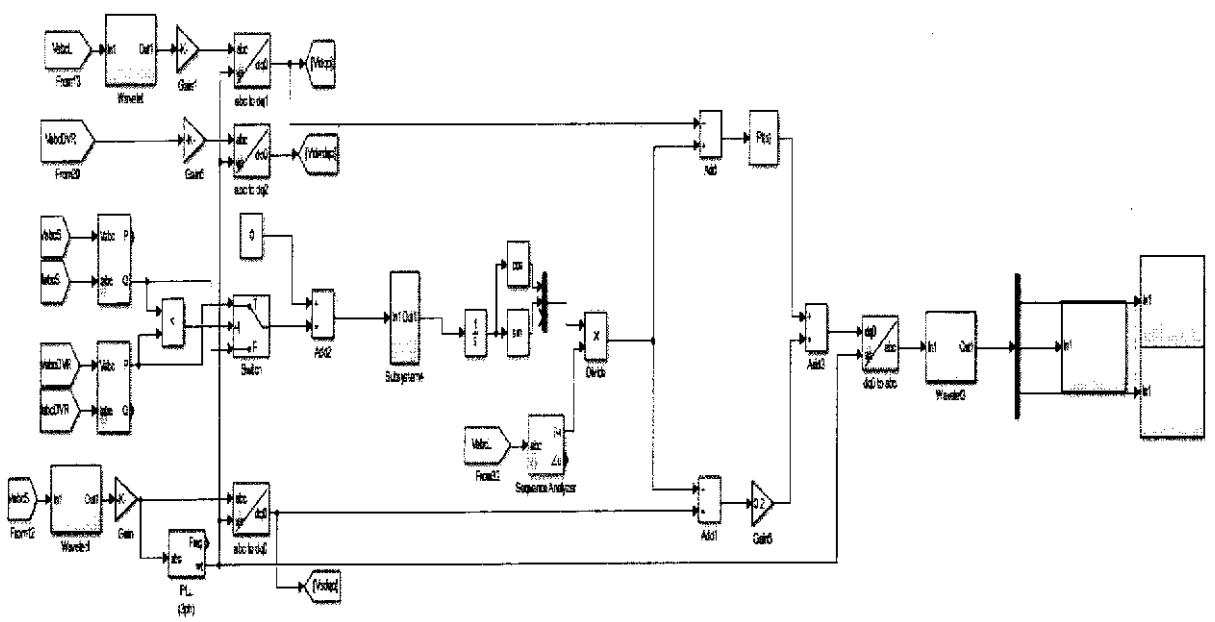

Figure 13: Simulink Diagram for WAVELET-PI Controller

In order to extend the compensation as described in the previous sections, the proposed technique of zero-real power tracking was implemented with wavelet along with PI controller the same system mentioned in subsection.

The same simulation procedures were conducted, and the results were captured, as shown in Figs 8-12. It is clear that different results were seen. The middle trace in Fig. 17 shows that by this technique, the DVR can certainly cover the entire voltage sag period, from the beginning at the time t = 0.4 s to the end at time t = 0.9 s. The associated quadrature voltages of both the DVR output and load point illustrated in Fig 14 were increased and given the relevant voltages leveled back to the desired value, as expected. It can be seen that the resulting three phase load voltage (the bottom waveform of Fig 16) remained constant during the demand and after the sag period.

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While observing the fig 18 it was able to discharge up to 270v. Here, we can see the improvement in dc side voltage.ie. The voltage discharged with the implementation of wavelet is less when compared with the voltage discharged only with PI controller. Moreover, the utilization of zero active power tracking technique will able to clear the fault not only the certain limits but also in extended level.

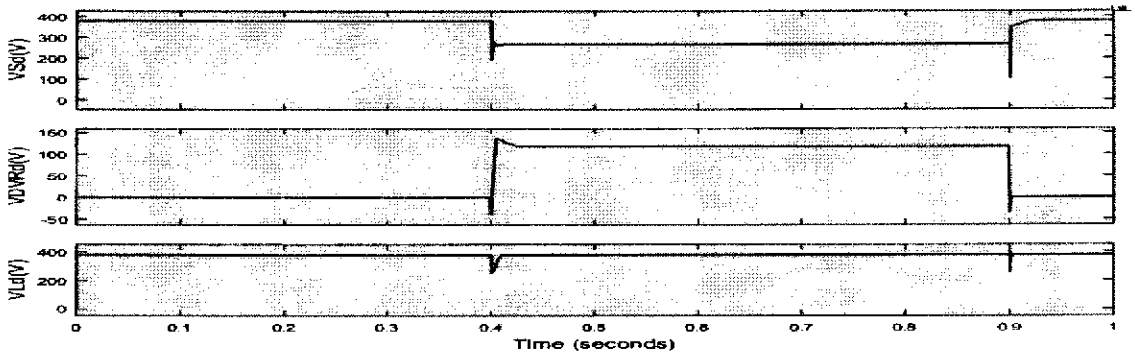

Figure 14: D-axis Voltages at the System (VSd), DVR (VDVRd), and Load (VLd) Zero Active Power Tracking Compensation with PI and Wavelet

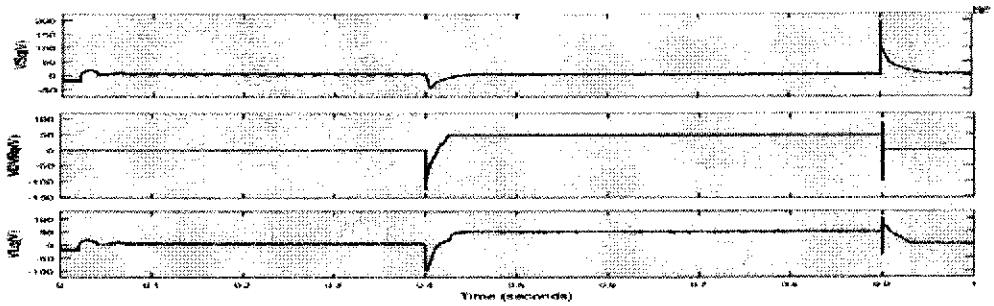

Figure 15: Q-axis Voltages at the System (VSq), DVR (VDVRq), and Load (VLq) Zero Active Power Tracking Compensation with PI and Wavelet

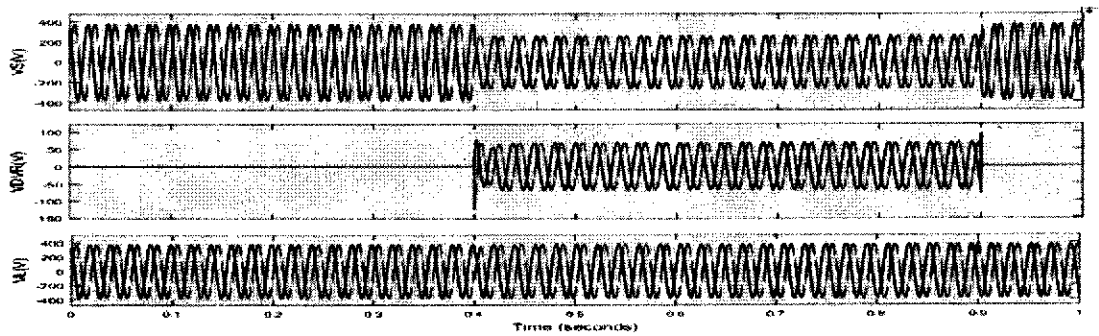

Figure 16: Three Phase Voltages at the System (VS), DVR (VDVR), and Load (VL) Zero Active Power Tracking Compensation with PI and Wavelet

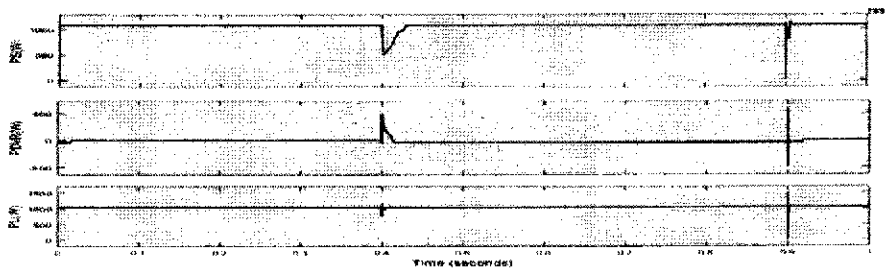

Figure 17: Real Power at Source (PS), the DVR (PDVR) and Load (PL) during Zero Active Power Tracking Compensation with PI & Wavelet

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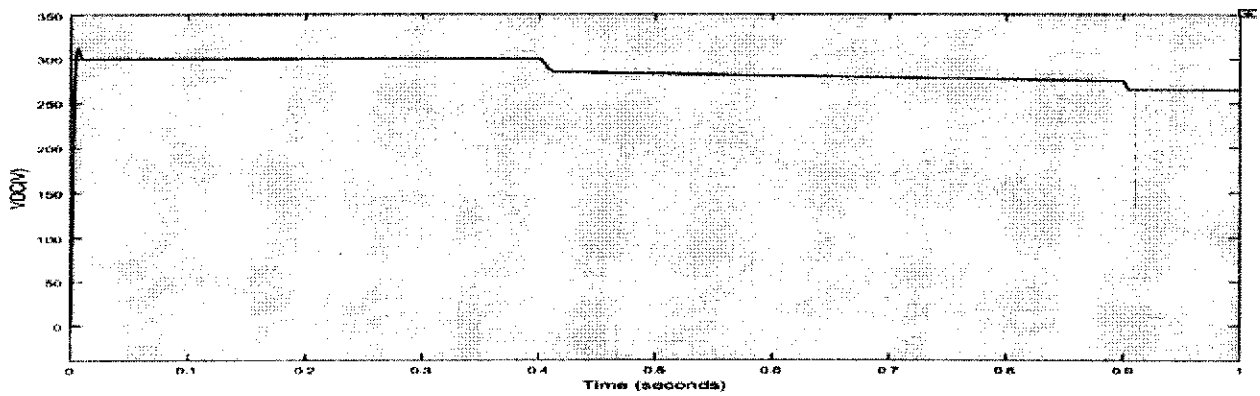

Figure 18: The DVR DC-side Voltage (VDC) during Zero Active Power Tracking Compensation with PI & Wavelet

Total Harmonic Distortion

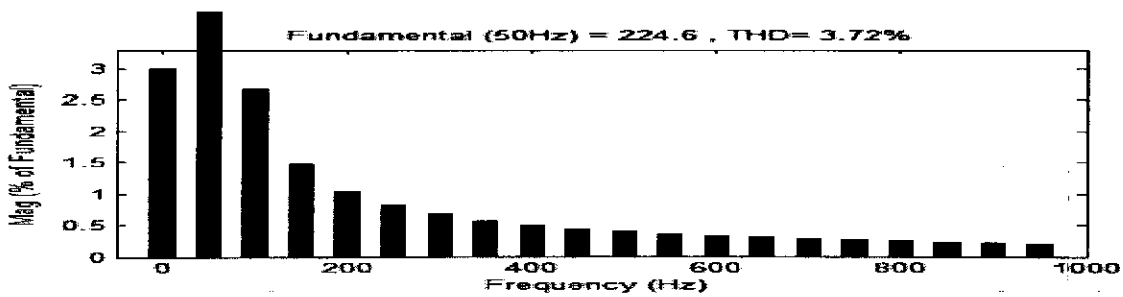

Figure 19: THD for Voltage with SFLA-PI Controller

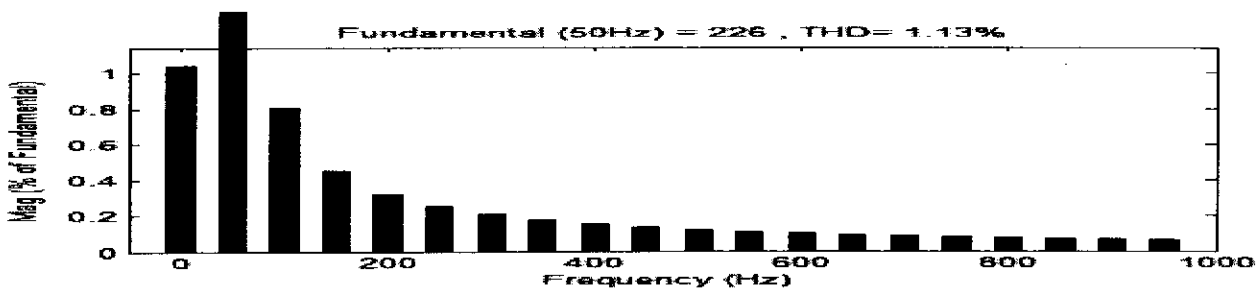

Figure 20: THD for Voltage with WAVELET-PI Controller

Figure 19 and 20 shows the outputs of the total harmonic distortions of the output voltage of the single area system with dynamic voltage restorer by considering best optimized values from SFLA-PI and WAVELET-PI.

Table 2: Comparison Between SFLA-PI & WAVELET-PI Controllers

S NO	NAME OF THE WAVEFORM	WITH SFLA-PI CONTROLLER				WITH WAVELET - PI CONTROLLER			
		Source voltage		DVR voltage	Load voltage	Source voltage		DVR voltage	Load voltage
		Supply voltage	Drop voltage			Supply voltage	Drop voltage		
1	D-Axis	380v	120v	110v	380v	380v	120v	50v	380v
2	Q-Axis	0v	0v	98v	98v	0v	0v	50v	50v
3	Three phase	380v	130v	130v	385v	380v	100v	70v	380v

VIII. Conclusion

From the simulation results illustrated in this paper that the proposed zero-real power tracking technique applied to DVR-based compensation can result in superior performance compared to the traditional in-phase technique. With the traditional in-phase technique, the compensation was performed and depended on the real power injected to

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the system. Then, more of the energy stored in the DC-link capacitor was utilized quickly, reaching its limitation within a shorter period. The compensation was eventually forced to stop before the entire voltage sag period was finished. When the compensation was conducted using the proposed technique, less energy was used for the converter basic switching process. The THD value says that Wavelet-PI is better than SFLA-PI controller.

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POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	003031
Date :	28/9/18.

Bill No. : KVB 3771 *Date* :

Head of Account : G. Santhanam

Contents of the bill : Advance for Poly test for Project Purpose.

Amount : 2000/-

G. Santhanam
Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Vocher No :

A/c ....

Date : 20/09/18

Paid To Mr. / Mrs. G. Santhanam

Rupees in words 2000 Two thousand only

to wards Polytech Fest at Visakapatnam

Rs. 2000/-

G. Santhanam

Signature

Entered by

Sd/- cheque on

Secretary & Correspondent

Santhanam Sir

Treasurer

Vijayawada,
19-9-2018.

To
The principal,
PSCMR 2nd shift polytechnic,
Kothapet,
Vijayawada.

Respected Sir,

I N. Kiran Kumar bearing pin no 16618M038 studying III DME in your Reputed institute. Sir, As I/e know state level polytech Fest is going to conducted on 22,23,24 of September 2018. For that state level, My project I/we selected.

For this Reason am going to Visakapatnam I/we the Above events are done. Sir, please grant me the Accomodation & Travelling charges and I am sure and I will Return to Vijayawada with grand success.

Kindly accept my Request,

Thanking you Sir,

Expendature & To and fro Charges
2000/- rupees only.

Forward to management
G. Sunitha
19/9/18

yours obediently,
N. Kiran Kumar.

(35)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002818
Date :	8/8/18

Bill No. : ..... EMB3771 ..... *Date* : .....

Head of Account : ..... V. Rajesh .....

Contents of the bill : ..... Advance for 2day technical workshop for EEE department .....

Amount : ..... 10000/- .....

Receiver's Signature | *Treasurer* | *Secretary & Correspond*

Date:28/07/2018,
Vijayawada.

To
The Principal,
PSCMRCET,
VIJAYAWADA.

Respected Sir,

Sub: Permission for conducting Two Day Technical workshop on "**Trouble shooting & Servicing of Electrical Drives and Appliances** "- reg.,

The Department of EEE is willing to conduct the Two Day Technical workshop on **"Trouble shooting & Servicing of Electrical Drives and Appliances",** this workshop will aim at identifying faults in electrical machines & appliances and also to service the faults, in order to enhance their practical exposure in the field of electrical engineering, kindly permit us to conduct the workshop on 17-08-2018 & 18-08-2018 and sanction the budget amount (list enclosed) of Rs 15800/- for smooth conduction of the above workshop.

Thanking you,

Yours Sincerely

RAJESH V
Co-Ordinator,
Department of EEE.

forwarded to Principal Sir for approval
28/7/18

3/8/18

28/7/16

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0366-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

DEPARTMENT OF ELECTRICAL AND ELCTRONICS ENGINEERING

BUDGET PROPOSAL FOR TWO DAY TECHNICAL WORKSHOP

Academic Year (2018-2019)

TOPIC: **Trouble shooting & Servicing of Electrical Drives and Appliances**

S. No	Particulars	Quantity	Amount in Rs
1	Certificates	180	1800
2	Snacks & Refreshments	200	2500
3	Flexies,Photos & Others		1500
4	Training Materials like gauge plate, Test Lamp, Section of cables, Graded Insulators		2000
5	Training Material to students	180	3000
6	Winding Machine, Choke winding machine, D.C Machine (Dismandled)		5000
TOTAL AMOUNT			15,800

Mr. V RAJESH

CO-ORDINATOR

28/7/18

Mr. Y.RAJENDRA BABU

HOD-EEE

(36)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002824
Date :	8/8/18

Bill No. : KVB 3771 C *Date* : .....

Head of Account : S. Manikanta

Contents of the bill : Travelling expenses for receiving the Award from Internshala at New Delhi purpose.

Amount : 20,331/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

Vocher No : Cheque A/c .....

Date : 8/8/2018 .....

Paid To Mr. / Mrs. S.MANIKANTA

Rupees in words Twenty thousand Three hundred & Thirty One Rupees only

to wards travelling Expenses incurred for receiving the Award from Internshala at New Delhi on 25/8/2018.

Rs. 20331=00

Signature

Entered by Secretary & Correspondent Treasurer

Tax Invoice

Invoice Details
Invoice No. : 1000000036424590
Invoice Date : 2018-08-08
PAN No. : AADCM5146R
GSTIN No. : 06AADCM5146R1ZZ
Service Category : Reservation services for air transportation.
SAC Code : 998551

Customer Details
Place of Supply: Haryana

This is not a valid E-Ticket for Travel. Please refer to attached E-Ticket for PNR, departure time, terminal information etc

Booked by	Booked ID	Booked Date
RAVURI VENKATA SUBBARAO (placements@pscmr.ac.in) (8977788844)	NF22695138211935	Wed Aug 08 11:31:34 IST 2018

Flight Details

AIR INDIA AI-468	VGA **Vijayawada**	DEL **Delhi**

Passengers:

01. RAVURI VENKATA SUBBARAO
02. KAMISETTY NAGESWARA RAO

Fare Details

Fare/Charges	Passenger 01	Passenger 02
Base Fare	4650.0	4650.0
Tax and Other Charges:		
Passenger Service Fee	245.0	245.0
Airline GST	236.0	236.0
Other Surcharge	70.0	70.0
Total Fare	5201.0	5201.0

Flight Details

AIR INDIA AI-467	DEL **Delhi**	VGA **Vijayawada**

Passengers:

01. RAVURI VENKATA SUBBARAO 02. KAMISETTY NAGESWARA RAO

Fare Details

Fare/Charges	Passenger 01	Passenger 02
Base Fare	4250.0	4250.0
Tax and Other Charges:		
Passenger Service Fee	154.0	154.0
Airline GST	216.0	216.0
Other Surcharge	82.0	82.0
Total Fare	4702.0	4702.0

***Total Fare (All Passenger):**	**INR 19806.0**
Donation Amount:	**INR 5.0**
Convenience Fee (a):	**INR 740.6800000000001**
E - Coupon Amount:	**- INR 300.0**
CGST @9% on (a):	**INR 39.66**
SGST @9% on (a):	**INR 39.66**
Grand Total:	**INR 20331.0**

*The credit, for GST charged by the Airline and included in the airfare, would be available against a separate GST invoice/e-ticket issued by the Airline.

- The amount received as donation will be used for the specified charitable causes. MakeMyTrip will donate the collected amount to MakeMyTrip Foundation (a public trust registered with charitable objects) or similar charitable organizations to help create a social impact.
- The contributions once made will not be refunded or cancelled.
- You voluntarily choose to contribute to the social cause and by proceeding to donate the money, you do so at own risk and expressly waive any and all claims, rights of action and/or remedies (under law or otherwise) that you may have against MakeMyTrip arising out of or in connection with the aforesaid transaction.
- No certificate under section 80G of the Income Tax Act, 1961 will be issued.
- By proceeding to donate the money, you understand and confirm that this donation is not from any foreign source as defined under Foreign Contribution Regulation Act, 2010.

Support Details

MakeMyTrip Address

18th Floor - Tower A,B and 19th Floor-Tower A,B,C
Building No. 5, DLF Cyber City, DLF Phase III
Gurgaon, Haryana 122002

Support

1-800-102-8747(Tollfree)
+91-124-4628747(Fixed Line)
https://supportz.makemytrip.com/login

Note: This is a computer generated invoice and does not require a signature/stamp. Please do not reply to this email. It has been sent from an email account that is not monitored.

Name MakeMyTrip (India) Private Limited

Registered Office	UG - 07, Front Side, TDI Shopping Mall, Rajouri Garden, New Delhi - 110027, India
Tel No.	91 124 439 5000
Fax No.	91 124 439 5000
Corporate Identity No.(CIN)	U63040DL2000PTC105210
Website Address	www.makemytrip.com

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, VIJAYAWADA - 1.

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002947
Date :	21/8/18

Bill No. : KVB 3771 Date : .....

Head of Account : K. Sudhakar

Contents of the bill : Advance towards the journey of New Delhi on 23/8/18 (AICTE) Interns -ip Award

Amount : 10,000/-

Receiver's Signature 21/8/18 Treasurer Secretary & Correspondent

To,

20. 8. 2018

The Principal Sir,
PSCMRCET,
VJA-1.

Sub: Request to sanction 10,000/- advance towards the Journey of New Delhi on 23.8.18 - Reg.

Respected Sir,

I Mr. K. Sudhakar, working as Associate professor of CSE, travelling to New Delhi towards Review the AICTE-INTERNSALA Award on 25.08.2018.

I am requesting you to sanction the above said amount towards Travelling & Hotel Stay during 23.8.18 to 25.8.18.

Thanking you Sir,

Forwarded to Principal Sir
AVP

Yours sincerely,

SBI

Reference Number	CRA1101132
Debit Account Number	00000030479170474
Debit Branch	CHITTINAGAR
Remark	
Transaction Date	21-Aug-2018
Credit to beneficiary	INR 3,26,450.00
Commission Amount	INR 5.90
Transaction Type	
Debit Status	Success
Reason	Completed Successfully
Credit Status	InProcess
UTR Number	SBINR12018082100045978

Credit Account Details

Account No.	Bank	Branch	Price (in INR)
1414172000003771	PSCMRCET	VIJAYAWADA I TOWN	3,26,450.00

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P.)

Department of Mechanical Engineering

Expenditure

Requisition No: PSCMR02/2018-19 **18/8/18**

Requisition No	Department / Laboratory	Recurring / Non Recurring	Details of the Item	Amount Rs.
PSCMR / 2018-19 / 2	College	Non Recurring	**Gate Material:**	
			Civil Engineering	15,500/-
			CSE	14,000/-
			ECE	15,500/-
			EEE	15,500/-
			Mechanical Engineering	15,500/-

Advance

PSS 21/8/18

Head of the Department

21/8/18

Received on 1/9/18.

MADE EASY Publications

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Address: 44-A/1,Kalu Sarai,Near Hauz Khas Metro Station,New Delhi-110016

Mobile : 011-45124612 **Email :** infodelhi@madeeasy.in

RECEIPT VOUCHER

Civil.

Reverse Charge:	Nil	**Place of Supply:**	Delhi
Voucher No:	DL19MEPORV012802	**State:**	Delhi
Voucher Date:	14 Aug 2018	**State Code:**	07

Details of Receiver

Roll Number :	CECC19DL1087	**Stream :**	Civil Engineering
Student Name :	sudhakar	**Venue :**	Kalu Sarai, Delhi
State :	Andhra Pradesh	**Student Address :**	7-3-6/1,, Kothapeta, Vijayawada, Krishna dist, Pin-520001
State Code :	28		
Exam :	ESE GATE & PSUs 2019		

Student Photo :

Name of Service/Product	HSN/SAC	Taxable Value	CGST		SGST		IGST		Advance Received
			Rate (%)	Amt.	Rate (%)	Amt.	Rate (%)	Amt.	
Books Set	4901	15500.00	0.00	0.00	0.00	0.00	0.00	0.00	15500.00
Total		**15500.00**		**0.00**		**0.00**		**0.00**	**15500.00**

Mode of Payment : Online:15500.00(204201472)

Remarks		
	Total Amount Before Tax	**15500.00**
	Add:CGST	0.00
	Add:SGST	0.00
	Add:IGST	0.00
	Tax Amount : GST	**0.00**
	Total Amount After Tax	**15500.00**
• *In case of any tax levied by the government on the books, it shall be recoverable from the enrolled students on demand.	GST Payable on Reverse Charge	Nil
	Authorized Signatory & Seal	

MADE EASY Publications

GSTIN - 0NOTAPPLICABLE0

Address: 44-A/1,Kalu Sarai,Near Hauz Khas Metro Station,New Delhi-110016

Mobile : 011-45124612 **Email :** infodelhi@madeeasy.in

CSE

RECEIPT VOUCHER

Duplicate

Reverse Charge:	Nil	**Place of Supply:**	Delhi
Voucher No:	DL19MEPORV012855	**State:**	Delhi
Voucher Date:	16 Aug 2018	**State Code:**	07

Details of Receiver

Roll Number :	CSCP19DL775	**Stream :**	Computer Science Engineering
Student Name :	BABU RAJENDRA PRASAD SINGOTHU	**Venue :**	Kalu Sarai, Delhi
State :	Andhra Pradesh	**Student Address :**	
State Code :	28	POTTI SRIRAMULU ENGINEERING COLLEGE, RAGHAVA REDDY STREET, KOTHA PET, VIJAYAWADA, Vijayawada, Pin-520001	
Exam :	GATE & PSUs 2019		

Student Photo :

Name of Service/Product	HSN/SAC	Taxable Value	CGST		SGST		IGST		Advance Received
			Rate (%)	Amt.	Rate (%)	Amt.	Rate (%)	Amt.	
Books Set	4901	14000.00	0.00	0.00	0.00	0.00	0.00	0.00	14000.00
Total		**14000.00**		**0.00**		**0.00**		**0.00**	**14000.00**

Mode of Payment : Online:14000.00(204406493)

Remarks

Total Amount Before Tax	**14000.00**
Add:CGST	0.00
Add:SGST	0.00
Add:IGST	0.00
Tax Amount : GST	**0.00**
Total Amount After Tax	**14000.00**
GST Payable on Reverse Charge	Nil

Authorized Signatory & Seal

* *In case of any tax levied by the government on the books, it shall be recoverable from the enrolled students on demand.

MADE EASY Publications

GSTIN - 0NOTAPPLICABLE0

Address: 44-A/1,Kalu Sarai,Near Hauz Khas Metro Station,New Delhi-110016

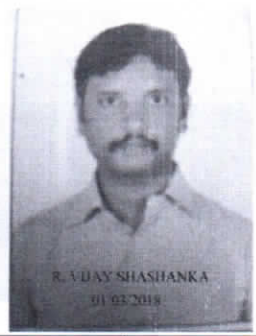
Mobile : 011-45124612 **Email :** infodelhi@madeeasy.in

EEE

RECEIPT VOUCHER

Reverse Charge:	Nil	**Place of Supply:**	Delhi
Voucher No:	DL19MEPORV012788	**State:**	Delhi
Voucher Date:	14 Aug 2018	**State Code:**	07

Details of Receiver

Roll Number :	ECCC19DL856	**Stream :**	Electronics Engineering	**Student Photo :**
Student Name :	vijay shashanka Reputi	**Venue :**	Kalu Sarai, Delhi	
State :	Andhra Pradesh	**Student Address :**		
State Code :	28	sf6, gollapudi, vijayawada, Krishna, Pin-521225		
Exam :	ESE GATE & PSUs 2019			

Name of Service/Product	HSN/SAC	Taxable Value	CGST		SGST		IGST		Advance Received
			Rate (%)	Amt.	Rate (%)	Amt.	Rate (%)	Amt.	
Books Set	4901	15500.00	0.00	0.00	0.00	0.00	0.00	0.00	15500.00
Total		**15500.00**		**0.00**		**0.00**		**0.00**	**15500.00**

Mode of Payment : Online:15500.00(204167914)

Remarks		
	Total Amount Before Tax	**15500.00**
	Add:CGST	0.00
	Add:SGST	0.00
	Add:IGST	0.00
	Tax Amount : GST	**0.00**
	Total Amount After Tax	**15500.00**
• *In case of any tax levied by the government on the books, it shall be recoverable from the enrolled students on demand.	GST Payable on Reverse Charge	Nil
	Authorized Signatory & Seal	

17/8/18

MADE EASY Publications **GSTIN - 0NOTAPPLICABLE0**

Address: 44-A/1,Kalu Sarai,Near Hauz Khas Metro Station,New Delhi-110016

Mobile : 011-45124612 **Email :** infodelhi@madeeasy.in

EEG.

RECEIPT VOUCHER

Reverse Charge:	Nil	**Place of Supply:**	Delhi
Voucher No:	DL19MEPORV012881	**State:**	Delhi
Voucher Date:	17 Aug 2018	**State Code:**	07

Details of Receiver

Roll Number :	EECC19DL934	**Stream :**	Electrical,Engineering
Student Name :	PAVULURI MANOJ KUMAR	**Venue :**	Kalu Sarai, Delhi
State :	Andhra Pradesh	**Student Address :**	
State Code :	28	POTTI SRI RAMULU ENGINEERING COLLEGE, DNO:7-3-6/1, RAGHAVAREDDY STREET, KOTHAPET, VIJAYAWADA, KRISHNA, Pin-520001	
Exam :	ESE GATE & PSUs 2019		

Student Photo :

Name of Service/Product	HSN/SAC	Taxable Value	CGST		SGST		IGST		Advance Received
			Rate (%)	Amt.	Rate (%)	Amt.	Rate (%)	Amt.	
Books Set	4901	15500.00	0.00	0.00	0.00	0.00	0.00	0.00	15500.00
Total		**15500.00**		**0.00**		**0.00**		**0.00**	**15500.00**

Mode of Payment : Online:15500.00(204540502)

Remarks

Total Amount Before Tax	**15500.00**
Add:CGST	0.00
Add:SGST	0.00
Add:IGST	0.00
Tax Amount : GST	**0.00**
Total Amount After Tax	**15500.00**
GST Payable on Reverse Charge	Nil

Authorized Signatory & Seal

* *In case of any tax levied by the government on the books, it shall be recoverable from the enrolled students on demand.

MADE EASY Publications

GSTIN - 0NOTAPPLICABLE0

Address: 44-A/1,Kalu Sarai,Near Hauz Khas Metro Station,New Delhi-110016

Mobile : 011-45124612 **Email :** infodelhi@madeeasy.in

Mech

RECEIPT VOUCHER

Reverse Charge:	Nil	**Place of Supply:**	Delhi
Voucher No:	DL19MEPORV012791	**State:**	Delhi
Voucher Date:	14 Aug 2018	**State Code:**	07

Details of Receiver

Roll Number :	MECC19DL1150	**Stream :**	Mechanical Engineering	**Student Photo :**
Student Name :	Dudla Kishore babau	**Venue :**	Kalu Sarai, Delhi	
State :	Andhra Pradesh	**Student Address :**		
State Code :	28	19-2-15 kamsalipet, Near ranga, Vijayawada, Krishna, Pin-520001		
Exam :	ESE GATE & PSUs 2019			

Name of Service/Product	HSN/SAC	Taxable Value	CGST		SGST		IGST		Advance Received
			Rate (%)	Amt.	Rate (%)	Amt.	Rate (%)	Amt.	
E Set	4901	15500.00	0.00	0.00	0.00	0.00	0.00	0.00	15500.00
Total		**15500.00**		**0.00**		**0.00**		**0.00**	**15500.00**

Mode of Payment : Online:15500.00(204175374)

Remarks		
	Total Amount Before Tax	**15500.00**
	Add:CGST	0.00
	Add:SGST	0.00
	Add:IGST	0.00
	Tax Amount : GST	**0.00**
	Total Amount After Tax	**15500.00**
• *In case of any tax levied by the government on the books, it shall be recoverable from the enrolled students on demand.	GST Payable on Reverse Charge	Nil
	Authorized Signatory & Seal	

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

38

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002855
Date :	17/8/12

Bill No. : KVB 377 / *Date* : .....

Head of Account : Yourself.

Contents of the bill : ~~Mech~~ Gate online Tests proposal.

.....

Amount : 875/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P.)

~~**Requisition**~~ - Expenses

Requisition No: PSCMR04/2018-19 **16/8/18**

Requisition No	Department / Laboratory	Recurring / Non Recurring	Details of the Item	Amount Rs.
PSCMR / 2018-19 / 4	Respective Departments	Non Recurring	**Gate Online Tests:**	
			Civil Engineering	
			Made Easy	944.00
			Wooe	799.00
			CSE	
			Made Easy	944.00
			Wooe	799.00
			ECE	
			Made Easy	944.00
			Wooe	799.00
			EEE	
			Made Easy	944.00
			Wooe	799.00
			Mechanical Engineering	
			Made Easy	944.00
			Wooe	799.00
			Total	**8,715.00**

PSS 16/8/18

Head of the Department (Mechanical)

16/8/18

Subbarao

Gmail

vinay sudhakar <vinaysdhkr2@gmail.com>

Package successfully bought

1 message

MADEEASY <queryots@madeeasy.in>
To: vinaysdhkr2@gmail.com

Thu, Aug 9, 2018 at 12:21 PM

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Civil

MADE EASY Education Pvt Ltd
Address : 44-A/1, Kalu Sarai, Near Hauz Khas Metro Station, New Delhi
Mobile : 9818098817
Email ID : infodelhi@madeeasy.in

GSTIN - 07AAFCM6548P1ZR

MADE EASY: GATE-2019 Online Test Series

TAX INVOICE

Invoice No. : MEOTS19-00041960
Invoice Date : 2018-08-09
State : Andhra Pradesh
State Code : 2

Details of Receiver | Billed to

Student Name : m sudhakar
State : Andhra Pradesh
Statecode : 2
Course : GATE
Stream : Civil Engineering (CE)
Mobile Numer : 9494888976
Email Id : vinaysdhkr2@gmail.com
DOB : 09-01-1992
Father Name : m issac

Student Address :
vijayawada,
PIN-520015

Student Photo & Signature

Sr No	Name of Service/Product	HSN/ SAC	Amount	Less: Discount(₹)	Taxable value(₹)	CGST		SGST		IGST		Total(₹)
						Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	
1.	GATE-2019 Online Test Series	999293	800		800	9	72	9	72	0.00	0.00	944

Mode Of Payment :	SBIB	Transaction Id :	MADEEASY19_81392	Order ID:	81392		

Remarks	Total Amount Before Tax	₹ 800
This is a computer generated invoice	Add: CGST	₹ 72
	Add: SGST	₹ 72
	Add: IGST	₹ 0.00
	Tax Amount: GST	₹ 144
Note : Fee is non refundable.	Total Amount After Tax	₹ 944

SBI

civil

Account Name	: Mr. MODUGU SUDHAKAR
Address	: ROOM NO:A5 09,ULTRA MEGA HOSTEL,1.8K
	NIT,WARANGAL-506004
	Warangal
Date	: 9 Aug 2018
Account Number	: 00000062354091960
Account Description	: SBNCHQ-GEN-PUB-IND-NONRURAL
Branch	: REC WARANGAL
Drawing Power	: 0.00
Interest Rate(% p.a.)	: 3.5
MOD Balance	: 0.00
CIF No.	: 72177421488
IFS Code	: SBIN0020149
MICR Code	: 506002030
Nomination Registered	: No
Balance as on 6 Aug 2018	: 1,426.44

Account Statement from 6 Aug 2018 to 7 Aug 2018

Txn Date	Value Date	Description	Ref No./Cheque No.	Debit	Credit	Balance
6 Aug 2018	6 Aug 2018	BY TRANSFER-INB Deposit / Investment-	ITS3210611 TRANSFER FROM 31765445167		12,000.00	13,426.44
6 Aug 2018	6 Aug 2018	TO TRANSFER-UPI/DR/821818273674/TADIKAMA/SBIN/mohandurga-	TRANSFER TO 4898805162091	4,400.00		9,026.44
6 Aug 2018	6 Aug 2018	TO TRANSFER-UPI/DR/821818380092/KRISHNA /KVBL/krishna9fe-	TRANSFER TO 4897659162094	2,000.00		7,026.44
7 Aug 2018	7 Aug 2018	TO TRANSFER-INB PayU Payments Private Lim-	7263762767IGAECQWDQ0 TRANSFER TO 459	799.00		6,227.44

Please do not share your ATM, Debit/Credit card number, PIN and OTP with anyone over mail, SMS, phone call or any other media. Bank never asks for such information.

**This is a computer generated statement and does not require a signature.

CSE

MADE EASY
India's Best Institute for IES, GATE & PSUs

MADE EASY Education Pvt Ltd
Address : 44-A/1, Kalu Sarai, Near Hauz Khas Metro Station, New Delhi
Mobile : 9818098817
Email ID : infodelhi@madeeasy.in

GSTIN - 07AAFCM6548P1ZR

MADE EASY: GATE-2019 Online Test Series

TAX INVOICE

Invoice No. : MEOTS19-00040708
Invoice Date : 2018-08-07
State : Andhra Pradesh
State Code : 2

Details of Receiver | Billed to

Student Name : BABU RAJENDRA PRASAD SINGOTHU
State : Andhra Pradesh
Statecode : 2
Course : GATE
Stream : Computer Science Engineering(CS)
Mobile Numer : 9492976409
Email Id : rajendra11g@gmail.com
DOB : 11-07-1985
Father Name : VENKATESWARA RAO

Student Address :
PSCMRCET,kothapet,-
PIN-520001

Student Photo & Signature

S.B.P Prasad

Sr No	Name of Service/Product	HSN/ SAC	Amount	Less: Discount(₹)	Taxable value(₹)	CGST		SGST		IGST		Total(₹)
						Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	
1.	GATE-2019 Online Test Series	999293	800		800	9	72	9	72	0.00	0.00	944

Mode Of Payment :	NB	Transaction Id :	MADEEASYPT19_79128	Order ID:	79128		

Remarks	Total Amount Before Tax	₹ 800
This is a computer generated invoice	Add: CGST	₹ 72
	Add: SGST	₹ 72
	Add: IGST	₹ 0.00
	Tax Amount: GST	₹ 144
Note : Fee is non refundable.	Total Amount After Tax	₹ 944

Made Easy_ ECE

PayUmoney

Dear Shashank

Thank you for paying with PayUmoney. Your Payment has been successfully processed.

Merchant Name: MADE EASY Order Amount: Rs 944.00

Payment ID: 203530264

Merchant Order ID: MADEEASY19_81374

Payment Summary	Amount
DEBIT CARD	Rs 951.41
Amount Paid	**Rs 951.41**

Payee Info

Merchant Transaction Identifier

MADEEASY19_81374

Your receipt for this payment is attached. You can view the receipt and transaction details anytime from PayUmoney dashboard.

View Receipt

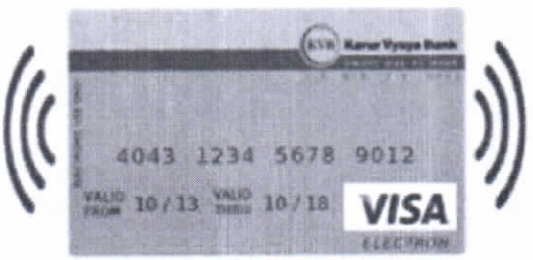
ANY ISSUE WITH YOUR PURCHASE?

W00e _EC6

KVB 100 YEARS OF SMART BANKING

KVB Karur Vysya Bank

Transaction Alert !!!



Dear Customer,

This is to inform you that,

Your Card No. XX5883 Debited INR 799.00 on 09-Aug-18 11:36:56 * PAYU MONEY/0124305 * Avl Bal is INR 11,376.20

Note: If the transaction is not done by you, please contact our Helpline at the earliest.

Gmail

MANOJ KUMAR <eeepscmr02@gmail.com>

Package successfully bought

1 message

EEE

MADEEASY <queryots@madeeasy.in>
To: eeepscmr02@gmail.com

Thu, Aug 9, 2018 at 12:15 PM

MADE EASY
India's Best Institute for IES, GATE & PSUs

MADE EASY Education Pvt Ltd
Address : 44-A/1, Kalu Sarai, Near Hauz Khas Metro Station, New Delhi
Mobile : 9818098817
Email ID : infodelhi@madeeasy.in

GSTIN - 07AAFCM6548P1ZR

MADE EASY: GATE-2019 Online Test Series

TAX INVOICE

Invoice No. : MEOTS19-00041951
Invoice Date : 2018-08-09
State : Andhra Pradesh
State Code : 2

Details of Receiver | Billed to

Student Name : PAVULURI MANOJ KUMAR
State : Andhra Pradesh
Statecode : 2
Course : GATE
Stream : Electrical Engineering (EE)
Mobile Numer : 8688883634
Email Id : eeepscmr02@gmail.com
DOB : 22-05-1987
Father Name : NARASHIMHULU

Student Address :
PSCMRCET,
PIN-520001

Student Photo & Signature

Sr No	Name of Service/Product	HSN/ SAC	Amount	Less: Discount(₹)	Taxable value(₹)	CGST		SGST		IGST		Total(₹)
						Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	
1.	GATE-2019 Online Test Series	999293	800		800	9	72	9	72	0.00	0.00	944

Mode Of Payment :	CC	Transaction Id :	MADEEASY19_81381	Order ID:	81381		

Remarks		
This is a computer generated invoice	Total Amount Before Tax	₹ 800
	Add: CGST	₹ 72
	Add: SGST	₹ 72
	Add: IGST	₹ 0.00
	Tax Amount: GST	₹ 144
Note : Fee is non refundable.	Total Amount After Tax	₹ 944

Payment Details

EEE

Merchant Details	Customer Details
Name: Abhishek Narwariya	**Name:** PAVULURI MANOJ KUMAR
Source: thirdparty	**Mobile Number:** +91 8688883634
Address: TANSEN NAGAR, Madhya Pradesh, Gwalior 474002,	**Email:** pmanoj249@gmail.com
	Address:

Payee Information

Payment Description	Lifetime Enroll-EE
Merchant Transaction Indentifier	LIFE2019EE48450

Payment Breakup

Convenience Fee	₹ 0.00
GST	₹ 0.00

Payment History

Paid by: Pavuluri
Paid to: Abhishek Narwariya
Payment ID: 203300469

Status: Payment Released Successfully
Suborder ID: LIFE2019EE48450

Date	Action	Status
2018-08-07 16:37:56	Not Started	Not Started
2018-08-07 16:38:47	Transaction Initiated	Initiated
2018-08-07 16:39:12	Payment Released Successfully	Payment Released Successfully

Transaction Details

Transaction Added On	Source Reference ID	Source	Payment Mode	Amount
2018-08-07 16:38:47	7264013451	PAYU	CC	799.00

Back

Gmail

Kishore Chinna <kishorechinna331@gmail.com>

Package successfully bought

1 message

MADEEASY <queryots@madeeasy.in>
To: kishorechinna331@gmail.com

Fri, Aug 3, 2018 at 4:29 PM

MADE EASY
India's Best Institute for IES, GATE & PSUs

MADE EASY Education Pvt Ltd
Address : 44-A/1, Kalu Sarai, Near Hauz Khas Metro Station, New Delhi
Mobile : 9818098817
Email ID : infodelhi@madeeasy.in

GSTIN - 07AAFCM6548P1ZR

MADE EASY: GATE-2019 Online Test Series

TAX INVOICE

Invoice No. : MEOTS19-00038047
Invoice Date : 2018-08-03
State : Andhra Pradesh
State Code : 2

Details of Receiver | Billed to

Student Name : D Kishore babu
State : Andhra Pradesh
Statecode : 2
Course : GATE
Stream : Mechanical Engineering (ME)
Mobile Numer : 9676653137
Email Id : kishorechinna331@gmail.com
DOB : 25-03-1991
Father Name : D venkaiah

Student Address :
10-2-15 kamsali pet,
PIN-520001

Student Photo & Signature

Sr No	Name of Service/Product	HSN/ SAC	Amount	Less: Discount(₹)	Taxable value(₹)	CGST		SGST		IGST		Total(₹)
						Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	Rate(%)	Amt.(₹)	
1.	GATE-2019 Online Test Series	999293	800		800	9	72	9	72	0.00	0.00	944

Mode Of Payment :	DC	Transaction Id :	MADEEASYPT19_74221	Order ID:	74221		

Remarks	Total Amount Before Tax	₹ 800
This is a computer generated invoice	Add: CGST	₹ 72
	Add: SGST	₹ 72
	Add: IGST	₹ 0.00
	Tax Amount: GST	**₹ 144**
Note : Fee is non refundable.	**Total Amount After Tax**	**₹ 944**

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

Cheq. No.	002944
Date :	18/8/2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : UTL Technologies Limited

Contents of the bill : Expenditure for 3 days workshop on 5G mobile technologies for ECE department

Amount : 20,000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

Vijayawada,

16/08/2018.

From,
Dr. M. Ranga Rao,
Professor
ECE Department,
PSCMR College of Engineering and Technology,
Vijayawada-1.

To
The Secretary & Correspondent,
PSCMR College of Engineering and Technology,
Vijayawada-1.

Respected Sir,

(Through proper channel)

Sub: Requisition for sanction of an amount of Rs.48,500/- for "3 **day Workshop on 5G Mobile Technologies"** ---- Regd.

On behalf of Communication Research Group from ECE department it is proposed to conduct a "3 **Day Workshop on 5G Mobile Technologies"** from 24-08-2018 to 26-08-2018. The participants would be from IV B.Tech ECE and outside participants from other engineering colleges. **Sri. AT. Kishore** from UTL Technologies Ltd, Bengaluru has expressed his willingness to conduct the program and deliver the lecture. After completion of workshop an online examination would be conducted by M/S UTL Technologies Ltd and provide a certificate to the qualified students on payment of Rs. 150/- per head. It is also proposed to collect Rs. 200/- from the external students which includes working lunch for them. The amount collected from the students would deposited with the College.

The anticipated expenditure towards this event works out to Rs.48500/- (Rupees forty eight thousand and five hundred only).The details of the anticipated expenditure are herewith enclosed for ready reference. The proposal may be considered and necessary approval may be accorded at the earliest for making necessary arrangements.

Thanking You,

Yours Sincerely,

(Dr. M. Ranga Rao)

Forwarded
16/8/18

20,000 - 18/8/18 - cheque - 002944
5,000 - 23/8/18 - cash

known
17/8/18

5G Technologies, Impact on OEM/ODM - CSP: India's Deployments & NB-IoT 2018

Expenditure details for "3 days workshop on 5G mobile technologies"

SlNo	Details of expenditure	Amount (Rs)
1	Course fee payable to M/S UTL Technologies, Bengaluru (Cheque/DD)	20000
2	Honorarium to Prof. AT Kishore, UTL for conducting program for faculty on research activities (Cash payment)	10000
3	Local transportation charges for the guest for 3 days	2000
4	Expenditure towards snacks and food for the guest	4500
5	Accommodation to the guest*	5000
6	Banner expenditure	800
7	Refeshments to the internal and external participants and staff/ guest	2500
8	Expenditure towards the lunch for the external participants (@Rs. 50 for 50 Students)	2500
9	Miscellaneous	1200
	Total	**48500**

In case guest house is not available

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTUK, Kakinada
Sponsored by. SKPVV Hindu High Schools Committee, Estd : 1906

Date : 16th Aug 2018

To
UTL Technologies Limited,
NO. 19/6, Ashokpuram School Road, Industrial suburb
Yeshwanthpur, Bangalore – 560022

Sub: work order for value added technical Training

Dear sir,

We are herewith placing the work order on UTL Technologies Limited for the value added technical Training in Embedded Systems technology for the kind notice and execution. The program description, No. of participants and the commercials are tabulated below

Sl No	Course	No. of Modules	No. of Students	Fee per day	No. of Days	GST @18%	Grand total
1	Workshop on 5G technology	1	60	Rs. 20,000/-	1	Inclusive	Rs. 20,000/-
		Total					Rs. 20,000/-

Amount in words: Rupees Twenty Thousand Only

Terms:

1. College will provide the necessary infrastructure to conduct the training. Course specific hardware and software to be provided by UTL Technologies .
2. Participation certificates to be issued to all the successful candidates.
3. To college will pay an additional amount of Rs. 50/- per certificate as handling charges
4. 100% of the fee will be paid on completion of the workshop

Regards

Principal

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001

ok, by cheque
Subbarao
16/8/18

D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001, A.P.
Voice : 0866-2423442, 9177777855, Fax : 0866-2423443, E-Mail : principal@pscmr.ac.in, Website : www.pscmr.ac.in

Gmail

Ranga Rao <prof.mrrao@gmail.com>

Fw: RE: Intimation of 5G Technlogy workshop by A T Kishore at our College-Reg.

1 message

lakshminarayana jammula <jln_9976@yahoo.com> Thu, Aug 16, 2018 at 9:40 AM
To: "M. Ranga Rao" <prof.mrrao@gmail.com>, Haribabuprasad Damarla <dharibabuprasad@gmail.com>

Sir,
PFA

Yours Sincerely
Dr.J.Lakshmi Narayana
Professor & Head of ECE
PSCMRCET
Mobile:7893173344

--- Forwarded message -----
From: Mahesh Gummaraju <head.cls@utltechnologies.com>
To: lakshminarayana jammula <jln_9976@yahoo.com>
Cc: Kishore <kishore@utltechnologies.com>; Srinivas Raju <srinivasraju@utltechnologies.com>; Selva Kumar <finance@utltechnologies.com>; Athul Anand <pc.corp@utltechnologies.com>
Sent: Monday, 13 August, 2018, 6:03:36 PM IST
Subject: RE: Intimation of 5G Technlogy workshop by A T Kishore at our College-Reg.

Respected Sir,

Greetings from UTL Technologies!

Thank you very much for confirming the workshop on 5G Technology. We are also very delighted to work with an esteemed institution like PSCMRCET.

Request you kindly to raise a work order to get the necessary internal approvals and make travel arrangements for Mr. Kishore. The fee for this program can be handed over to Mr. Kishore on completion of the programs. The cheque should be prepared favouring UTL Technologies Limited, Bangalore.

Please do let us know if you need any further information from us

Thanks and best regards

Mahesh Gummaraju | Head – Campus Learning Solutions | UTL Technologies Ltd | IT Services & Training |

No 19/6, Ashokpuram School Road, Industrial Suburb, Yeshwanthpur, Bangalore. | www.utltraining.com | Ph No: +91 80 23472171 / 23472172 Mobile: +91 9513761425

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POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

C

Cheq. No.	002804
Date :	1/9/18

Bill No. : 3771 *Date* : .....

Head of Account : H-Bots Robotics Pvt Ltd

Contents of the bill : HW Equipment

.....

Amount : ₹90,000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

H-BOTS

INVOICE

Vasu Heights, Plot No.
#91,92,93, Lumbini Avenue,
Gachibowli, Hyderabad,
Telangana - 500032 Phone:
040-29706245
info@h-bots.com

Date August 2, 2018
Invoice # HI18-0250

Bill To:

Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering and Technology (PSCMRCET), NO. 37AABAS1653D1ZR
7-3-6/1, Raghavareddy Street,
Kothapeta, Vijayawada,
Andhra Pradesh – 520001
Phone: 0866-2423442
Mail Id: principal@pscmr.ac.in

S.No.	Description	Amount	Offer Applied	Offered Amount
1	Lab Package H-Labs Pro	INR 15,00,000.00	INR 10,00,000.00	INR 500,000.00
2	Amount Payable			INR 500,000.00
			GST 18%	**INR 90,000.00**

Amount payable in words: Five Lakhs, Ninety Thousands Rupees Only.

Total (Inclusive of GST) INR 590,000.00

GSTIN: 36AAECH1637F1ZT
Payment shall be made to:
Account Name: H-Bots Robotics Pvt. Ltd
Account No.: 236305500262
Bank Name: ICICI Bank
IFSC: ICIC0002363

P.S.V.P.D

H-BOTS ROBOTICS PVT. LTD. Hyderabad

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

91

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002325
Date	7/6/18

Bill No. : KNB Date : .....

Head of Account : Dr. B.G. Barki

Contents of the Bill : Remuneration to the expert d the FDP

5 days Program

Amount : 50,000/-

T. Siva Gopal

Receivers Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

06-06-18

From:
Dr. P.S. Srinivas
HOD-Mech
PSCMRCET
Vijayawada

To:
The Secretary & Correspondent
PSCMRCET
Vijayawada

Sir,

Sub: Remuneration to the Expert of the FDP. -Reg

We are organizing a 5 Day faculty development program in our college. We have to pay the remuneration to the expert of the program Dr. B.G. Barki, kindly give necessary instructions to the concerned to arrange a cheque for Rs. 50,000/- (Fifty thousand rupees only) in the name of **B.G. Barki**.

Thank you Sir,

Yours faithfully

PSS Varma 6/6/18
Dr. P.S. Srinivas

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POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:

BANK BILL DESCRIPTION

placement 4 C

Cheq. No.	002345
Date :	22/06/18

Bill No. : KVB3771 *Date* : .....

Head of Account : Your Self DD

Contents of the bill : Renewal of Membership for API IA Purposes. 1 year

Amount : 10,000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

From

S. MANIKANTA
Training & Placement Officer
PSCMRCET
Vijayawada - 1

To

The Principal
PSCMRCET.

Respected Sir,

Sub:- Request to arrange for a Demand Draft for Rs 10000=00 towards Renewal of Membership for APITA - Reg.

This is with reference to the above stated subject that I request your goodself to kindly arrange for a Demand Draft for Rs 10000=00 towards renewal of Membership Fee for APITA for the academic Year - 2018-19. The Demand Draft is to be drawn in favour of "Andhra Pradesh Information Technology Academy" payable at Vijayawada.

I request you to kindly do the needful.

Thanking you Sir,

Yours Faithfully,
S. Manikanta.

21/6/18

Received.
21/6/18

A/C PAYEE

Valid for three months from the date of issue **DEMAND DRAFT**

दि करूर वैश्य बैंक लिमिटेड **THE KARUR VYSYA BANK LIMITED**
VIJAYAWADA - I TOWN, 11-16-36, SINGARAJUVARI STREET,
NEAR SAVANI TRANSPORT, VIJAYAWADA-520001
IFSC Code : KVBL0001414

2	2	0	6	2	0	1	8	
D	D	M	M	Y	Y	Y	Y	

ANDHRA PRADESH INFORMATION TECHNOLOGY ACADEMY

ON DEMAND PAY **OR ORDER** /या उनके आदेश पर

माँगे जाने पर Ten Thousand Only

RUPEES

रुपये

अदा करें **For Value Received** ₹ 10000.00

DD Sr. No. 141413084968

CDDZ

VIJAYAWADA GOVERNORPET

अदाकर्ता शाखा /DRAWEE BRANCH

प्राधिकृत हस्ताक्षरकर्ता
AUTHORISED SIGNATORY

प्राधिकृत हस्ताक्षरकर्ता
AUTHORISED SIGNATORY

Please sign above

एच OT
बी TT
ओ OL
टी TL

MANIPAL TECHNOLOGIES LTD, MANIPAL / CTS 21

9 8 7 6 5 4 3 2 1

⑈826609⑈ 520053003⑆ 00244⑆ 16

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

43

VOUCHER No. :
Salary Adv

BANK BILL DESCRIPTION

A. Ravi C

Cheq. No.	002588
Date	20/6/2018

Bill No. : KVB 3771 *Date* : .....

Head of Account : A. Ravi

Contents of the Bill : Salary Advance

Amount : 20,000/-

Receiver's Signature *Treasurer* *Secretary & Correspondent*

Date:15-06-2018.

To

The Secretary &Correspondent,

PSCMR College of Engineering and Technology,

Kothapet, Vijayawada – 520 001.

Respected sir,

Sub: requesting salary advance-reg.

I A.Ravi am working as a System Engineer in our college. Requesting Salary Advance of Rs.20,000/- for son and daughter's fee. I will pay back in monthly salary. And I repay 4000 x 5 =20000/- . Please consider this request for which I would be grateful to you.

Thanking you sir,

PAY MONDAY
19/6/18

Yours Sincerely

(A.RAVI)

(44)

POTTI SRIRAMULU CHALAVADI MALLIKARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by : S.K.P.V.V. Hindu High School Committee)

Kothapet, **VIJAYAWADA - 1.**

Voucher No.:
~~Cash~~

BANK BILL DESCRIPTION

Invitation expenses

Cheq. No.	002344
Date :	21/06/19

Bill No. : KVB 3771 C *Date* : .....

Head of Account : Srinivasa printers

Contents of the bill : Masters registers for the academic year 2018-19 purpose

Amount : 13,900/-

Receiver's Signature | *Treasurer* | *Secretary & Correspondent*

4

CASH BILL

Date 16/6/18

SRINIVASA PRINTERS

• DTP • SCREEN PRINTING • OFFSET PRINTING • BINDING

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M/s. PSCMR-CET (Polytechnic)
Vijayawada - 1

SNo.	PARTICULARS	Qty	AMOUNT Rs.	Ps.
1.	Students Attendance Register [25 Sheets each]	40	11,000	00
2.	Students Atten. Register [50 Sheets each]	10	2900	00
			13900	00

Rupees Thirteen Thousand Nine Hundred

Permission Taken from Sec Sir K. Sreedhar

Signature.

Vijayawada,
Dt 12-6-18.

To

The Secretary,

PSCMRCET,

Kothapeta,

Vijayawada.

Respected Sir,

Sub:- Request for the need of master registers for the academic year 2018-19.

Sir, As from the guidelines given by SBTET for all polytechnic colleges, that "Master Attendance Register should be Implemented as Compulsory."

So, For this purpose, We need the following number for Smooth Running.

For 1 Year:-	For Five years
I Yr → 2 → each book 100pgs	I Yr → 2×5=10
III Sem → 2 IV Sem → 2 V Sem → 2 VI Sem → 2 } 8 → each book 50pgs	290 100pgs → 10 books
	III/IV/V/VI → 8×5=40
	275 50pgs → 40 books

Kindly, accept Our request.

Thanking you sir,

G. Santhanam
yours obediently,
(G. Santhanam)

Secretary Sir Permission [illegible].
Treasurer sir & [illegible]
K. [illegible] 13/7/18

Mode of Payment CASH/CREDIT/NEFT	
Vehicle Number	
E-Way Bill No	
Ship to Party	
Name & Address	

Date	
Charge (Y/N)	
Andhra Pradesh Code : 37	
Receiver (Billed to)	

85

CASH BILL Date

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M/s. The Student co-op stores, Govt. polytechnic
Vijayawada-8

SNo.	PARTICULARS	Qty	AMOUNT Rs.	Ps.
1.	class log Books 100 pages	30	3450	00
2.	" " " 200 "	10	1480	00
3.	Students Attendance Registers (small)	30	8250	00
4.	" " " (Big)	10	2900	00
5.	Consolidated Attendance Registers (80 pages)	40	4600	00
6.	Staff log Books	60	6900	00
7.	lab performance Sheets	1000	2000	00
			29,580	00

Rupees Twenty Nine thousand five hundred & eighty 2

(45)

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002292
Date	22/05/18

Bill No. : KVB 3771 Date : .....

Head of Account : P.S. Srinivas

Contents of the Bill : Transport charges for the expert of FDP program

Amount : 5783/-

Receiver's Signature

Treasurer

Secretary & Correspondent

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P)

DEPARTMENT OF MECHANICAL ENGINEERING

Vijayawada,
21-05-18.

From: Dr. P. S. Srinivas
Professor & Head of the Department,
Mechanical Engineering,
PSCMR College of Engineering & Technology,
Vijayawada.

To The Secretary & Correspondent,
PSCMR College of Engineering & Technology,
Vijayawada.

//Through Proper Channel//

Sub: Release of Transport Charges for the Expert of FDP - reg.

Sir,

We are organising the Faculty Development Program in the month of June. For this I have reserved the tickets for the Expert, Dr. BG Barki.

Herewith I am attaching the copy of the tickets. Kindly sanction an amount of Rs. 5,783/- (Rupees Five thousand Seven hundred and eighty three only).

And also kindly give necessary instructions to the concerned to transfer the money to my account.

My Account Details:

Name	: P. S. Srinivas
Bank	: HDFC
Account No	: 01091500000150
IFSC Code	: HDFC0000109

Thanking you,

Yours Faithfully,

PSS 21/5/18

(Dr. P.S. Srinivas)

Received cheque 22/5/18

Release ASAP 21/5/18

PAY

goibibo .com

Flight Ticket - Vijayawada to Chennai

Passenger's Name	Status	Seat No.
1. Mr B G Barki	Confirmed	

✈Going | 1h 10m

Date	Time	From	To	Flight No.	Terminal	Airline	PNR No.
08 JUN 18	17:55	Vijayawada	Chennai	SG3404		SPICEJET	RYMKGW

1h 10m | Vijayawada, VGA - Madras International (Meenambakkam), MAA

E-Ticket Numbers	Booking Reference	Price Summary
	AIRLINE: **SG/RYMKGW**	**Rs 3,167**

Web checkin

- **SpiceJet**: https://book.spicejet.com/SearchWebCheckin.aspx

goibibo .com

BFBF7Q

Flight Ticket - Bangalore to Vijayawada

Passenger's Name	Status	Seat No.
1. Mr B G Barki	Confirmed	

✈Going | 1h 35m

Date	Time	From	To	Flight No.	Terminal	Airline	PNR No
03 JUN 18	18:30	Bangalore	Vijayawada	6E7134	1*	INDIGO	BFBF7Q

1h 35m | Kempegowda International Airport, BLR - Vijayawada, VGA

E-Ticket Numbers	Booking Reference	Price Summary
	AIRLINE: **6E/BFBF7Q**	**Rs 2,616**

Web checkin

- **Indigo**: https://www.goindigo.in/#checkinTab

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002392
Date	20/4/18

Bill No. : KVB3771 Date : .....

Head of Account : A. Patanjali Sastri

Contents of the Bill : Funds for Drone project for 4th CSE final yr students purpose

Amount : 20,000/-

Receiver's Signature

Treasurer

Secretary & Correspondent

20/4

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002380
Date	19/4/18

Bill No. : KVR 3771 Date : .....

Head of Account : A. Patanjali Sastri

Contents of the Bill : Funds towards Drone proj. for 4th CSE final yr students purpose

Amount : 20,000/-

Receiver's Signature

Treasurer

Secretary & Correspondent

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Vijayawada ,
Date:04-04-18.

From,
4th CSE final year students,
PSCMRCET,
Vijayawada.
To,
The Principal,
PSCMRCET,
Vijayawada.

Sub: For the providence of funds towards our DRONE projects.

Respected Dignitaries,

We the students of final year (2014-2018) computer science engineering stream have carried out final year major projects. Our major projects are AGRICULTURAL SEEDING DRONE AND FERTILIZER GRIPPER DRONE. This drone outcome is very good and useful too. AGRICULTURAL SEEDING DRONE was awarded as BEST PROJECT 2018 by the external review member.

We worked under A Start-up Company FOPPLE DRONE TECHNOLOGIES, KANKIPADU. The budget which is incurred on project was shared among ourselves. AGRICULTURAL SEEDING DRONE paid 27,000 and FERTILIZER GRIPPER DRONE was paid 25,000. Totally we paid 52000 for two drones. We have small description about our project drone. On the request of our department faculty we want to give these drones to the college for next project use.

ABOUT OUR DRONE:

A Drone is a UAV (Unmanned Aerial vehicle) flying robot, in an technological context it is an unmanned aircraft. The Drones may be remotely controlled or can fly autonomously through Software-controlled flight planes in their embedded systems with on-board sensors and GPS.

Drones come in an wide variety of sizes, with large Drone mostly used for Military purposes such as predator drone, phantom 2+vision drone etc.., and other small drones which can be launched by hand.

The nose of the UAV is where all the sensors and navigational systems are present the rest of the body is complete innovation since there is no loss for space to accommodate humans and light weight. The Drone system consists of two parts- the Drone itself and control systems.

APPLICATIONS:

1. AGRICULTURAL SEEDING DRONE is helped to dispense the seeds in the agricultural lands and helps to reduce the work floor of a farmer. The field can be monitored with the use of advanced sensors and digital imaging capability. This seeding drone is implemented with respective software's for sowing different seeds in the land. Its a remote controllable unmanned aircraft. Seeds are dispensed through an attached seed dispenser within the particular intervals of given time.

2. FERTILIZER GRIPPER DRONE is helped to pick an object and then drop to its respective spot through the waypoints through highly dispensing sensors. And additionally it can be an agricultural fertilizer. It can spread the liquid over the farming lands within small accurate time, through the sprinkler.

So, Kindly we are requesting you to support and provide us reimbursement of our investment towards our projects AGRICULTURAL SEEDING DRONE and FERTILIZER GRIPPER DRONE for final year CSE batch 2014-2018 i.e.; 20,000 for each drone.

THANK YOU,

Yours faithfully,

1.Mownika.Vanka
2.Ratna Siri.Devisetty
3.Prashanth.pathipati
4.Revathi.Rayavarapu
5.Pradeep.porapu
6.Sowmya
7.Alekya.samudrala
8. Vinay chaintanya
9. Sowjanya
10. Sushmitha
11. Swapna
12.vineela vinnakota

Forwarded to Principal
S.O.
Kindly sanction the cost incurred on each drone.
We can provide Rs. 20,000/- per drone.
AW

Spoke to them and accepted
18/4/18

11/4/18

2/4

PA

Vijayawada,
28/4/18.

To
The HOD Sir,
PSCMRCET,
Vijayawada.

Respected Sir,

We are the students of PSCMRCET of final year CSE department have done major project on "agricultural pesticides drone". And we received Compensation from College administration, of ₹20,000.

Thanking you,

yours faithfully,

(14KT1A0541) K. Sowjanya
(14KT1A0512) B. Susmitha
(14KT1A0534) G. Swapna
(15KT5A0504) B. Y. Sowmya
(14KT1A05B0) V. Vineela
(14KT1A0586) P. Pradeep
(14KT1A0594) S. Alekya
(14KT1A05A9) V. Vinay Chaitanya

Paid

Drones

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002422
Date	20/04/2018

Bill No. : KVB 3771 Date : .....

Head of Account : M.N.L. Kalyani

Contents of the Bill : Incentive for paper publishes on 23/4/1
in IEEE xplore purpose.

Amount : 5000/-

M.N.L. Kalyani
Receiver's Signature

Treasurer

20/4
Secretary & Correspondent

Vijayawada,
28/04/18.

From,

M.N.L.Kalyani,

Asst. Professor,

ECE Department,

PSCMR College of Engineering and Technology,

Vijayawada-1.

To

The Principal,

PSCMR College of Engineering and Technology,

Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on 23 April 2018 in IEEE Xplore ….Regd.

I, M.N.L.Kalyani working as an Asst. Professor in ECE Department. I published a paper titled "**An adaptive technique to enhance the BER in ultra-wideband framework**" on 23rd April 2018 in IEEE Digital library with DOI: 10.1109/ICICICT1.2017.8342645 (through Intelligent Computing, Instrumentation and Control Technologies (ICICICT), 2017 International Conference on 6-7 July 2017). So I request you to consider my published paper for an incentive as per the norms of our institute.

Thanking You,

Yours faithfully,

M.N.L.Kalyani

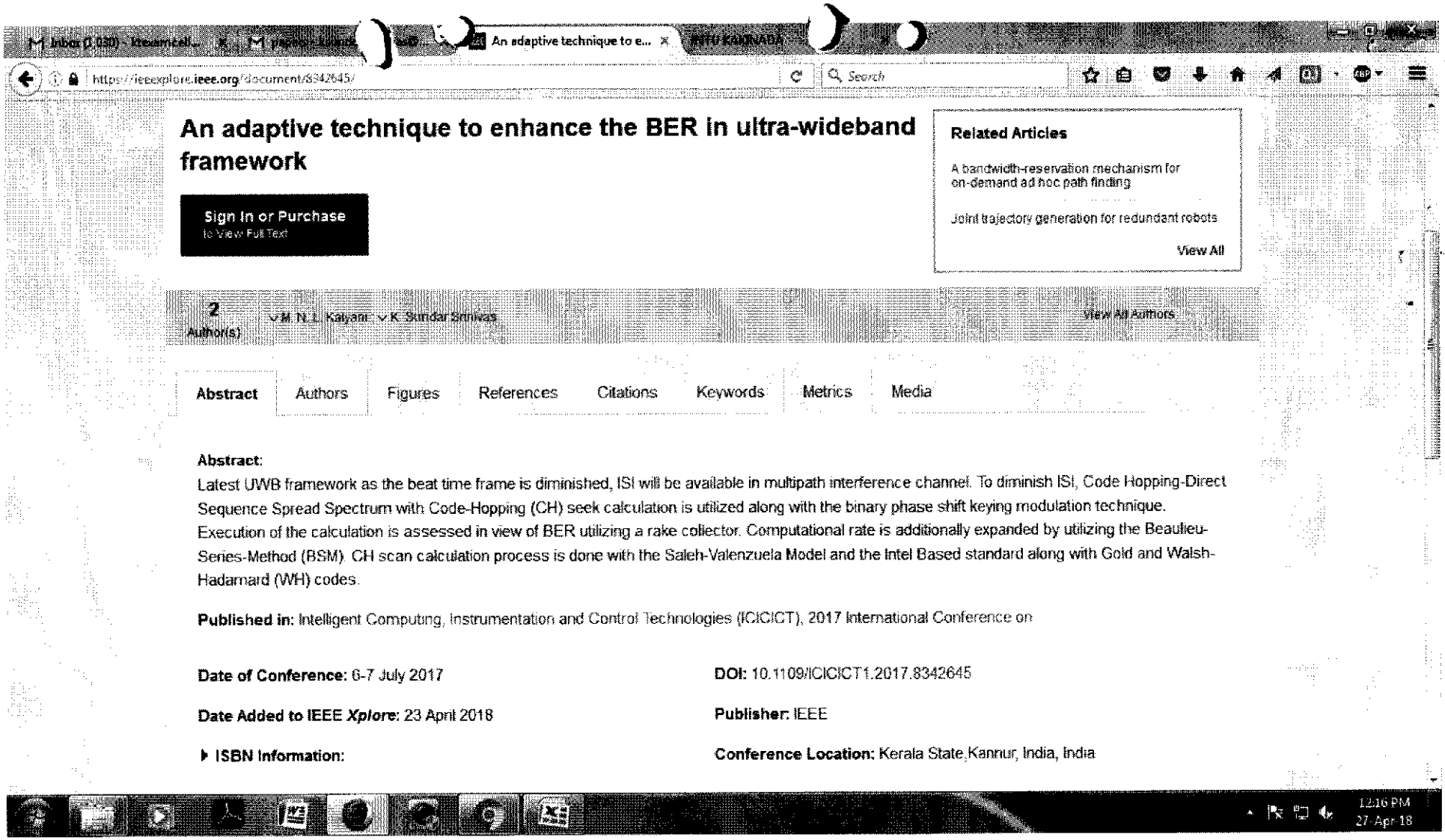
Forwarded
28/4/18.

Recommended Rs.5000/- one time incentive.
28/4/18

28/4/18

20/4

28/4/18



An adaptive technique to enhance the BER in ultra-wideband framework

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Joint trajectory generation for redundant robots

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2 Author(s) M. N. L. Kalyani K. Sundar Srinivas View All Authors

Abstract | Authors | Figures | References | Citations | Keywords | Metrics | Media

Abstract:
Latest UWB framework as the beat time frame is diminished, ISI will be available in multipath interference channel. To diminish ISI, Code Hopping-Direct Sequence Spread Spectrum with Code-Hopping (CH) seek calculation is utilized along with the binary phase shift keying modulation technique. Execution of the calculation is assessed in view of BER utilizing a rake collector. Computational rate is additionally expanded by utilizing the Beaulieu-Series-Method (BSM). CH scan calculation process is done with the Saleh-Valenzuela Model and the Intel Based standard along with Gold and Walsh-Hadamard (WH) codes.

Published in: Intelligent Computing, Instrumentation and Control Technologies (ICICICT), 2017 International Conference on

Date of Conference: 6-7 July 2017

DOI: 10.1109/ICICICT1.2017.8342645

Date Added to IEEE *Xplore*: 23 April 2018

Publisher: IEEE

ISBN Information:

Conference Location: Kerala State,Kannur, India, India

(48)

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsored by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002371
Date	18/4/18

Bill No. : KVB 3771 Date : .....

Head of Account : A. Durga Tharun kumar

Contents of the Bill : Automatic solar street light project for EEE Dept purpose

Amount : 15,000/-

A. D. Tharun kumar
Receiver's Signature

Treasurer

Secretary & Correspondent

Vijayawada

Date: 13/04/18

To

The Principal

PSCMRCET

Kothapeta

Vijayawada

Respected Sir

*We the students of **IV B.Tech** (14KT1A0210, 14KT1A0215, 14KT1A0234, 14KT1A0245, 15KT5A0201) **EEE** branch studying in this college, carried out a live project and named it as "**AUTOMATIC SOLAR STREET LIGHT**", as an initiative of making our campus as Solar Campus carrying out of such live projects will certainly encourage more number of our junior students to carry out further such projects.*

*In this regard we have spent an amount of **Rs 15000/-** towards this live project (enclosed list of expenses included). Kindly sanction the amount which will be helpful for registering competitive examinations*

Thanking you sir

Yours sincerely

B.Sonia	*(14KT1A0210)*
D. Nagendra	*(14KT1A0215)*
N.Naveena	*(14KT1A0234)*
R.Likhitha	*(14KT1A0245)*
A.D.Tharun Kumar	*(15KT5A0201)*

forwarded to Principal Sir for approval

13/4/18
HOD

21/4

13/4/18

Release in the form of cheque
17/4/18

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

S.No	*Name of the Component*	*Expenditure*
1.	*LED (24 Watts)*	*2500/-*
2.	*Controller*	*2000/-*
3.	*Battery (26 Ah)*	*3500/-*
4.	*Panel (50 Watts)*	*4000/-*
5.	*Hardware*	*1500/-*
6.	*Battery Box*	*1000/-*
7.	*Wiring*	*500/-*
Total		***15000/-***

Total amount in words: ***FIFTEEN THOUSAND RUPEES ONLY***

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO COLLEGE OF ENGINEERING & TECHNOLOGY

(Sponsered by SKPVV HINDU HIGH SCHOOLS COMMITTEE)

KOTHAPET, VIJAYAWADA-1

VOUCHER No. :

BANK BILL DESCRIPTION

Cheq. No.	002232
Date	20/3/18

Bill No. : KVB 3771 Date : 7/4/18

Head of Account : T. Sireesha

Contents of the Bill : Incentive for paper published on Mar'18 in WSEAS Transactions purpose

Amount : 5000/-

T. Sireesha
Receiver's Signature

Treasurer

20/3
Secretary & Correspondent

Vijayawada,
14/03/18.

From,

T. Sireesha,

Asst. Professor,

ECE Department,

PSCMR College of Engineering and Technology,

Vijayawada-1.

To

The Principal,

PSCMR College of Engineering and Technology,

Vijayawada-1.

Respected Sir,

Sub: Request for Incentive for my paper published on March 2018 in WSEAS Transactions on Environment and Development Scopus Journal….Regd.

I, T. Sireesha have been working as an Asst. Professor in ECE Department since 2015. I published a paper titled **"DESIGN OF AN AUTONOMOUS VEHICLE FOR PRECISION AGRICULTURE USING SENSOR TECHNOLOGY"** on March 2018 in WSEAS (World Scientific Engineering Academy and Society) Transactions on Environment and Development Scopus Journal. So I request you to consider my published paper for an incentive as per the norms of our institute..

Thanking You,

Yours faithfully,

T.Sireesha.

Forwarded 14/3/18

9502080080

14/3/18

20/3

To:
Sri. R.V. Subba Rao.

Release incentive of 5,000/-

20/3/18

Design of an Autonomous Vehicle for Precision Agriculture using Sensor Technology

T. SIREESHA[1], M.N.L. KALYANI[2], D.GOWTHAMI[3]
[1 2 3]Assistant Professors, Department of ECE,
Potti Sriramulu Chalavadi Mallikharjuna Rao College of Engineering and Technology,
Vijayawada, Krishna (Dt), Andhra Pradesh, India.
Email: sirishatammana@gmail.com[1], mlakshmikalyani@gmail.com[2], dukkagowthami@gmail.com[3]

Abstract: To avoid the various problems which affects the crop production, an autonomous vehicle is to be designed and used for crop transplanting and yielding, weed detection, crop protection, soil moisture properties, water status, temperature monitoring, fertilization and pesticides with their resource usage and also special focus on control and data monitoring with the embedded system. Some of the challenges and considerations on the use of these sensors and its technologies for crop production are also discussed in this paper. Fiber optic gyroscopes and multiple resolvers are employed to acquire the data for enhancing the accuracy of target positioning and in order to evaluate there is a method which describes the behavior of agricultural automation vehicle traveling along paths of any curvature.

Key-Words: Precision Agriculture, Autonomous vehicle, Fiber Optic Gyroscope, Sensors, Service Unit, SLAM Algorithm.

1 Introduction

Precision agriculture (PA) is an innovative; the fundamental requirement of the agricultural modernization is to improve the efficiency of agriculture production without affecting these various factors. In the agriculture automation technology is to correct identification and positioning for the agriculture objects with trajectory of tracking problems. The data which is monitored recorded automatically, accumulated easily and effectively is the basis to implement in precision agriculture. But the technology is playing an important and increasing role from past several years. Recently, the advent of different autonomous vehicles ranging from different fields of operations was developed in the industry, but all these products available are commercial and impressive having a substantial cost (depending upon their accuracy and functionality) to farmer.

The fully autonomous of all vehicle operations carried out by all control routines and this control relies on a central processing unit for coordination which was developed by many systems. But these systems have high unit cost due to high demands on the processing unit of this design place. A number of electronic components on agriculture equipment increases during the situations in the normal field and the spray rate controllers, variable rate planter controllers, and implement system controllers as well as controls are interact with a normal vehicle operation. This results a creation of standard communication link within all agricultural equipment. Therefore, a new methodology was needed in the agriculture autonomous vehicle which quantifies any auto-steering system level performance and different solutions are classified according to their accuracy and reliability [1,13].

2 Existing Methodology

In the existing methodology of an autonomous robot was developed by the API platform, which is able to survey an agricultural field autonomously and the robot is four-wheel drive and four-wheel steered as shown in Figure 1. The autonomous navigation of the vehicle is obtained by the crop and weed density measurements. For further processing of this information is done by combining the data into a digital map of the field.

The GPS, gyros, magnetometer and odometers was used in the equipment of the robot, in order to determine the exact location for image taking, as well as to estimate of the robot's position and orientation for a tracking algorithm was facilitated with providing these measurements [12]. Actuation is obtained only by drive on four wheel assemblies but not with steering. The platform is connected to a base station for enabling farmer supervision and on-line data transmission.

Fig 1: The API Platform

The API platform is equipped with a high resolution camera in order to map the growth and density of crops and weeds and also analyzing single plants at different growth stages implying that the position of the inspection camera must be accurate within few centimeters. This platform must move between the rows to avoid the damage on crops. So, the vehicle precision must be high, to operate in the field and its mapping can be done in a fixed spatial grid or by use of adaptive route planning. For further treatment, all pictures have to be transferred to the base station within a time. Some of the platform requirements based on these functionalities are considered in which robustness, reliability, safety and accuracy are major requirements in the field because this will not provide a satisfactory solution from the normal laboratory prototype equipment [2].

The Control, Reliability and Safety Issues are considered in an open environment; the platform has to move autonomous where unknown obstacles potentially can be in the vehicle moving direction, so there is necessity to require a high and reliable platform-self-control solution.

3. Proposed Methodology

In our proposed work, there is a need to add the additional hardware components and also consider some important aspects of software while designing an autonomous vehicle.

3.1 Software

In the system design, there are three kinds of operating models including regular collection model, threshold alarm and real time inquiry model [3].

3.1.1 Structure of Software System

The μC/OS-II is a portable, scalable and preemptive operating system kernel that can be embedded into ROM and can carry out multi-tasks. It is widely used in microprocessors, microcontroller and digital signal processor. The structure of software system is shown as Figure 2.

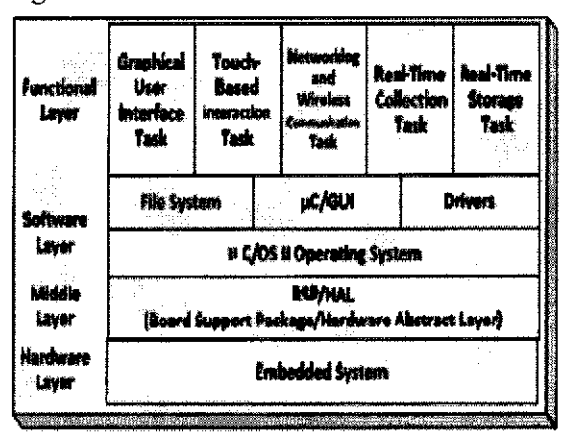

Fig 2: System Information.

3.1.2 Optimization of μC/OS-II

According to the application difference of system, the operating system needs to be clipped and optimized, and this optimized system can not only save expenditure of system resource but also create better overall performance. μC/OS-II is an embedded RTOS (real-time operating system) that can be clipped and configured depending on different needs of application, and the functions that are not used temporarily can be closed, thus not only saving memory space but also improving the overall efficiency of the system [3].

3.1.3 Flow Chart of Node Software

In this system there are two kinds of nodes. One is sensor node for collecting information of sensors; another is data central node for receiving data sent

from sensor nodes and completing communication with computer.

3.1.3.1 Design of data central node software

If the system gets off the ground to initialize then hardware protocol begins to establish network after initialization. Firstly set up network in accordance with the sensor node list and modify lists through communication among sensor nodes. Then check whether there are new sensor nodes that are waiting for accession to network and complete the upgrade of network. Finally, operate the protocol tasks after successful accession to network, receive node data and sent them to PC. If the number of times it is a failure exceeds regulate done in the process of establishment, and the next one should continue. The flow chart is shown as in Figure 3.

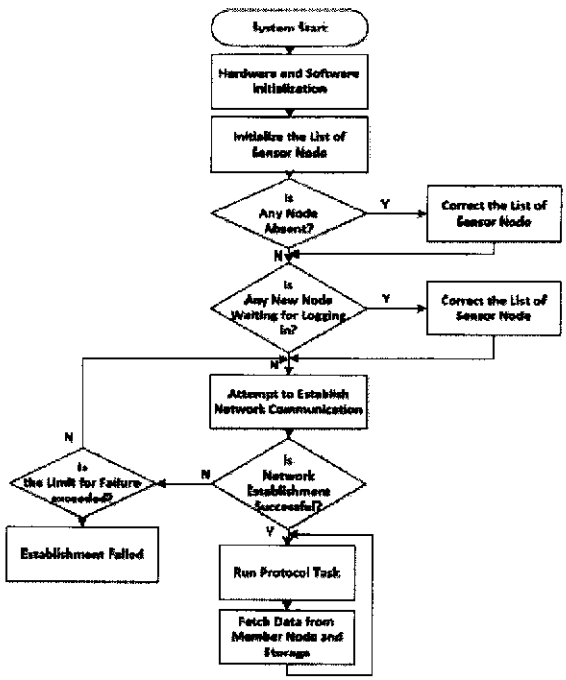

Fig 3: The flow chart of central node.

3.1.3.2 Design of sensor node software

Sensor nodes are mainly used for collecting sensors' data, receiving control data from data center and uploading collected data to data central node. If there is no transceiving of data, the nodes will enter into dormant state with the least power consumption.

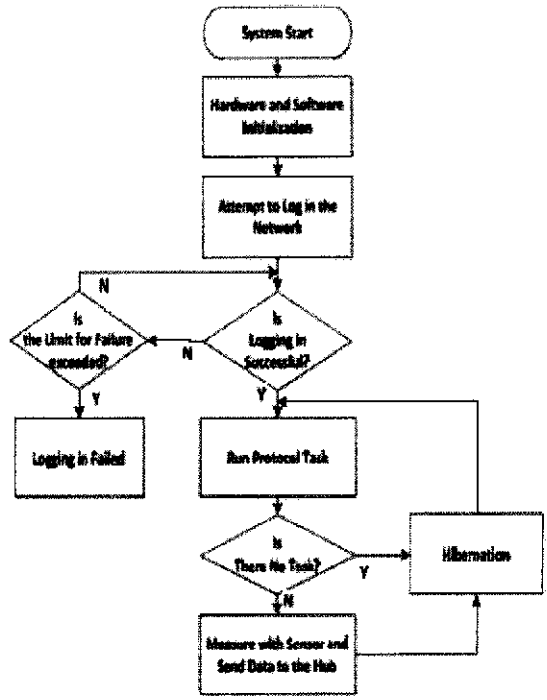

Fig 4: The flow chart of sensor nodes.

The hardware and protocol initialization is to be done after the system initialization. Protocol tasks are carried out after successful loading. After judgment of tasks, the sensor's data is to be measured and are sent to data center node. Then the next task is undertaken after the node enters into dormant state [3]. The establishment of network fails if the number of times exceeds the regulated one. The flow chart is shown as Figure 4.

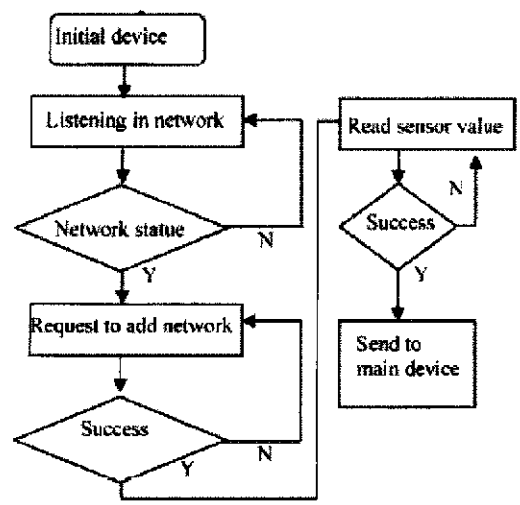

Fig 5: Host Device Control Flowchart Diagram

After completion of connection to the network, the data from each node is received and this data is sent to the embedded module via serial port [4]. And then sends processed data to a remote control center through a network in Figure 5.

3.2 Hardware

An additional hardware components required in autonomous vehicle is discussed below:

3.2.1 Multimodal Sensor

In precision agriculture, soil characteristics plays an important role for absorption and desorption of water and nutrient ions, nutrient solution changes in surface soil area, deep soil area, and near roots area have different behavior and time delay by the hour or day [5]. Therefore, a pinpoint measurement is required in precision agriculture. So, in our proposed work rather than using a normal temperature sensor in precision agriculture, we have to replace with a miniaturized and insertion type multimodal sensor used for precise control of the plants growth conditions in medium culture measures directly.

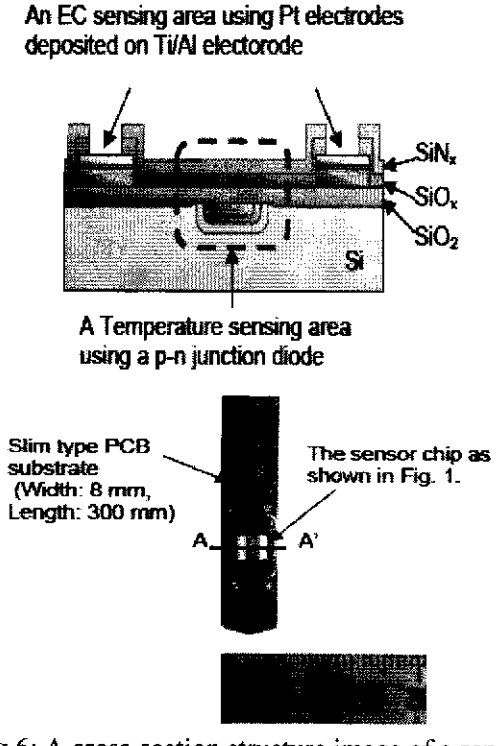

Fig 6: A cross-section structure image of a sensor chip and bounded on PCB substrate

The diffused solution in soil and the time lag between supplying solution and soil condition change were visualized by using the multimodal sensor in actual cultivation environment, for the first time [5].

The multimodal sensor chip integrated with an electrical conductivity (EC) sensor and temperature sensor for pinpoint measurement using Si large-scale integration (LSI) processes [15], and also the chip was bonded on the PCB package with the size of 8 mm and the length of 300 mm was designed to be capable of insertion, as shown in Figure 6.

3.2.2 Soil Moisture Sensor

Focusing on soil moisture monitoring, it has been shown that the mobile agents, performing data acquisition, data analysis, data aggregation and decision making directly on the nodes, are able to respond in a timely manner to changes in the soil and to precisely schedule irrigation events that results in a reduction of freshwater consumption and lowered irrigation costs [6]. The structure of agriculture soil under irrigation is as shown in Figure 7 [7].

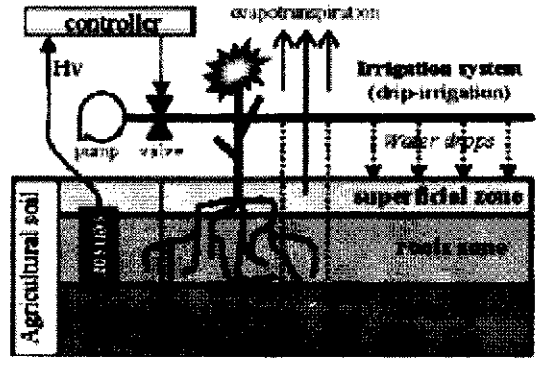

Fig 7: Structure of agriculture soil under irrigation

The VG400 is a low-power and robust soil moisture sensor, it senses volumetric water content based on measurements of the dielectric constant of the soil, a technique known to provide highly accurate results. The sensor is insensitive to water salinity and cannot corrode over time as, for example, traditional conductivity based sensors. And also by monitoring, crop and climate in a field and providing the useful information which can be used in making efficient use of water resources and also

achieving in high yield. If an additional sensors, such as rain sensors may be integrated into the monitoring system to further reduce the freshwater consumption and the irrigation costs [6].

3.2.3 Rainfall Sensor

The rain sensor or rain switch is a switching device, which is activated by rainfall and having two main applications in rain sensors. Initially for an automatic irrigation system, a water conservation device is to be connected then causes the system to shut down in the event of rainfall and in the next section, by using a device protection of automobile interior parts from rain was done, which supports the automatic mode of windscreen wipers [8].

3.2.4 Humidity Sensor

SHT11, a digital temperature and humidity sensor chip is widely used in fields like heating and ventilation, air conditioning, automobile, consumer electronics and automatic control [3].

The chip integrates with a unique capacitive sensor element for measuring relative humidity and a band-gap sensor for temperature, additionally the signal processing on a tiny foot print provides a fully calibrated digital output, featuring in excellent reliability and long term stability [16]. The design of sensor module SHT11 is as shown in Figure 8. The ultimate choice for this design of SHT11 is tiny size and low power consumption [3,14].

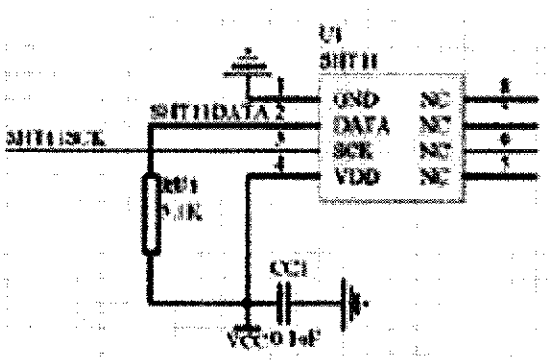

Fig 8: SHT11 Sensor

3.2.5 Spraying Operation

In agricultural areas, the application of pesticides and fertilizers is having a crucial importance for crop yields to carry out this task mainly by using this aircrafts because of their speed and effectiveness in the spraying operation but some of the factors causes to reduce the crop yield, or damage. Weather conditions, such as the direction of the wind and its intensity during the spraying process will add further complexity to the problem of maintaining control. To avoid this problem consider the architecture, which is to address the problem of self-adjustment of the UAV routes when spraying chemicals in a crop field.

In our proposed methodology, an algorithm was evaluated to adjust the UAV route in order to change the direction and wind intensity. To adapt the path runs in the UAV, the wireless sensor network (WSN) deployed in the crop field which was obtained by input feedback. This shows the sensors can use the feedback information in order to make adjustments to the routes could significantly reduce the waste of pesticides and fertilizers. Evaluation can be done in this algorithm, because there is an impact with the number of communication messages between the UAV and the WSN [9].

3.2.6 Attitude Sensor

Due to random generating and the attitude of the vehicle rapid changes, most of the agricultural fields are uneven, so that quick response is required for the measurement of the attitude of an off-road vehicle. A low-cost electrolytic fluid inclinometer method is used to sense tilt angles (roll and pitch), this is to be resolved with several issues such as poor accuracy and sensor noisy response due to lateral acceleration of the vehicle. But in real time, there is a necessity of noise correction in the sensor was required for operation [10].

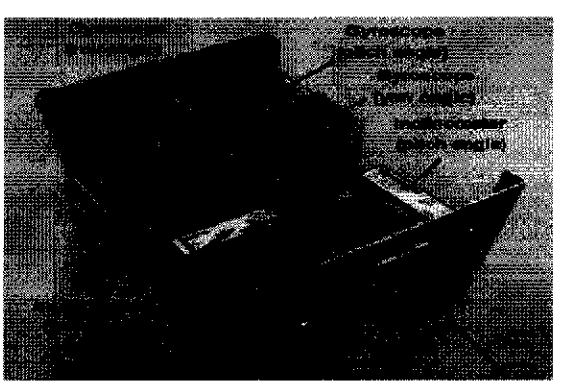

Fig 9: An overview of an attitude sensor prototype

Two inclinometers and three vibratory gyroscopes are used in low-cost attitude sensor with a quicker responses and higher signal to noise ratios in their development while compare with the other inclinometers which was used alone as shown in Figure 9. These developed attitude sensor evaluates an accurate results on field tests on a flat field, a sloping ground and a bumpy road. So this low-cost attitude sensor is preferable and to replace fiber optic gyroscope which is cost effective in agriculture [10].

3.2.7 Service Unit

To improve the productivity and efficiency in precision agriculture by doing these processes such as seeding, harvesting, weed control, grove supervision, chemical applications, etc. In an autonomous vehicle require a (unmanned) service unit which is to perform the primary or secondary tasks in the agricultural environment.

The most important current abilities in the autonomous vehicles are performed by the agricultural tasks, which can be grouped into four categories: guidance, detection, action, and mapping, and the relation between its four abilities are as shown in Figure 10 [11].

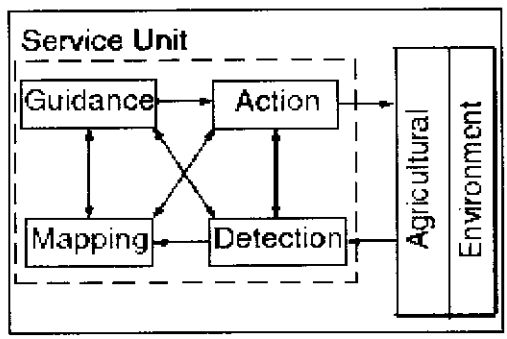

Fig10: Relation between the four most important implementations of a service unit

But there exists a localization problem (i.e., not able to perform the action associated with the agricultural task such as path-following, path-tracking, or trajectory-tracking activities), even though these stages are intrinsically related. If the localization system fails or is inaccurate, then this inaccuracy is propagated to the four abilities of the service unit. The SLAM algorithm was considered as an inexpensive solution for the localization problem.

The simultaneous localization and mapping SLAM algorithm minimizes the estimation and positioning errors in both the localization and the mapping processes and this algorithm concurrently estimates both the pose (position and orientation) of a vehicle and the map of the environment in which the vehicle is located. The sensors mounted on the vehicle have an extract features from the surrounding environment and these are located within a map, which is maintained and updated by the SLAM algorithm.

The SLAM algorithm have an advantage is that they can optimally perform in places where other positioning systems fail and can be used to further improve GPS-based localization systems. In addition to this, a ground station allows the tele-operation of the vehicle. Thus, there are some specific strategies that are directly related to the environment disposition and the vehicle's capabilities during navigation, positioning, orientation, and turning maneuvers. The functional structure of the autonomous vehicle is as shown in Figure 11.

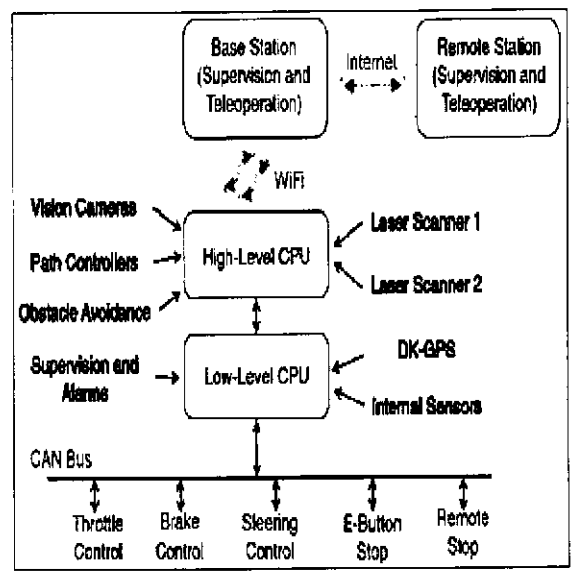

Fig 11: Functional structure of an autonomous vehicle

3.2.7.1 Guidance:

The guidance requires information regarding the surrounding environment (mapping) and the features are currently detected (detection). In the service units, the control and motion-planning strategies are applied to drive the vehicle within the agricultural

field for specific purposes which are closely related to the action stage. Thus, the way the vehicle navigates within the agricultural environment needs information regarding its location in the field (localization system) and this system uses the sensors for a correct localization of the extracted features within the map.

3.2.7.2 Mapping:

The most important stage is to plan feasible and safe paths or trajectories for the navigation process by using the mapping and the construction of a map in agricultural field will provide most relevant features. Thus in a service unit, the map of the environment is to navigate safely, and the detected features will allow appropriate planning for performing actions (e.g., terrain leveling, chemical spreading, etc.).

During mapping, a map of the surrounding environment is built and to maintain with the aid of navigation (guidance) process. The measurements acquired from the environment (detection) and the information regarding the location of the service unit within such a map (for guidance and action). The ability of detection is done by this stage and the localization system (the DK-GPS, the internal sensors, and the low-level CPU).The high-level CPU generates a map of the environment based on the exteroceptive sensors whereas the low-level CPU provides the localization information.

3.2.7.3 Detection:

In the agricultural environment, the information is directly acquisited by using the detection (i.e., the extraction of biological features from the environment). At the mapping stage only, this information is to build and maintain an updated map of the surrounding environment to guide the navigation process (guidance) or to perform a given action (e.g., weed detection, grove maturity inspection, or agrochemical disposal). In this stage, it consists of two range laser sensors, the stereo vision system and the high-level CPU processes the sensors information.

3.2.7.4 Action:

The action means interaction of the service unit with the agricultural field (e.g., radicchio harvesting in which the vehicle was designed for the execution of the task), but it can be performed on the basis of a guidance process (e.g., harvesting or seeding), detection (e.g., weed removal), or mapping (e.g., agrochemical disposal based on previously acquired tree top information).This stage was designed to monitor and supervise a grove. Therefore, a robotic arm, controlled by a high-level CPU, can be mounted on the vehicle for manipulation purposes [11].

4 Conclusion

In precision agriculture the autonomous vehicle plays a most important role, to improve the efficiency of crop production without affecting the various factors in agriculture and also reducing the cost of production. In this paper, to develop the design of an autonomous vehicle by considering the current developments and future perspectives of the Precision Agriculture (PA) for crop production. It provides a better solution that optimizes product quality and quantity of crop production by the cost minimization, human intervention and the variation caused by environment due to unpredictable nature.

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