



सी एस आई आर- राष्ट्रीय समुद्र विज्ञान संस्थान
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

CSIR - national institute of oceanography
(council of scientific & industrial research)



CERTIFICATE

This is to certify that the project titled "**DELINEATION OF COASTAL REGULATION ZONE (CRZ) FOR PIPELINE CROSSINGS AT SOMUDEVUPALLI CROSS IN ANDHRA PRADESH USING CIVIL ENGINEERING TECHNIQUES**" is the bona fide work carried out by Mr. **U.SAI KOTESWARA RAO** a student of B Tech (Civil) of Andhra Loyola Institute of Engineering & Technology, Vijayawada affiliated to Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh. During the academic year 2014-18, in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology (Civil Engineering) and that this Mini Project has not formed the basis for the award previously of any other degree, diploma, fellowship or any other similar title.

Place: *Visakhapatnam*

Date: *16th June, 2017*

Jawahar Kumar

Signature of the Guide

सी.एच. जवहर कुमार / CH. Jawahar Kumar
वरिष्ठ तकनीकी अधिकारी / Senior Technical Officer
सी.एस.आई.आर. - राष्ट्रीय समुद्र विज्ञान संस्थान
CSIR- National Institute of Oceanography
आंचलिक केंद्र, 176 लॉसन बे
Regional Centre, 176, Lawsons Bay
विशाखापतनम / Visakhapatnam 530 017
भारत / India.



प्रांतीय केंद्र, 176 लासन्स बे कालनी, विशाखपट्टणम् - 530 017, भारत

REGIONAL CENTRE, 176, LAWSONS BAY COLONY, VISAKHAPATNAM - 530 017, India

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11th July 2017

This is to certify that **Mr. LANKA VAMSI VENKATA KRISHNA SASTRY** (Regd.No:16HP1E0057) student from Andhra Loyola Institute of Engineering and Technology (Affiliated to JNTU Kakinada) has successfully completed the project work titled "A STUDY ON FUNDS FLOW ANALYSIS" in our company during the period 01st June 2017 to 07th July 2017.

For TULASI SEEDS PVT LTD

 Authorized Signatory




**PRACHANDA
BHASKAR BG II**



TAAKATH BG II



SURYA BG II



SRI TULASI BG II



SOURAV BG II



BHASKAR BG II



LOTUS BG II



UJWAL BG II



KUSALAVA

CERTIFICATE

This is to certify that Mr. S. SAI KISHAN (Regd.No.15HP1E0048) who is studying **MASTER OF BUSINESS ADMINISTRATION** in ANDHRA LOYOLA INSTITUTE OF ENGINEERING AND TECHNOLOGY has completed his project work **ASTUDY ON FINANCIAL STATEMENT ANALYSIS AT KUSALAVA INTERNATIONAL LIMITED** Vijayawada, who attended the work from 01.06.2016 to 02.07.2016.

For Kusalava International Ltd

M. NAGESWARA RAO
GENERAL MANAGER

www.kusalava.com

Kusalava International Ltd

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Smt. PARIMALA MANICKAVEL
Managing Director

30-09-2016

TO WHOM SO EVER IT MAY CONCERN

This is to Certify that Mr. DOPPALAPUDI ANAND , student of ANDHRA LOYOLA INSTITUTE OF ENGINEERING AND TECHNOLOGY, VIJAYAWADA (A.P.) studying M.B.A; bearing Reg.No.15HP1E0026 , has done his academic Project-Work in our organization from 01-06-2016 to 02-07-2016 and also submitted us a detailed Report on his Project-Work under the title of 'A STUDY ON CUSTOMER RELATIONSHIP MANAGEMENT (MARKETING) WITH REFERENCE TO BHARATHI CONSUMER CARE PRODUCTS PVT LTD; GUNTUR (A.P.)'.

During his tenure, his association with us is sincere and hard Working and his Conduct is found satisfactory.

We wish him a bright future in his Career ahead.

For BHARATHI CONSUMER CARE PRODUCTS PVT LTD.

(A.MANICKAVEL)

CHAIRMAN-CUM- EXECUTIVE DIRECTOR



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Vijayawada – 520 008
DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 30th November 2016- 1.00PM – 4.00PM

Industry Visited: Field visit (School of Planning (SPAV))

Participant's:

III Year II Semester and II Year II Semester 60 students and Two faculty members

Description about the Visit:

- ❖ III/IV and II/IV B.Tech students were taken to School of Planning & Architecture, Vijayawada for practical exposure of Super Structures and explained them about Finishing works like Plastering, Flooring, and Elevation etc of Hostel Block, on 30th November 2016.

Report Submitted by: Mr. G.Lenin Reddy, Mrs.M.Alekya

Designation(s): Associate Professor, Assistant Professor

Department: Department of Civil Engineering

Glimpses of Industrial Visit:



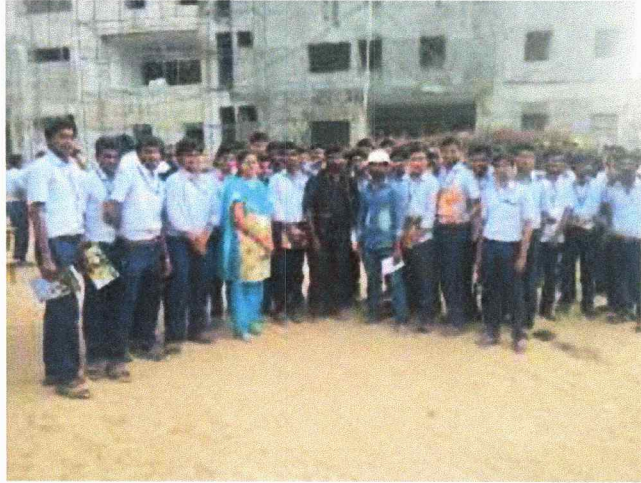
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DEPARTMENT OF CIVIL ENGINEERING



II Yr and III Yr B.Tech students were taken to SPA


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DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 22nd November 2016- 1.00PM – 3.00PM

Industry Visited: Epoxy Flooring done at ALIET-SIEMENS WELDING LAB

Participant's:

III Year II Semester and II Year II Semester 45 students and one faculty

Description about the Visit:

- On 22nd November 2016, II B.Tech II semester Civil Students were given detailed information on **Epoxy Flooring** done at **ALIET-SIEMENS WELDING LAB**. In which III year students were also engaged

Report Submitted by: Mr. G.Lenin Reddy

Designation(s): Associate Professor

Department: Department of Civil Engineering

Glimpses of Industrial Visit:



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II Yr and III Yr B.Tech students were taken to **Epoxy Flooring** done at **ALIET-SIEMENS WELDING LAB**


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DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 16thMarch 2017- 10.00AM – 4.00PM

Industry Visited: Wastewater Treatment Plant near Ajith Singh Nagar

Participant's:

IV Year II 60 students and three faculty

Description about the Visit:

- ❖ IV B.Tech students were taken to Sewage Treatment Plant, Ajithsingh Nagar, Vijayawada for practical exposure on Treatment process of Waste water and testing of treated water samples in Laboratory on 16thMarch 2017.

Report Submitted by: Mr. G.Lenin Reddy, S. Gowtham, S.Chandrababu

Designation(s): Associate Professor, Assistant Professor, Assistant Professor

Department: Department of Civil Engineering

Glimpses of Industrial Visit:



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IV B.Tech students were taken to Sewage Treatment Plant, Ajithsingh Nagar, Vijayawada

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DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 14th December , 2016- 10.00AM – 4.00PM

Industry Visited: School of Planning and Architecture ,Vijayawada

Participant's:

IV Year II Semester 60 students and Two faculty members

Description about the Visit:

IV/IV B.Tech students were taken to **School of Planning & Architecture**, Vijayawada on 14th December 2016 for practical exposure of Super structure of Main Building 1st Floor, students were taught about what is a flat slab, Centring & Bar bending, Concreting of Shear Walls, Vacuum Dewatered Flooring (VDF) of Parking, Concrete and brick works of Auditorium.

Report Submitted by: Mr. G.Lenin Reddy, Mrs.M.Alekya

Designation(s): Associate Professor, Assistant Professor

Department: Department of Civil Engineering

Glimpses of Industrial Visit:



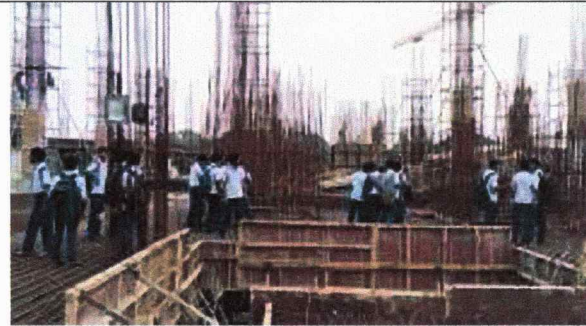
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DEPARTMENT OF CIVIL ENGINEERING



III B.Tech students and Faculty at School of Planning and Architecture ,Vijayawada

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DEPARTMENT OF BUSINESS ADMINISTRATION

Industrial Visit to Hindustan Coca-Cola Beverages Pvt. Ltd. Atmakur, Andhra Pradesh

Title: Industrial Visit to Hindustan Coca-Cola Beverages Pvt, Ltd. Atmakur, AP-to provides students an insight regarding internal working of companies.

Date(s): 20thseptember, 2016- 08.30AM – 02.00PM

Venue: Industrial Visit to Hindustan Coca-Cola Beverages Pvt, Ltd. Atmakur, AP

Participant's:

43 Students of MBA and 2Faculties from Department of Master of Business Administration, ALIET.

Description about the Visit:

Industrial visit has its own importance in a career of a student who is pursuing professional courses like MBA. Industrial visit helps to combine theoretical knowledge with practical knowledge.The objective this industrial visit is to provide students an insight regarding internal working of companies. It provided them with an opportunity to learn practically through interaction, working methods and employment practices. It gavethem an exposure to current work practices.

Fifty second year students along with three faculties from department of Master of Business Administration reached the company around 9.30 AM by college bus. Mr. Siva Reddy who is working as Public Relations and Marketing Executive received there. They have shown a video which represents the whole coca-cola company working process. After that they accompanied students to visit the factory each division wise. The entire visit gave a wonderful experience to the students in learning practical side of the industrial management.

Report Submitted by: Mr.N.Janardhana Rao

Designation(s):Assistant Professor

Department: DepartmentMaster ofBusiness Administration



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DEPARTMENT OF BUSINESS ADMINISTRATION

Glimpses of the visit:



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DEPARTMENT OF BUSINESS ADMINISTRATION

Industrial Visit to The Krishna District Milk Producers Mutually Aided Co-Operative Union Limited, Vijayawada

Title: Industrial Visit to -The Krishna District Milk Producers Mutually Aided Co-Operative Union Limited, Vijayawada to provide students an insight regarding internal working of companies.

Date(s): 25th October, 2016- 10.30AM – 02.00PM

Venue: Industrial Visit to The Krishna District Milk Producers Mutually Aided Co-Operative Union Limited, Vijayawada

Participant's:

51 Students of MBA (2015-2017) and 3 Faculties from Department of Master of Business Administration, ALIET.

Description about the Visit:

Industrial visit has its own importance in a career of a student who is pursuing professional courses like MBA. Industrial visit helps to combine theoretical knowledge with practical knowledge. The objective of this industrial visit is to provide students an insight regarding internal working of companies. It provided them with an opportunity to learn practically through interaction, working methods and employment practices. It gave them an exposure to current work practices.

Fifty one second year students along with four faculties from Department of Master of Business Administration reached the company around 10.30 AM by college bus.

Description about the Visit:

MBA I Year II semester students visited The Krishna District Milk Producers' Mutually Aided Co-Operative Union Limited, Vijayawada as part of their academic activity. Real time field visit will enhance the student's exposure to production processes and management practices. The present visit helped the students to know about milk processing, milk drying, ghee manufacturing, butter manufacturing, UHT milk packing, butter cold storage and warehouse practices.



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Glimpses of the visit:



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DEPARTMENT OF BUSINESS ADMINISTRATION

Industrial Visit to Jayalakshmi Oil and Chemical Industries Limited, Dokiparru, Guntur, Andhra Pradesh.

Title: Industrial Visit to -Jayalakshmi Oil and Chemical Industries Limited, Dokiparru, Guntur, Andhra Pradesh. to provide students an insight regarding internal working of companies.

Date(s): 08th November, 2016 - 10.30AM – 02.00PM

Venue: Industrial Visit to Jayalakshmi Oil and Chemical Industries Limited, Dokiparru, Guntur, Andhra Pradesh.

Participant's:

51 Students of I MBA (2016-2018 batch) and 2 Faculties from Department of Master of Business Administration, ALIET.

Description about the Visit:

Industrial visit has its own importance in a career of a student who is pursuing professional courses like MBA. Industrial visit helps to combine theoretical knowledge with practical knowledge. The objective of this industrial visit is to provide students an insight regarding internal working of companies. It provided them with an opportunity to learn practically through interaction, working methods and employment practices. It gave them an exposure to current work practices.

Fifty six second year students along with three faculties from department of Master of Business Administration reached the company around 10.30 AM by college bus. Mr. R. Banerjee Babu, Sr. General Manager - who is working as Production Manager received there. After Introduction All The Students Were headed by the manager of the company who helped us to understand how production is carried out in the company. Maximum Production is carried out by means of machinery sub-divided into various activities like inception of raw materials, mixing process and then converting into finished goods. The entire visit gave a wonderful experience to the students in learning practical side of the industrial



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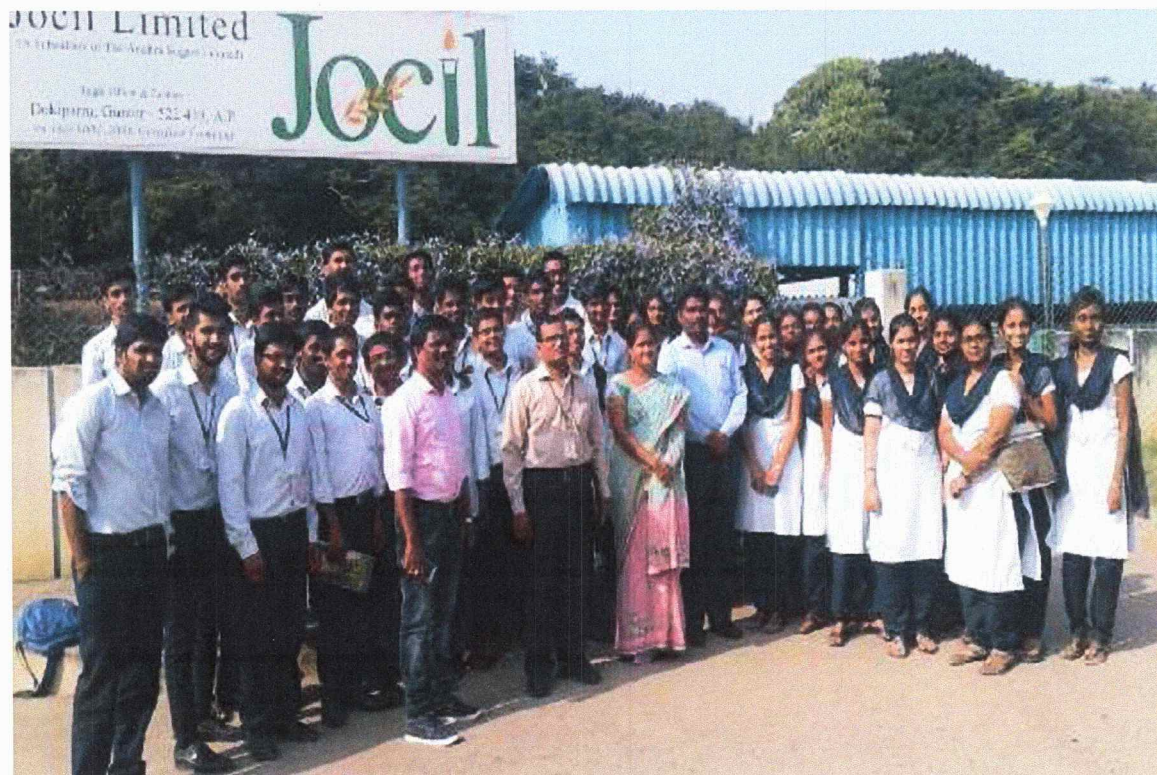
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management.

Glimpses of event



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DEPARTMENT OF BUSINESS ADMINISTRATION

Industrial Visit to Hindustan Coca-Cola Beverages Pvt. Ltd. Atmakur, Andhra Pradesh

Title: Industrial Visit to Hindustan Coca-Cola Beverages Pvt, Ltd. Atmakur, AP-to provides students an insight regarding internal working of companies.

Date(s): 21-02-2017 - 08.30AM – 02.00PM

Venue: Industrial Visit to Hindustan Coca-Cola Beverages Pvt, Ltd. Atmakur, AP

Participant's:

51 Students of I MBA (2016-2018 Batch) and 4Faculties from Department of Master of Business Administration, ALIET.

Description about the Visit:

Industrial visit has its own importance in a career of a student who is pursuing professional courses like MBA. Industrial visit helps to combine theoretical knowledge with practical knowledge.The objective this industrial visit is to provide students an insight regarding internal working of companies. It provided them with an opportunity to learn practically through interaction, working methods and employment practices. It gavethem an exposure to current work practices.

Fifty second year students along with three faculties from department of Master of Business Administration reached the company around 9.30 AM by college bus. Mr. Siva Reddy who is working as Public Relations and Marketing Executive received there. They have shown a video which represents the whole coca-cola company working process. After that they accompanied students to visit the factory each division wise. The entire visit gave a wonderful experience to the students in learning practical side of the industrial management.

Report Submitted by:Dr.C. Lakshminath, Mr.N.JanardhanaRao, Mrs.V.Nagalakshmi .

Designation(s): Professor, Assistant Professor, Assistant Professor



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DEPARTMENT OF BUSINESS ADMINISTRATION

Department: Department Master of Business Administration.

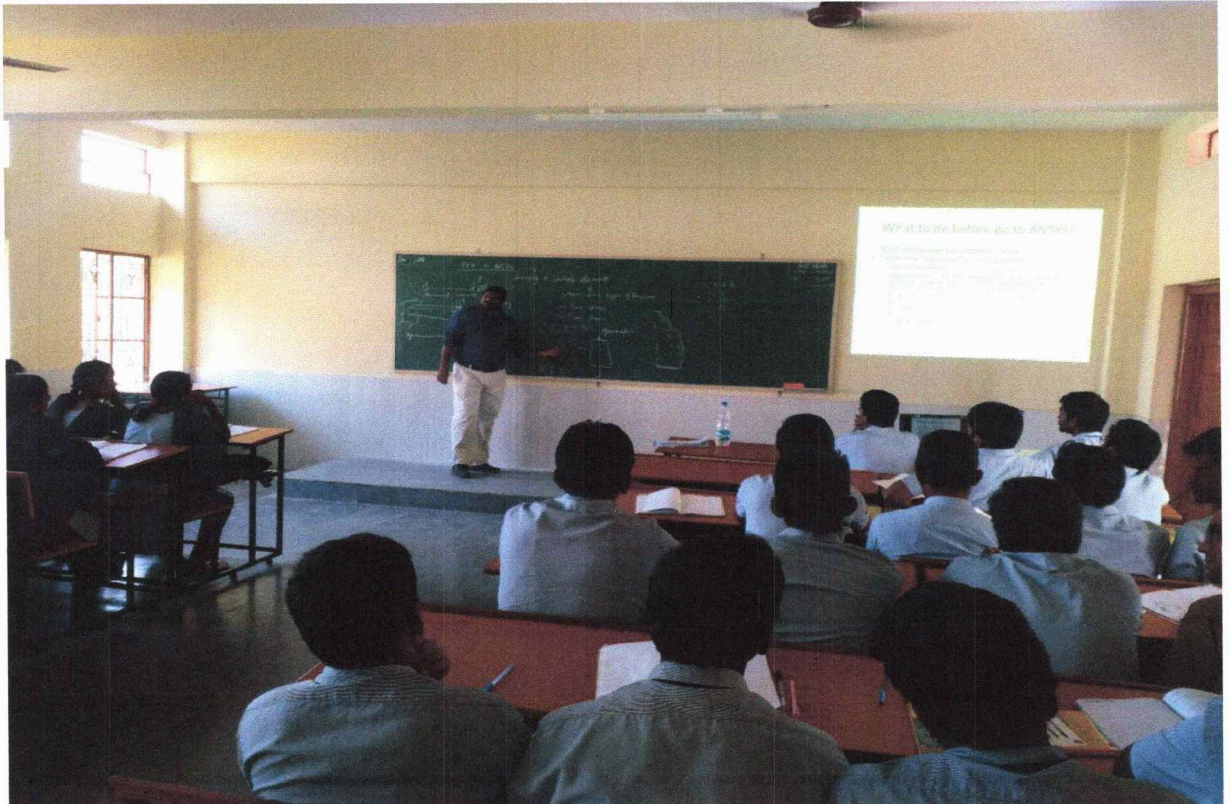
Glimpses of the Event




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Departmental Activities (Guest lectures & FDP)

- Mr. P. Chandrasekhar from Loyola-ICAM College of Engineering and Technology conducted guest lecture on **Finite element analysis** from 29/1/16 to 30/1/16 for III year students (120 members).



- Mr. P. Hari hara sakthisudhan from Loyola-ICAM College of Engineering and Technology conducted guest lecture on Mechanics of Solids 29/1/16-30/1/16 for II-year mechanical and civil students (90+90).
- Mr. D. James Deepak from Loyola-ICAM College of Engineering and Technology conducted guest lecture "Thermodynamics" from 29/1/16 to 30/1/16 for II year students (120).

- Dr.Madhavan Pillai from Loyola-ICAM College of Engineering and Technology conducted guest lecture on Fluid Mechanics from 19/2/16-20/2/16 for II year mechanical and civil students(90+90).



- Dr.Moses from Loyola-ICAM College of Engineering and Technology conducted guest lecture on Ref&Air Conditioning from 19/2/16-20/2/16 for III year students (120)



- Mr.Glynn John from Loyola-ICAM College of Engineering and Technology conducted guest lecture on Robotics from 19/2/16-20/2/16 for III year mechanical students(120).



- Mr.MohamedAaziff from Loyola-ICAM College of Engineering and Technology conducted guest lecture on Dynamics of machinery from 19/2/16-20/2/16

- T.VijayBhanu from CAD Solutions, Vijayawada conducted faculty development programme on Structural Analysis, Thermal Analysis & CFD using ANSYS from 25/2/16-27/2/16 (A group of 36 faculty members were participated from various engineering colleges in this programme)



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Reviewing editor:
Kun Chen, Wuhan University of
Technology, China

Additional information is available at
the end of the article

ELECTRICAL & ELECTRONIC ENGINEERING | RESEARCH ARTICLE

A micro level electrostatically actuated cantilever and metal contact based series RF MEMS switch for multi-band applications

T. Lakshmi Narayana^{1,2}, K. Girija Sravani¹ and K. Srinivasa Rao^{1*}

Abstract: In this paper, a micro level electrostatically actuated cantilever and metal contact based series RF MEMS Switch is designed and analyzed using Finite Element Method Tool. The designed switch is simulated and the performance is verified over the frequency range 0.8–20 GHz. In investigation, it is noticed that the performance of the RF MEMS Switch is decided by the actuation voltage, insertion losses, isolation losses and reliability. The switch designed in this paper achieved a constant insertion losses of -0.08 to -0.14 dB, isolation losses of -58 to -20 dB. This work also concentrated on the cantilever actuation voltage, and it is reduced to 3.55 V by using less weight polymer material like Poly Tetra Fluoro Ethylene (PTFE). The series metal contact based electrostatically driven switching is created in Microstrip Transmission line using cantilever structure associated with gold contact material. The designed RF MEMS switch is preferable in the design and implementation of reconfigurable communication devices like microstrip based antennas and RF filters.

Subjects: Materials Science; Nanoscience & Nanotechnology; Technology; Radio, Satellites, Television & Audio; Telecommunication; Semiconductors

Keywords: transmission lines; MEMS technology; RF switches; FEM tools



K. Srinivasa Rao

ABOUT THE AUTHOR

K. Srinivasa Rao was born in Andhra Pradesh, India. He received his Master's & PhD degree from Central University. He is presently working as a professor & head of Microelectronics Research Group, Department of Electronics & Communication Engineering in KL University, Guntur, Andhra Pradesh, India. His current research areas are MEMS actuators, Bio-MEMS, RF MEMS. He received Young Scientist Award from Department of Science & technology, Government of India in 2011. He also received UGC Major Research Project in 2012. Presently he is working on MEMS project worth of 40 Lakhs funded by SERB, Government of India. He has published more than 80+ International research publications and presented more than 35 conference technical papers around the world. He is member of IETE, ISTE, and IEEE.

PUBLIC INTEREST STATEMENT

Micro Electro Mechanical Systems (MEMS) is an eminent technology, which will facilitates miniaturization, low power consumption, high performance. Because of this reason the MEMS technology is adopted in many applications. Especially in RF applications like RF Switches, Phase shifters, Filters design MEMS technology is referred by many researchers.

- A micro level electro statically actuated cantilever and metal contact based series RF MEMS Switch is designed and analysed using Finite Element Method Tool.
- The designed switch is simulated and the performance is verified over the frequency range 0.8–20 GHz.
- In investigation, it is noticed that the performance of the RF MEMS Switch is decided by the actuation voltage, insertion losses, isolation losses and reliability.
- The switch designed in this paper achieved constant insertion losses of -0.08 to -0.14 dB, isolation losses of -58 to -20 dB.

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Digital Object Identifier 10.1109/ACCESS.2018.2883353

Fabrication and Characterization of Capacitive RF MEMS Perforated Switch

K. SRINIVASA RAO¹, (Member, IEEE), LAKSHMI NARAYANA THALLURI^{1,2}, (Member, IEEE), KOUSHIK GUHA³, AND K. GIRIJA SRAVANI^{1,3}

¹MEMS Research Center, Department of Electronics & Communication Engineering, Koneru Lakshmaiah Education Foundation (Deemed to be University), Guntur 522502, India

²Dr. A. P. J. Abdul Kalam Research Forum, Department of Electronics and Communication Engineering, Andhra Loyola Institute of Engineering and Technology, Vijayawada 520008, India

³National MEMS Design Center, Department of Electronics and Communication Engineering, National Institute of Technology at Silchar, Silchar 788010, India

Corresponding author: K. Srinivasa Rao (srinivasakarumuri@gmail.com)

This work, Fabrication of the Device was supported by CeNSE, Indian Institute of Science, Bengaluru, through the Ministry of Electronics and Information Technology (MeitY), Govt. of India.

ABSTRACT In this paper, we have designed, simulated, fabricated, and characterized a clamped-clamped micro mechanical structure-based shunt capacitive RF MEMS switch. The clamped-clamped micromechanical structure is micromachined using a gold metal thickness of 500 nm. AIN is used as a dielectric material, and it is deposited using the dc sputtering PVD process. In the MEMS technology, particularly in devices fabrication, releasing the membrane is a difficult task, and here, we have presented a novel wet process to release the membrane. Primarily, the S1813 sacrificial layer is etched by using the piranha solution and cleaned with the IPA solution. Critical point drying is done after fabrication to reduce the stiction effect on the switch. Overall, the switch requires the pull-in voltage of 5.5 V for 1.8- μm displacement. In the process of optimization, primarily, the switch is designed and simulated using finite-element method tools. The reliability of the capacitive RF MEMS switches depends on the stiction problem caused by dielectric charging, and the proposed capacitive switch dielectric charging behavior is characterized using the CV curve method.

INDEX TERMS CPW transmission line, MEMS Technology, micromachining, metal and dielectric material deposition, MEMS structure release, dielectric charging.

I. INTRODUCTION

Last few decades, MEMS technology based communication devices like filters, switches, phase shifters and antennas are showing significant domination when compared with traditional Solid State Technology (CMOS and FET) devices. The present and future communication applications like cognitive radios and *ad hoc* networks require low loss reconfigurable antennas with enhanced features in terms of frequency and polarization. RF MEMS switches are showing great potential in terms of low loss and high isolation to design reconfigurable antennas at microwave range [1]–[4].

Prior to fabrication, design and simulation are the basic concerns in the process of RF MEMS switch optimization in terms of dimensions and materials. At design and simulation level of RF MEMS switches, reducing the pull-in voltage, increasing the isolation, analysis of stiffness of the membrane to avoid buckling and to improve the reliability, easing the release, selection of thin films are the major

research issues. Low pull-in voltage and low power consumption of RF MEMS switches improves the battery backup of the communication devices. The low pull-in voltage enables the interface of MEMS devices with integrated circuits. If the switch is offering high isolation we can avoid the RF leakages in reconfigurable devices [5]–[15].

Buckling and stiction are the two major challenging issues in fabrication process which are influencing the reliability factor of RF MEMS switch [16]–[26]. Since the RF performance of the switch depends on the bridge height, the buckling or stiction is an undesired effect. Critical point drying (CPD) helps to avoid the stiction failures caused by dielectric charging [27]–[29]. Few methods like pull-in voltage finding and CV curve shifting are popular to characterize the dielectric charging behavior of the capacitive RF MEMS switches [30]–[35]. The main objective of this paper is fabrication low pull-in voltage and high isolation offering minimum stiction shunt capacitive RF MEMS switch.

Cantilever and Circular Disc Structure Based Capacitive Shunt RF MEMS Switches

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M Durga Prakash
 Department of ECE,
 K L University, Green Fields,
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Lakshmi Narayana Thalluri
 Research Scholar, Department of ECE, K L University,
 Department of ECE, ALIET, Vijayawada.

Abstract- This paper mainly discuss the aspects in the design and simulation of rectangular cantilever and circular disk micro strip transmission line based capacitive RF MEMS switches. In both the designs the structure is placed on a silicon dioxide (SiO₂) dielectric material with dielectric constant of 4.5 and the thickness of 1 μ m. Here an analysis is done by taking different metals (Al, Au, Cr, Cu, Pd, PT, Ti, W) of thickness 1 μ m as structural material and observed the deformation, capacitance variations, and switching time. It is good for aluminum metal as a Micro-strip material. And compared to circular disk structure, rectangular cantilever is giving good performance of better displacement of 0.9 μ m and capacitance variation of 0pF - 5.5pF for the actuation voltage of 2.55V. This paper extended the analysis by extracting the lumped circuit for the microstrip transmission line based RF MEMS Switch, after doing the lumped analysis, it is proved that aluminum based cantilever structure exhibiting negligible losses of 0.1dB.

Index Terms- RF MEMS Switches, FEM, Transmission Lines, Material Science.

I. INTRODUCTION

Switching devices has more importance in the design of electronic circuits which are having so many applications, but in special cases like satellite and aerospace applications require the lossless switches, to fulfill this requirement lot of research is advanced in last few decades. And given the solution with RF MEMS switches which can provide good performance when compared with CMOS, GaAs technology based switches, but still there is a scope to extend the performance of the RF MEMS Switches, by reducing the pull-in voltage, by increasing the reliability, and finally by reducing the switching time. This paper mainly discusses the ways to reduce the pull-in voltage, and compares the rectangular cantilever structure and circular disk structure micro-strip transmission line bases RF MEMS capacitive switches.

II. THEORETICAL ANALYSIS

In switches used in satellite and space communication need high reliability, low losses, less power consumption, and high operating frequency. The existing switches like CMOS technology based FET, GaAs technology based PiN

Diode are failed to provide good reliability, low power consumption and mainly the high frequency operation. So alternatively there exist MEMS technology using this there is a scope to design RF MEMS Switches based on transmission line. In this a transmission line is used to transmit radio frequency signal, and a switching action is created by applying addition pull-in voltage to the transmission line. There exist different types of transmission line but coplanar and microstrip are suitable to design RF MEMS Switches. In this paper, two different structure RF MEMS Switches are designed based on microstrip transmission lines shown in figure 1.

A. Microstrip Transmission lines:

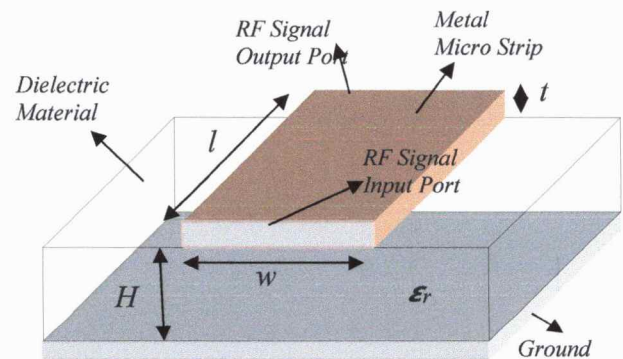


Figure 1: Microstrip Transmission Line

B. Lumped analysis of micro strip transmission line:

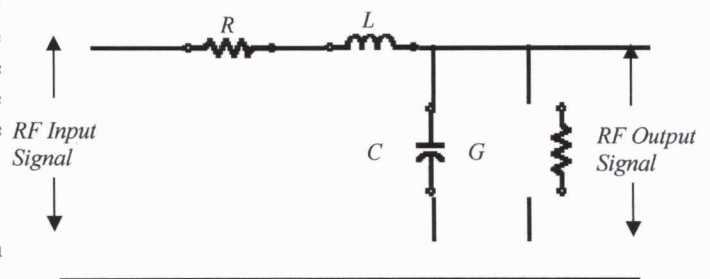


Figure 2: Lumped Analysis of Microstrip Transmission Line



5th International Conference of Materials Processing and Characterization (ICMPC 2016)

Statistical analysis of mechanical properties of vakka fiber reinforced polypropylene composites using Taguchi method

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^dMechanical Engineering Department, University College of Engineering, JNT University Kakinada, Kakinada -533003, A.P, India.

Abstract

In the present study, Vakka fiber polypropylene (PP) composites fabricated and tested for their mechanical properties. The effect of matrix modification on mechanical properties investigated. Maleic anhydride grafted polypropylene (MAPP) is added to matrix and the mechanical properties of MAPP Vakka fiber composites were found to increase considerably compared with those of PP composites. Experiments conducted using Taguchi L_{12} orthogonal array considering the two design parameters viz. weight fraction of the fiber and treatment. The experimental results were analyzed using Taguchi optimization method. Analysis of variance (ANOVA) carried out to obtain the significant values of tensile strength, flexural strength, and impact strength at 95 % confidence level. Multiple regression analysis technique is applied to obtain the mathematical model for tensile, flexural and impact strengths.

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Selection and peer-review under responsibility of Conference Committee Members of 5th International Conference of Materials Processing and Characterization (ICMPC 2016).

Keywords: Polypropylene, Corn fiber, MAPP, S/N Ratio, ANOVA;

1. Introduction

There has been a developing enthusiasm for using fibers as support to create composite materials. Researchers lean toward thermoplastic polymeric lattices than thermosets because of the low generation cycle, lower expense of preparing and high reparability of thermoplastics. Different natural fibers are generally utilized as support as a part of thermoplastic polypropylene (PP) matrix material to get ready composites [1]. The utilization of regular fiber polypropylene composite materials in basic applications expanding in the most recent years due to their points of interest in bio degradability, recyclability, ease, ecofriendly and low thickness [2]

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Selection and peer-review under responsibility of Conference Committee Members of 5th International Conference of Materials Processing and Characterization (ICMPC 2016).



A study on "Financial Performance of Cooperative Dairy Units in Andhra Pradesh" - A Case Study with Krishn, Guntur and Prakasam districts

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Assistant Professor, Andhra Loyola Institute of Engineering and Technology, Vijayawada.

ABSTRACT

Dairy industry is highly concentrated industry with the top five sectors constituting the majority of the country's Gross Domestic Product and national income. This paper is an attempt to evaluate the financial performance of the selected cooperative dairy units in the state of Andhra Pradesh with the help of some financial indicators, regression and chi square test. Measuring current and past profitability and estimating future profitability is very important. For this purpose the study of the cooperative sector units were selected.

KEYWORDS : Gross Domestic Product, Financial Performance, Financial Indicators

Introduction

Indian economy is basically rural. Agriculture is the main occupation of our rural area. The growth of agriculture still holds the key for economic and social upliftment of the rural people. The economic development of the country is largely linked with its rural development because majority of our population live in the villages. The rural dwellers depends directly or indirectly on agriculture for live hood. India ranks first among the world's milk producing nations, achieving an annual output of 137.68 million tonnes of milk during the year 2013-14 as compared to 132.43 million tonnes in 2012-13 recording a growth of 3.96 percent. The anticipated milk production in the country for the year 2014-15 is about 142 million tonnes. The dairy industry contributes a largest share of India's agricultural gross domestic product (GDP), dairying has been considered as one of the activities aimed at alleviating the poverty and unemployment, especially in the rural areas, rain-fed and drought-prone regions. In India, about three-fourth of the population lives in rural areas and about 38 percent of them are poor. Dairying is an important source of subsidiary income to small/marginal farmers and agricultural labourers. The per capita availability of milk has reached a level of 307 grams per day during the year 2013-14, which is more than the world average of 294 grams per day. About 15.46 million farmers have been brought under the ambit of 1,62,600 village level dairy cooperative societies up to March, 2014. The cooperative milk unions have procured an average of 34.2 million kgs of milk per day during the year 2013-14 as compared to 33.5 million kgs in the previous year recording a growth of 2.1 percent. The sale of liquid milk by cooperative sector has reached 29.4 million litres per day during the year 2013-14 registering a growth of 5.8 percent over the previous year. Thus cooperative dairy sector has been making a significant contribution to the Indian dairy sector.

Andhra Pradesh is one of the 29 states in India. The primary occupation of the people in Andhra Pradesh is agriculture. The total reported population of Andhra Pradesh is 4.97 crores. People of rural areas and the landless agricultural labours take up dairying as a source of supplementary income. Until last decade cooperative dairies played a predominant role in Andhra Pradesh. During this period dairy industry has to cope with the rapid transformations that had taken place in Indian economy. There has been huge interest in dairy farming as a business in Andhra Pradesh in the last one decade. Hundreds of dairy firms were opened with most modern design, equipment and best breed animals. But not even 50 percent of those dairy firms are operational now. Even the cooperative dairy firms which occupied predominant place until the last decade faced several operational problems due to the entry of new private firms.

Research Methodology: Objectives of the study

- To Assess the past performance, Current position and Progress

of the selected Cooperative Dairies in Andhra Pradesh during the period of study.

- To find out the efficiency of asset utilization in selected Cooperative Dairies of Andhra Pradesh.
- To make recommendations for improving the financial position of selected cooperative dairies in the state of Andhra Pradesh.

Sources of data collection

The main source of data used for the study is secondary, derived from the annual reports of selected district cooperative dairy units in the state of Andhra Pradesh information available in Trading account, Profit and loss account and balance sheets.

F - Test of Return on Investment on Gross Capital Employed

We have used two way Analysis of Variance (ANOVA) to study the effect of two independent factors namely dairy and year on return on investment on gross capital employed. Null hypothesis is formed such that the difference appeared is not significant, alternative hypothesis is taken as the difference appeared is significant. When the calculated value is greater than the table value of F, null hypothesis is rejected and alternative hypothesis is accepted. When calculated value of F is less than the table value, null hypothesis is accepted and alternative hypothesis is rejected.

Statement of hypothesis of ROI on Gross Capital Employed

Statement of hypothesis of ROI on Net Capital Employed

$H_{0A} = \mu_1 = \mu_2 = \mu_3$ i.e. ROI on Gross Capital employed do not differ significantly among the dairies.

$H_{0B} = \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = \mu_7 = \mu_8 = \mu_9 = \mu_{10}$ i.e. ROI on Gross Capital Employed do not differ significantly among the years.

H_{1A} at least two of the means are different i.e. ROI on Gross Capital Employed differ significantly among the dairies.

H_{1B} at least two of the means are different i.e. ROI on Gross Capital Employed differs significantly among the years.

F-test of R5OI on Gross Capital Employed

Sources of variations	Sum of Squares	Degree of Freedom (D.F)	Mean square	F ratio
Between dairies	1545.23	2	772.62	12.23
Between years	2187.51	9	243.06	3.85
Residual (Error)	1137.02	18	63.17	
Total	4869.76	29		



PMME 2016

Production of Surface Composites by Friction Stir Processing -A Review^{*}

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Professor, Kallam Haranadha Reddy Institute of Technology, Guntur, 522019, India

Associate Professor, Jawaharlal Nehru Technological University, Kakinada, 533003, India

Abstract

Friction Stir processing (FSP) is a novel method derived from friction stir welding process in which a groove or hole was made in the matrix material in which reinforcement particles are dispersed using a tool. This paper gives the information on the various matrix material and reinforcement particles used. The Microstructure using scanning electron microscope (SEM), micro hardness using Vickers hardness testing technique, tool material used and effect of parameters like tool rotational speed and traverse speed were studied. Important suggestions for the new researchers to produce efficient surface composites that are useful for practical applications of friction stir processing.

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Selection and Peer-review under responsibility of International Conference on Processing of Materials, Minerals and Energy (July 29th – 30th) 2016, Ongole, Andhra Pradesh, India.

Keywords: Surface Composites, SEM, Micro hardness.

1. Introduction

Friction stir processing is a novel solid state technique which is derived from friction stir welding for producing

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STUDIES ON CHARACTERIZATION OF AL 6061/ MOS₂ METAL MATRIX COMPOSITE

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K .Rama Kotaiah

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Sciences, Vinjanampadu, Guntur, Andhra Pradesh, India

ABSTRACT

The investigations on the characterization of Al 6061 base metal matrix composite (MMC) reinforced with Molybdenum disulphide (MoS₂) samples are reported in this paper. Aluminium MMC prepared with MoS₂ powder of particle size of less than 2 μ m, with weight ratios of 1, 2, 3, 4, 5 & 5.5 %. These composites were prepared by using stir casting technique. A series of tests were conducted to evaluate mechanical properties such as tensile strength, yield strength, impact strength and hardness for the specimen. The results were compared with base alloy. The results are revealing that the hardness and tensile strength increased with increase in wt. % of reinforcement particles in the matrix up to 4% and the hardness and tensile strength decreased for 5 % , 5.5% addition of reinforcement in the matrix. Investigations show that the MMC with 4% of MoS₂ have better mechanical properties i.e. hardness and tensile strength yield strength.

Keywords: Al-6061, Mechanical properties, MMC, MoS₂ powder, Stir casting

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Studies on Characterization of Al 6061/ Mos₂ Metal Matrix Composite, International
Journal of Mechanical Engineering and Technology 8(8), 2017, pp. 998–1003.
<http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=8&IType=8>

1. INTRODUCTION

In the last two decades, research has shifted to composite materials to meet the global demands. This led to the concept of combining different materials. Metal matrix composites (MMCs) are increasingly becoming attractive materials for advanced aerospace applications

ON DOMINATION OF FUZZY GRAPHS AND FUZZY TREES

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Andhra Pradesh, India

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February 9, 2017

Abstract

The object of this paper is to generalize the dominations in fuzzy graphs. In this paper we discuss the concept of edge domination, total edge domination in fuzzy graphs. Further we extend to vertex edge domination and perfect vertex (edge) domination in operations of fuzzy graphs, observe the disparity between strong (weak) dominations and equitable domination in fuzzy graphs. In this paper we extended our study to domination in fuzzy trees and derived some results related to the above dominations in fuzzy graphs and prompt some applications on them like as traffic light problems, networking problems, transportation and banking services

AMS Subject Classification: 05C75

Key Words and Phrases: Total edge domination, perfect vertex (edge) domination, strong (weak) and equitable dominations in fuzzy graphs and fuzzy trees.



RADMAS- 2016

STUDY ON FUZZY GRAPHS AND APPLICATIONS

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² Department of Mathematics, KL University, Vijayawada.

Email : munny.aliyet@gmail.com

Abstract

In this paper we study fuzzy graph is the generalization of the ordinary graph, here fuzzy graph is a simple fuzzy graph. A necessity of fuzzy graphs is introduced. Define regular fuzzy graphs, totally edge regular fuzzy graphs, partially edge regular fuzzy graphs, fuzzy dual graphs derive the properties as dual of fuzzy bipartite graph is Eulerian fuzzy graph. We are using fuzzy logic in so many areas like as modeling traffic and transportation problems, telecommunications, job allocation and at ATM centers.

Key words: Fuzzy graph, regular fuzzy graph, fuzzy bipartite graph, Eulerian graph

1. INTRODUCTION

One of the remarkable mathematical inventions of the 20th century is that of Fuzzy sets by Lotfi.A.Zadeh in 1965. His aim was to develop a mathematical theory to deal with uncertainty and imprecision. Researches on the theory of fuzzy sets has been witnessing an exponential growth both within mathematics and in its applications, this ranges from traditional mathematical subjects like logic, topology, algebra, analysis, etc. to pattern recognition, information theory, artificial intelligence, operation research, neural networks and planning, etc. The advantage of replacing the classical sets by Zadeh's fuzzy sets is that it gives more accuracy and precision in theory and more efficiency and system complatability in applications. So in systems with imprecision, a fuzzy set model is more valuable than a classic model. The distinction between set and fuzzy set is that the set divide the universal set into two subsets, namely members and non-members while fuzzy set assigns a sequence of membership values to elements of the universal set ranging from 0 to 1. That is partial memberships are allowed in tha latter. Also fuzzy sets can be used effectively to study quality variables like intelligence, beauty, consistency, etc., Zadeh's paper "Fuzzy sets" also proved the way to a new philosophical thinking of Fuzzy logic which now, is an essential concept in artificial intelligence.

Fuzzy graphs are useful to represent relationships which deal with uncertainty and it differs greatly from classical graph. The first definition of Fuzzy graph by Kaufman(1973) was based on Zadeh's fuzzy relations(1971). After that Rosenfeld(1975)[1] who considered fuzzy relation on fuzzy sets and developed the theory of fuzzy graphs. The author introduced fuzzy analogues of several graph theoretic concepts such as subgraphs, paths and connectedness, cliques, bridges and cut nodes, forest and trees, etc. During the same time, Yeh and Bang(1975) also introduced fuzzy graphs independently and studied various connectedness concepts such as connectivity matrix, reachability matrix, degree of connectivity, edge connectivity, vertex connectivity etc. These results are applied directly to clustering analysis include fuzzy trees, fuzzy line graphs, operations on fuzzy graphs, automorphism of fuzzy graph fuzzy interval graphs cycles and cocycles of fuzzy graphs, bipartite



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Date:-11.05.2017

To,
The Head of Department,
Andhra Loyola Institute of Engineering And Technology,
Vijayawada -520008..

Dear Sir,

Sub: - Permission for **PROJECT WORK** to M.B.A student - Reg.

Ref: - Your letter dated 08-05-2017

With reference to your letter cited above, we would like to inform you that we can provide permission for one of your college student **Mr. THOTA POORNA SAI Reg No.16HP1E0044, M.B.A (Finance)** for Project work in our Organization during the period **29-05-2017 TO 01-07-2017** Please ensure that the student has to submit a copy of project work report to the factory.

Please make a note that we will not pay any stipend during the training period and he should obey the rules and regulation of the company.

Thanking You,

Yours faithfully
For COROMANDEL AGRO PRODUCTS AND OILS LIMITED

(TELLA SURESH)
COMMERCIAL MANAGER

CERTIFICATE

This is to certify that **Mr. Ch. GOPI KRISHNA** bearing **Roll No.15HP1E0030** student of **“ANDHRA LOYOLA INSTITUTE OF ENGINEERING AND TECHNOLOGY”**, Vijayawada has undertaken project work titled **“A STUDY ON CUSTOMER SATISFACTION WITH REFERENCE TO MAHINDRA BOLERO”**, from 01.06.2016 to 02.07.2016 in partial fulfillment of the requirement for the award of **MASTER OF BUSINESS ADMINISTRATION** and submitted the report.

During the above training programme the student has been associated with marketing and actively contributed to experiential learning process.

Thanking You,

Mr. J.Narash Kumar

Personnel Officer (HR)



ANDHRA LOYOLA INSTITUTE OF ENGINEERING AND TECHNOLOGY,VIJAYAWADA

Title: Industrial Visit	
Date(s): Prathap Industries & G S Alloys Limited ,Vijayawada on 09.02.2017- 10.00AM – 04.00PM	
Industry Visited:	Prathap Industries & G S Alloys Limited, Vijayawada
Participant's: MECH II YEAR STUDENTS The student's team consisting of 60 Students will be lead by TWO Faculty Members.	
Description about the Visit: MECH II YEAR STUDENTS visited The Krishna District Prathap Industries & G S Alloys Limited, Vijayawada as part their academic activity. Real time field visit will enhance the student's exposure to production processes. The present visit helped the students to know about Modeling, casting, machining, joining, shearing and forming processing practices.	
Faculty accompanied: Mr. SPK. Mithra and Mr. M. Sudhakar	

Designation(s): Assistant Professor

Department: Department of Mechanical engineering

Glimpses of Industrial Visit:



Industrial Visit - at the entrance
Mechanical II YEAR students along with Faculty.

for
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Title: Industrial Visit
<ul style="list-style-type: none">Date(s): Third year students Dr. NTPPS visit ON 17/2/2016 & 18/2/2016.- 10.00AM – 04.00PM
Industry Visited: Dr. NTPPS Limited, Vijayawada
Participant's: MECH III YEAR STUDENTS The student's team consisting of 60 Students will be lead by TWO Faculty Members.
Description about the Visit: MECH III YEAR STUDENTS visited The Krishna District Dr. NTPPS Limited, Vijayawada as part their academic activity. Real time field visit will enhance the student's exposure to production processes. The present visit helped the students to know about Turbine, Boiler, Water processing, coal transformation, processing practices.

Faculty accompanied: Mr. E. Durgesh, Mrs. N. Sudha Rani


Designation(s): Assistant Professor

Department: Department of Mechanical engineering

Glimpses of Industrial Visit:



Industrial Visit - at the entrance
Mechanical III semester students along with Faculty.


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Vijayawada – 520 008
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 15-3-2017

Industry Visited:


Coca-Cola Beverages PVT. Ltd, Peda vadlapudi, Mangalagiri, Guntur. 9581122789

Participants:

IV B. Tech ECE-2, I Semester 60 students and Two faculty members

Description about the Visit:

Hindustan Coca Cola Beverages Pvt Ltd is a Wholesale Distributor of coco cola soft drinks in Vijayawada, Andhra Pradesh. This industry is having a bottling unit at peda vadlapudi, Mangalagiri, Guntur. The students are been exposed to different PLC driven automatic bottling process and allied industrial automation procedures. A team of 60 IV B. Tech ECE students along with 2 faculty members has visited the industry.


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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 14-3-2017

Industry Visited:


Coca-Cola Beverages PVT. Ltd, Peda vadlapudi, Mangalagiri, Guntur. 9581122789

Participants:

IV B. Tech ECE-1, I Semester 60 students and Two faculty members

Description about the Visit:

Hindustan Coca Cola Beverages Pvt Ltd is a Wholesale Distributor of coco cola soft drinks in Vijayawada, Andhra Pradesh. This industry is having a bottling unit at peda vadlapudi, Mangalagiri, Guntur. The students are been exposed to different PLC driven automatic bottling process and allied industrial automation procedures. A team of 60 IV B. Tech ECE students along with 2 faculty members has visited the industry.


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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 28-12-2016

Industry Visited: BSNL Exchange, Auto Nagar Vijayawada, 9441033399

Participants:

III B. Tech ECE-1, II Semester 60 students and Two faculty members

Description about the Visit:

An industrial visit has been organized by department of ECE for the III year ii semester students on 28th December 2016. The main objective of the visit is to provide a technical exposure to the students about switching and routing of telephone calls, establishment and maintenance of exchange.

The students along with faculty has visited auto-nagar telephone exchange. The engineers has explained about switching, transmission, CDMA, cellular network etc., followed by a visit to P&T colony, MG road BSNL branch, where engineers has demonstrated the working of landlines and Internet services



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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 13-7-2017

Industry Visited:

Indian Meteorological Department, Machilipatnam, 08672-222800,231801

Participants:


IV B. Tech ECE-1, I Semester 60 students and three faculty members

Description about the Visit:

The meteorological department has setup a radar station at Machilipatnam to various aspects of environment such as humidity, pressure, rainfall, temperature, cyclones, wind flowage direction, gas intensity in air and clouds. Though it's raining heavily radome will protect the antenna because of its hydrophobic surface. A team of 40 students and 2 faculty visited the station and a got know how of working and applications of RADAR for meteorological applications.



IV B. Tech ECE I Students at Radar station. Machilipatnam


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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 25-6-2016

Industry Visited:

Indian Meteorological Department, Machilipatnam, 08672-222800,231801

Participants:

IV B. Tech ECE-2, I Semester 40 students and three faculty members

Description about the Visit:

The meteorological department has setup a radar station at Machilipatnam to various aspects of environment such as humidity, pressure, rainfall, temperature, cyclones, wind flowage direction, gas intensity in air and clouds. Though it's raining heavily radome will protect the antenna because of its hydrophobic surface. A team of 40 students and 2 faculty visited the station and a got know how of working and applications of RADAR for meteorological applications.



IV B. Tech ECE II Students at Radar station, Machilipatnam

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(Approved by AICTE, New Delhi & Affiliated to JNTUK, Kakinada)
Vijayawada – 520 008
DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 13th March, 2017- 10.00AM – 5.00PM

Industry Visited: Praksam Barage, **Ultra Tech Cements Private Limited**, Vaddeswaram, PRECA

Participant's:

II Year II Semester 60 students and Three faculty members

Description about the Visit:

- As part of the practical exposure, all the Second Year Civil Engineering students were taken to Prakasam Barrage, Mr. Gopinath, AE had explained about History of the Barrage, the repair works going on and how the age of the Barrage is increased with additional reinforcement provided in near Tail Pond and approach area.
- II/IV B.Tech Civil Engineering students were shown how Ready MIX Concrete is prepared and transported and placed during the construction at **Ultra Tech Cements Private Limited**, Vaddeswaram. Its Manager, Mr. SWAROOP, had explained how a Concrete Mix is calculated and prepared. Also taught them different types of admixtures and plasticizers used in RMC.
- II/IV B.Tech Civil Engineering students were given a practical procedure on how pre-cast members are made and assembled by Mr. Jury and Mr. Daniel, Managing Directors, PRECA, Israel and Mr. Satish, MD, India had accompanied them.

Report Submitted by: Mr. G.Lenin Reddy, Mrs.A.Tejaswini, Ms.N.Divya

Designation(s): Associate Professor, Assistant Professor, Assistant Professor



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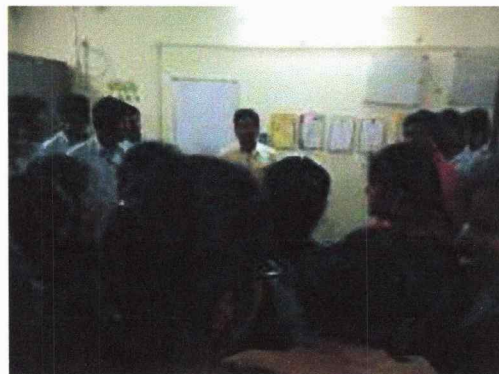
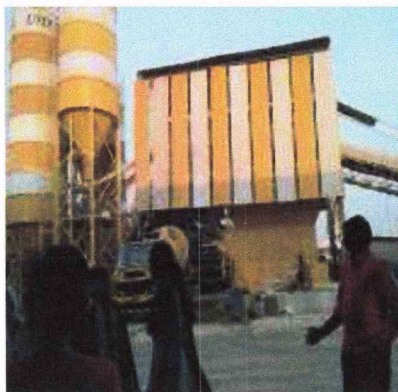
DEPARTMENT OF CIVIL ENGINEERING

Department: Department of Civil Engineering

Glimpses of Industrial Visit:



II B.Tech students were taken to Praksam Barage



II B.Tech students were taken to **Ultra Tech Cements Private Limited**, Vaddeswaram



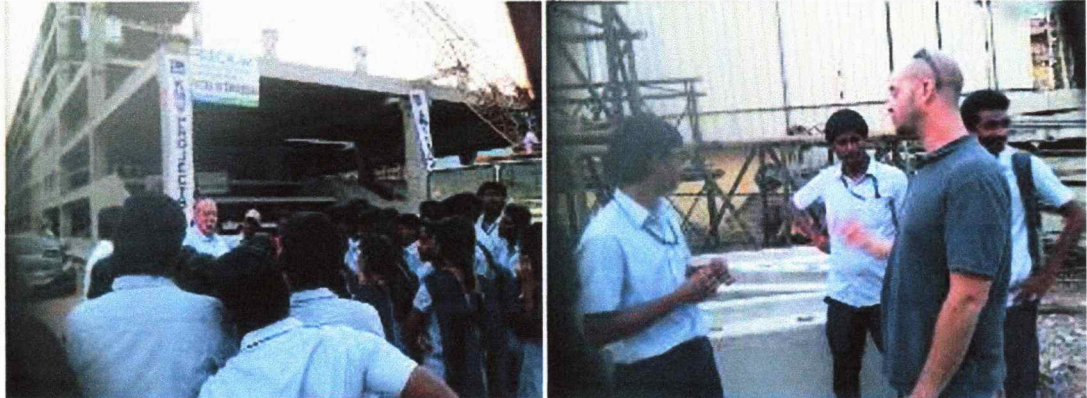
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Students has been educated by Mr. Jury and Mr. Daniel MDs of PRECA, ISRAEL

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DEPARTMENT OF CIVIL ENGINEERING

Industrial Visit Report

Title: Industrial Visit

Date(s): 30th November , 2016- 10.00AM – 4.00PM

Industry Visited: KLR Water Works, Bhavanipuram, Vijayawada

Participant's:

III Year II Semester 60 students and Two faculty members

Description about the Visit:

III Year II Semester visited The KLR Water Works, Bhavanipuram, Vijayawada as part their academic activity. Real time field visit will enhance the student's exposure to practical knowledge

The present visit helped the students to know about the water treatment .In water treatment plant the total process of treating water is explained by AE of that treatment plant and various steps involved in the treating process are clearly observed by the students.

Report Submitted by: Mr. Lenin Reddy, Mrs. A.Tejaswi

Designation(s): Assistant Professor, Assistant Professor

Department: Department of Civil Engineering



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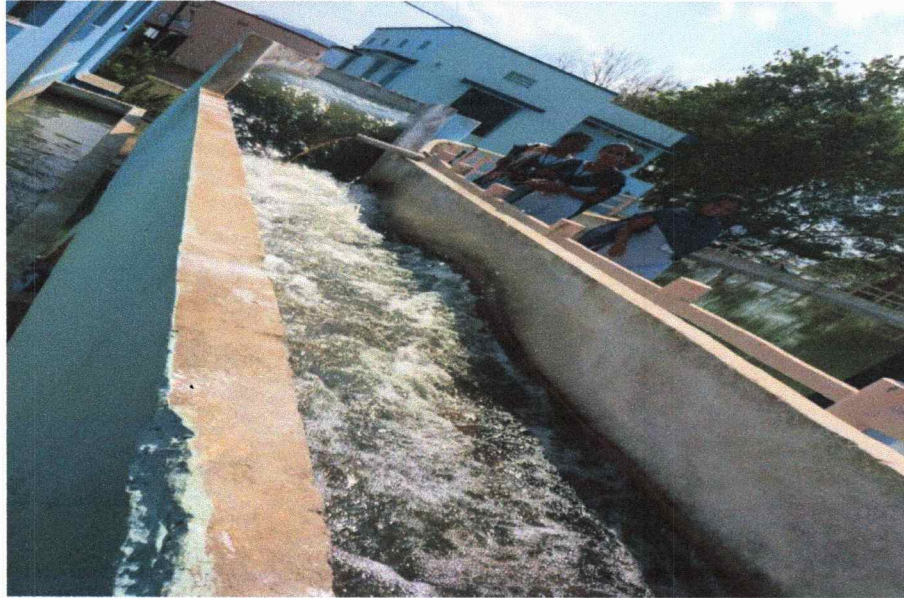
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Glimpses of Industrial Visit:



Industrial Visit – 30.11.2016 at the KL Rao Water Treatment Plant
Civil III year II semester students along with Faculty

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