3.5.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship during the year 2020-2021

S. No.	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participant	Year of collaboration	Duration	Nature of the activity	Link to the relevant document	Page No
1	Internship -Solar PV Plant Design, -PCB Designing- Embedded Systems-	Teck Team Solutions, Visakhapatnam https://teckteamsolutions.com	II BTECH EEE-49 Students II BTECH ECE-111 Students III B TECH ECE-55 Students	09-11-2020 to 24-11-2020 01-12-2020 to 16-12-2020	2 weeks	Internship		6
2	Internship -Artificial Intelligence	10G Minds, Visakhapatnam https://www.10gminds.com/	II B TECH CSE- 190 Students	05-04-2021 to 17-04-2021	2 weeks	Internship		18
3	Internship -Hardware and Networking Internship - AutoCAD	DATAPRO computer Pvt. Ltd, Visakhapatnam https://www.datapro.in/	I B TECH CSE CSD CSM- EEE MECH 386 Students III BTECH CIV-32 Students	15-05-2021 to 28-05-2021	2 weeks	Internship		23
4	Internship -Finite Element Analysis, AutoCAD 2D &3D	R Radiant Engineering Services https://rrenggservices.com/	III B TECH Mech -147 Students II B TECH Mech - 154 Students	09-11-2020 to 24-11-2020	2 weeks	Internship		28
5	Internship-Types of Substation and Layout- Amazon Web Services	IGIAT, Visakhapatnam	III B TECH EEE-58 Students III B TECH CSE-98 Students	09-11-2020 to 24-11-2020	2 weeks	Internship		33

6	Research Collaboration	GITAM,Visakhapatnam Mr. T. Ravi Babu Mr. C. Dharma Raj Dept of ECE razh1976@gmail.com dharmaraj.cheruku@gitam.edu.in	Dr. V. Adinarayana	2020-21	90 Days	Research	https://doi.org/10.30534/ijeter/2020/26872020	37
7	Research Collaboration	Vignan's Institute of information Technology, Visakhapatnam Mrs. CH. Swapna Priya Department of CSE, swapnachsp@gmail.com	Dr. V. Adinarayana	2020-21	90 Days	Research	https://doi.org/10.30534/ijeter/2020/26872020	37
8	Research Collaboration	Gudlavalleru Engineering college Mr. D Prabhakar, Dept of ECE, prabhakar.dudla@gmail.com	Dr. V. Adinarayana	2020-21	90 Days	Research		38
9	Research Collaboration	Andhra Layola Institute of Engineering and Technology C.H. Rajendra Babu Dept of CSE, chikkalarajendra@gmail.com,	Dr. V. Adinarayana	2020-21	90 Days	Research		38
10	Research Collaboration	Anil Neerukonda Institute of Technology and sciences Mr. K. Mural Krishna Department of ECE, Vizianagaram, AP mkasi71@yahoo.com	Dr. V. Adinarayana	2020-21	90 Days	Research		39

11	Research Collaboration	NIT Warangal Mr. B Satish Ben Department of Mechanical Engineering drsatishben@gmail.com	Dr. B Avinash Ben	2020-21	90 Days	Research	https://doi.org/10.1007/s10965-021-02458-5	40
12	Research Collaboration	NIT , Tiruchirapalli Mr. Santhosh Kumar Department of Physics, Tamil Nadu santhoshmc@nitt.edu	Dr.R.Swapna	2020-21	90 Days	Research	https://doi.org/10.1016/j.matpr.2020.05.715	41
13	Research Collaboration	GITAM , Visakhapatnam Mr. Jai kumar Sagari, Dept of Mechanical Engineering sagari.jaikumar1@gmail.com	Mr. SK.Hidayatulla Shariff	2020-21	90 Days	Research	https://link.springer.com/article/10.1007/s40095-021-00405-0	42
14	Research Collaboration	Baba Institute of Technology and Sciences, Visakhapatnam, P B Narendra Kiran, Assistant Professor	Dr. V Sai Prasanth	2020-21	90 Days	Research	https://turcomat.org/index.php/turkbilmat/article/view/5167/4323	43
15	Research Collaboration	Andhra University , Visakhapatnam, Dr. G. Sasibhushan Rao, Dept of ECE sasi_gps@yahoo.co.in	Mr. V. Siva Bhaskar Rao	2020-21	90 Days	Research		44

16	Research colloboration-Ph.D.	Andhra University, Visakhapatnam	Mr. Madda Raghava Rao	16-5-2018	3 years	Research		45
			Mr. Juthiga Jagadish	16-5-2018	3 years	Research		46
			Mr. Ramu Garugubilli	01-02-2021	3 Months	Research		48
			Mr. K K R Parimala	01-02-2021	3 Months	Research		48
			Mr. Vommi Pradeep Kumar	22-5-2018	3 years	Research		49
			Mr.A.Arjun Rao	13-03-2014	7 Years	Research		52
17	Research colloboration-Ph.D	GITAM , Deemed to be University , Visakhapatnam	Mr. Sheik Hidayatulla Shariff	13-6-2019	2 years	Research		54
			Mr. S Kesav Rao	14-09-2020	9 Months	Research		55
			Mr. K. Avinash Kumar	11-03-2014	7 years	Research		56
18	Research colloboration-Ph.D	KLU , Deemed to be University , GUNTUR	Mrs K.Syamala	20-01-2021	3 Months	Research		57
			Mrs P Srilakshmi	20-01-2021	4 Months	Research		58
19	Research colloboration-Ph.D	Jawaharlal Nehru Technological university , Ananthapur , AP	Mr. Pulli Suresh Kumar	07-01-2017	4 years	Research		59

| 20 | Master Class on MATLAB & SIMULINK | APSSDC-Pantech Solutions | B Anand Swaroop | 23-11-2020 to 22-12-2020 | 1 Month | Faculty - Training | https://www.pantechsolutions.net/wp-content/uploads/certificates/PS-IETE-INTERNSHIP-1734.jpg | 60 |
| 21 | Internship Program on MATLAB | IETE Mumbai-Pantech Solutions | B Anand Swaroop | 01-09-2020 to 30-09-2020 | 1 Month | Faculty - Training | https://www.pantechsolutions.net/wp-content/uploads/certificates/PS-APSSDC-MATLAB-2511.jpg | 61 |

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- ❖ Solar panel orientation and positioning
- ❖ Solar panel orientation & tilt
- ❖ Solar Energy Tracking System
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❖ Working on hardware testing

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❖ Design schematics and PCB layout for circuits •

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❖ Working on PCB design and assembly

❖ Working on microcontroller PCB design

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- ❖ **Introduction to Substation Automation**
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Compressed Sensing Channel Estimation with FBMC-Based Large Scale MIMO using Gaussian Mixture Learning

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ABSTRACT

Filter Bank based Multi-Carrier technique is a viable solution to obtain higher spectral efficiency, out-of-band emissions, higher energy and extended data rates over Orthogonal Frequency Division Multiplexing (OFDM) of future 5G applications. To achieve the significant gains at the massive MIMO-FBMC system, low complexity compressed sensing method serves along with the generalized approximate message passing (GAMP) algorithm is proposed into time-domain scenarios. However, the sparsity estimation between the communicating channels, non-zero vector distribution can be taking into consideration the Gaussian mixture accordingly, learn their characteristics towards the expectation-maximization procedure. The results of the simulation have proved the performance of the proposed estimation approach of channel keeping with minimum pilot overhead and developed exceptional Bit Error Rate (BER) performance of the system.

Key words: Approximate message passing, Compressed sensing, Channel estimation, Gaussian Mixture, Massive MIMO-OFDM.

1. INTRODUCTION

The huge demand of high data rates in 5G technology, the conventional MIMO antenna system needs to extend massive MIMO to increase the potential support of spectral efficiency, reliability & overall system capacity [1, 5]. The subsequent work analyzed on massive MIMO systems [2], to provide higher spectral efficiency using simple techniques of transmission and reception. Because of more number of transmitters and receivers are using at massive MIMO systems, the CSIT acquisition resembles as a most challenging problem [15].

In FDD systems no channel reciprocity attained due to usage different frequencies in uplink and downlink transmission. Usually, estimating pictures of the channel requires a specific sequence to train provided that information of the previous outputs received in course of training on standard procedure is available. Additional feedback is required for getting the statistics of non-stationary MIMO. To circumvent this situation, a novel technique of CSI determination along with feedback strategy giving accurate reliable CSIT having reduced complexity as well as overhead is desirable. Compressed sensing is offers suitable method for estimating short sequence type of sparse with unknown statistics [11, 12]. In this paper, combined of LS and CS techniques are used to obtain estimation in FDD [15, 16] having various of sparse and dense vectors. Due to improved recovery performance methods in [3], Bayesian estimation scores over other equivalent methods; it can increase monitoring of fractional space of the channel by reducing pilot overhead.

The Massive MIMO-FBMC is preeminent and supportive technology to 5G wireless applications that has to maintain excellent data rate and accuracy. To achieve these eminent properties, knowledge of channel information is a most challenging issue in massive MIMO- FBMC systems, therefore, it is necessary to apply relevant estimation techniques to channels between all transmitting and receiving antennas accordingly. In general, communicating channels are inherently sparse; however, the majority of channels viewed as zero coefficients at channel impulse response (CIR). With a focus on channel sparsity, we implemented the compressed sensing method to characterize the channel properties of the proposed model [1].

The sparsity adaptive matching pursuit (SAMP) provides high performance at a wide range of practical applications without channel sparsity. However, there is inconsistency between convergence speed and recovery accuracy because SAMP has maintained a constant step size [2, 3]. OFDM is one of the modulating systems that provide to mitigate interference and cross talk resulting from the conversion of the serial data stream into parallel data stream at different frequencies. OFDM massive MIMO compressed sensing based channel estimation is set as sparse and dense vectors.

A Hybrid Approach on Metamaterial-Loaded Fractal Antenna Design

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Abstract – The paper provides the interoperable hybrid Grasshopper–Grey Wolf optimization (GHGWO) of the Square Split-Ring Resonator (SRR) metamaterial unit cell. This paper discusses the complex phase strategies of the electric and magnetic interplay of the charged microstrip line of the split ring resonator (SRR). Optimized unit of metamaterial cells for their bandwidth enhancement is packed into a new square fractal antenna. In the interim period of dual band efficiency, a new design is introduced for a microstrip line-feeding square fractal antenna with a faulty ground composition. In the second stage, a quasi-static SRR model is being used to streamline its structural parameters in an effort to reinforce the bandwidth so that optimized composition resonates at the required intensity area. In the GHGWO hybrid algorithm, SRR unit cell size limitations should be optimized and the convergence actions of the algorithm improved. Certain evolutions termed modified hybrid BF-PSO classical BFO, chaos PSO and IWO are being tested for efficiency of the Hybrid GHGWO algorithm. In the final stage, optimized SRR unit cells are stacked into a square fractal antenna that provides bandwidth output suited to wireless usages with upper and lower band. The prototype square fractal antenna without and with SRR unit cells is efficiently evaluated by trial results.

Index Terms – Grasshopper–Grey Wolf Optimisation (GHGWO), metamaterial unit cell, quasi-static SRR model and microstrip line, Split-Ring Resonator (SRR).

I. INTRODUCTION

An antenna is known as a broadband unless its impendence or configuration varies considerably over about one octave or more [5]. In contemporary wireless transmission networks the miniaturization of antenna layout focused on fractal geometry is of significant importance [1].

In this study, we are proposing a new model of a three-step square fractal antenna. The bandwidth of the planned fractal antenna is increased by partial ground plane on the reverse side of a substratum. Secondly, we prioritize bandwidth in the built fractal antenna with the use of MTM unit cells with optimized split-ring resonator. A hybrid Grass Hopper [2], and grey wolf optimization [2] (GHGWO) algorithm are used to optimize structural variables in split ring resonant unit cells. However, a disadvantage of these techniques is the extensive amount of CPU times utilized in determining the numerical solution compared to the fully explicit methods for the same selection of values. Thus if we were to write them in matrix form, the coefficient matrix would be penta diagonal. The rest of paper is structured as follows: Section II discusses the brief review of hybrid GHGWO algorithm is proposed, Section III comprises of experimental results, and Section IV gives a brief conclusion.

Bilal Babayigit et al. [3] developed a Taguchi Method (TM) to model a non-side lobe level deletion (SLL) optimization for the CAA (non-uniform circular antenna array). TM, a rigorous design strategy, incorporated the numerical nature of experiments as a signal to noise ratio and orthogonal array devices. Such methods decrease the design parameters rather than complete factor evaluation, thus increased the rate of convergence and produced more precise solutions. TM's high output in achieving reduced SLLs was demonstrated by experimental results.

Although the methods mentioned above often focus on the problem of the fractal antenna design more effectively for various kinds of problems, there exist some obvious shortages when compared with other algorithms.

Estimation of Sparse Channel using Bayesian Gaussian Mixture and CS-Aided Techniques for Pilot Contaminated Massive MIMO System

T. Ravi Babu, C. Dharma Raj, V. Adinarayana, K. Murali Krishna

Abstract: Massive MIMO is established by future wireless communication systems to facilitate real-time user applications with having a higher of data transfer rates and spectral efficacy through perfect channel knowledge. Many pilot reuse schemes are working to improve channel performance regarding pilot overhead and channel knowledge. However, the pilot contamination becomes a major challenging issue in massive MIMO applications due to erroneous channel state information between neighboring cells. To tackle this issue, analyzing to the estimation of channel parameters in the preferred paths and interference from neighboring cells in the underdetermined system is essential. For estimating the channel behavior over Sparse Bayesian and Compressed sensing Aided methods are proposed by surviving the Pilot contamination effects by changing the angular to beam domain for sparse channel approximation. Simulation results have demonstrated the effectiveness of Bayesian and compressed sensing by compared with the standard estimators in connection with estimation accuracy, especially in pilot contamination.

Index Terms: Bayesian Gaussian Mixture, Compressed Sensing, Channel Estimation, Massive MIMO, Pilot Contamination

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ORIGINAL PAPER

Check for updates

Effect of epoxy resin healing agent viscosity on the self-healing performance of capsules reinforced polymer composite

Raj Kumar Pittala[1] · Satish Ben B[1] · Avinash Ben B[2]

Abstract

The structural integrity of micro and nano cracked polymer composites can be re-established without human intervention by employing biologically inspired capsule based self-healing system into the base material. In the present study, in order to evaluate the influence of core materials viscosity on the self-healing performance, two types of epoxy resins (LY556, CY230) of respective viscosities 10-12 Pa.s, 1.3-2 Pa.s and amine hardener (HY951) of viscosity 0.01–0.02 Pa.s were chosen and encapsulated in a thermoplastic poly methylmethacrylate (PMMA) shell. The mean capsule size of the developed LY556 epoxy,CY230 epoxy microcapsules and HY951 hardener microcapsules were measured as 61.58 μm, 67.64 μm and 63.31 μm respectively. Influence of core to shell(c/s) ratio on the preparation of epoxy capsules was investigated and 1:1 c/s ratio, 2:1 c/s ratios were recommended as an ideal ratios to prepare LY556, CY230 epoxy capsules respectively. Fourier Transform Infrared (FTIR), Nuclear magnetic resonance (NMR) and thermogravimetric(TGA) analysis were conducted. Tensile strength, fracture toughness and self-healing performance of the (LY556 + HY951) capsules, (CY230 + HY951) capsules reinforced epoxy composites were investigated. It was noticed that the tensile strength decreases and the fracture toughness increases with the increase in capsules concentration from 0wt% to 10wt%. In both the cases, it was found that the healing efficiency increased with the increase in capsules content. For both (LY556 + HY951) capsules reinforced, (CY230 + HY951) capsules reinforced epoxy composites an optimum capsules concentration was found to be at 7.5wt% and the respective measured healing efficiencies were noted as 66% and 72%.

Keywords Epoxy resin · Amine hardener · Poly methyl methacrylate (PMMA) · Self-healing performance · Epoxy composite

Introduction

Since the last decade thermosetting polymers and polymer composites are receiving tremendous interest from the research community due to their attractive properties such as high stiffness to weight ratio, corrosion resistance and tailorable properties [1]. Even though polymeric structures have most of the desired properties their usage is restricted in the few fields due to their sensitivity to micro cracking [2]. During service conditions, the microcracks developed in the structure propagates further and thus leads to catastrophic failure of the component. In order to address such issues and to develop crack independent repair strategies few authors [3–5] suggested the use of self-healable materials technology. Self-healing of polymeric materials can be achieved through two approaches namely extrinsic and intrinsic. In extrinsic approaches propagating crack itself acts as stimulus and the response will be autonomic repair of the crack without any human intervention whereas in intrinsic approaches any of the external stimulus such heat, pressure or light are necessary to initiate the crack repair. Extrinsic approaches include encapsulation [6, 7], hollow fibre [8] and microvascular networks [9] and intrinsic approaches include polymer blends [10], supramolecular interactions with reversible bonds[11]. While several strategies were investigated, one of the most versatile and successful method to achieve self-healing is microencapsulation.

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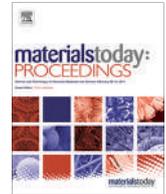
Enhanced physical properties of ZEO thin films for device applications

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ARTICLE INFO

ABSTRACT

Transparent conducting Eu doped ZnO thin films are deposited on glass substrates by spray pyrolysis technique. The effect of Eu doping on surface morphology, structural and electrical properties of ZnO thin films are studied. The structural analysis reveal that the films are crystallized in the wurtzite phase with preferred orientation along (002) plane. EDX and elemental mapping results establish the presence and distribution of Eu, Zn and O for the ZEO thin films. The Hall measurement results demonstrate that the Eu doped ZnO (ZEO) films have n-type conduction. The n-type ZEO thin films with comparatively low resistivity of 2.93×10^{-3} Ω cm and relatively high carrier concentration of 5.18×10^{19} cm^{-3} are obtained at doping level of 2 at.%. The mobility values of ZEO thin films decrease from 28.4 cm^2 V^{-1}s^{-1} to 1.02 cm^2 V^{-1}s^{-1} with increase of dopant concentration.

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Selection and Peer-review under responsibility of the scientific committee of the 2nd International Conference on Recent Trends in Metallurgy, Materials Science and Manufacturing.

1. Introduction

Rare earth (RE)-doped semiconductors have been intensively studied for their potential use in optoelectronic devices like visible (blue, green, and red) and infrared luminescent devices [1–3]. Zinc oxide (ZnO) is a II–VI semiconductor with a hexagonal wurtzite structure. Further, it is an inexpensive *n*-type semiconductor with a wide band gap of 3.37 eV [4,5]. This property makes it good candidate as host materials for the visible and infrared emission of various rare-earth ions. On the other hand, rare-earth ions are good luminescence centers due to their narrow and intense emission lines originating from 4f intrashell transition [6]. Moreover, rare-earth complexes have the ability to absorb light at shorter wavelength and emit at a longer wavelength [7,8]. Due to this reason, trivalent rare earth ions (RE^{3+}) doped ZnO have been studied extensively during the last two decades. Eu^{3+} is one of the trivalent rare earth ions which have been doped in ZnO to achieve efficient luminescent and transparent conducting oxide (TCO) properties [6,9].

When Eu is incorporated into the ZnO lattice, Eu^{3+} replaces Zn^{2+} ion in the ZnO crystal lattice resulting in free electrons that contribute to the electric conduction. So, the increase in the electrical conductivity is due to the presence of free carriers introduced by

Eu dopant. Eu doped ZnO (ZnO:Eu) thin films have been deposited by spray pyrolysis technique [10]. The grown films have been characterized by various characterizing techniques. This chapter investigates to study the effect of Eu dopant concentration on the structural, electrical properties and chemical composition of ZnO thin films. Recently Hasabeldaim et al. [11] studied structural, optical and photoluminescence properties of Eu doped ZnO thin filme prepared by spin coating. Sundaram et al. [12] described preparation of Eu-doped Cu_2O thin films using different concentrations by SILAR and their Heterojunction property with ZnO.

2. Materials and methods

For depositing the europium doped ZnO thin films, $Zn(CH_3COO)_2 \cdot 2H_2O$ and $Eu(NO_3)_3 \cdot 6H_2O$ are chosen as the sources of zinc and europium, respectively, for monodoped ZnO films, the spray solution is prepared with 0.1 M $Zn(CH_3COO)_2 \cdot 2H_2O$ (Sigma-Aldrich, 99.5%, Germany) and $Eu(NO_3)_3 \cdot 6H_2O$ (Sigma-Aldrich, 99.9%, Germany) in the 100 ml mixture of deionized water and ethanol (Merck, 99.9%, Germany) at room temperature. A small amount of acetic acid (Merck, 99.9%, Germany) is added into the solution to avoid forming milky precipitate of hydroxides. The europium concentration is varied from 1 to 10 at.% and the total concentration of the solution is maintained at 0.1 M. The spray nozzle is at a distance of 10 cm from the substrate during deposition [10,13]. The spray deposition is carried out at a

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ORIGINAL RESEARCH

Experimental study on direct injection diesel engine fuelled with ferric chloride nanoparticle dispersed *Cassia Fistula* biodiesel blend

Sheik Hidayatulla Shariff[1] · Srinivas Vadapalli[2] · Jaikumar Sagari[2]

Abstract

The present work investigates the influence of surface-modified ferric chloride ($FeCl_3$) nanoparticles mixed *Cassia Fistula* oil biodiesel blend (B20) for assessing combustion, performance, and emission parameters of diesel engine. $FeCl_3$ nanoparticles were dispersed in three different concentrations as 50 ppm, 75 ppm, and 100 ppm. QPAN 80 dispersant was used as a dispersant to modify the surface of $FeCl_3$ nanoparticles. The stability study of the prepared fuel dispersions was carried out for a period of one month using UV spectroscopy. B20 blend dispersed with $FeCl_3$ nanoparticles has shown good stability. A tremendous improvement in engine operating parameters was seen with nanofuel and the injection pressure (IP) together. At higher IP of 220 bar, the brake thermal efficiency (BTE), cylinder pressure (CP), and net heat release rate (NHRR) were found to have improved by 3.14%, 5.81%, and 22.92% whereas the brake-specific fuel consumption (BSFC) was lowered by 3.89%. The emissions in terms of carbon monoxide (CO), unburnt hydrocarbons (UHC), nitrogen oxide (NO_x), and smoke were noticed to have lowered by 42.68%, 9.73%, 14.68%, and 23.02%, respectively, for B20 + 75 ppm $FeCl_3$ + 75 ppm dispersant as compared to regular diesel.

Keywords Dispersant · *Cassia Fistula* · Cylinder pressure · Emission · Cetane number

Abbreviations

B100	100% *Cassia Fistula* Biodiesel
B20	20% *Cassia Fistula* In diesel
B20 + 50 ppm $FeCl_3$ + 50 ppm dispersant	20% *Cassia Fistula* In diesel + 50 ppm Ferric Chloride nanoparticles + 50 ppm dispersant
B20 + 75 ppm $FeCl_3$ + 75 ppm dispersant	20% *Cassia Fistula* In diesel + 75 ppm Ferric Chloride nanoparticles + 75 ppm dispersant
B20 + 100 ppm $FeCl_3$ + 100 ppm dispersant	20% *Cassia Fistula* In diesel + 100 ppm Ferric Chloride nanoparticles + 100 ppm dispersant
ppm	Part per million
ASTM	American standards for testing materials
NaOH	Sodium hydroxide
SEM	Scanning electron microscope
DSC	Differential scanning calorimetry
FTIR	Fourier-transform infrared spectroscopy
BTE	Brake thermal efficiency (%)
BSFC	Brake-specific fuel consumption (kg/kWh)
CP	Cylinder pressure (bar)
NHRR	Net heat release rate (J/degree CA)
ADC	Analogue to digital converter
IP	Injection pressure
CO	Carbon dioxide (%)

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Customers Perception with Reference to Customer Relationship Management in Organized Retail in Visakhapatnam

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[b] Assistant Professor, Baba Institute of Technology and Sciences, Visakhapatnam, AP

Abstract: The article explains the customer perception with reference to Customer Relationship Management (CRM) in organized retail sector of Visakhapatnam city. This study was done with a sample size of600 customers to investigate their opinion about the quality of offered customer services by organized retails stores and its impact on customer satisfaction. The study is focused on services provided by organized retailer like Spencer's, More, Reliance fresh, Big Bazaar and others in Visakhapatnam city. The findings show an indication that the customer perception depends on Positive attitude towards Customers, Flexible timings of purchase/ exchange, and Better grievance process.

Keywords: Customer Perception, Customer Relationship Management (CRM), Retail Industry

1. Introduction

Customer perception is driven by more than a reason. The customers perceptions have a serious influence on in what way they interact with you and in what way they buy based on

Make (brand), its services or products, and its standards. Indeed, creating idealistic insights can profit you accumulate a "reasonable, authentic, and developing consumer/customer base," as specified by Forbes.

"In marketing, 'customer/consumer perception' refers to clients' mindfulness, their impressions, and their conclusions about your business, items, and brand. Client discernment is formed by various factors, including immediate and backhanded connections with your contributions." "Nowadays, buyer decision-making is influenced by perception and is a "massive success factor in the retail industry," Deloitte reports. Brands who screen and comprehend customer perception and its contributing components can more readily distinguish freedoms to improve client encounters. Indeed, Forrester characterizes client experience as "your customer's perceptions of their interactions with your brand" by 2020, 'customer experience' will overtake 'price' and 'product' as the key brand differentiator, HubSpot reports."

A customer relationship management framework is equipped for gathering and putting away valuable client data about your client base. With robotized information assortment or manual sections, you can fabricate an extraordinary abundance of amazing data that you can use to improve your organization and get more cash-flow.

CRM frameworks are equipped for social affair and putting away information about singular clients.

Such information can include:

➢ Segment data
➢ Shopping designs
➢ Buy history
➢ Inclinations
➢ Contact data
➢ Consumer assistance notes

Customer Relationship Management Role in Retail

Customer History

Customer Relationship Management contains all the client data and details like their previous buying, business visiting cards, telephone numbers. It aides in storing all the historical backdrop of a client so you recognize every last one of them exclusively and you realize who are your customary clients and what are their necessities. Which additionally helps you in for seeing the requests and improving business and makes the customers experience better at your store.

Segmenting

Gathering all the data about the clients permits it to place your clients in various segment so you can go to them likewise. This way you can portion your market. There may be families, adolescents, vegan, non-veggie

Energy Efficiency Maximization in 5G

V. Siva Bhaskar Rao[1] & Dr. G. Sasibhushan Rao[2]
Avanthi Institute of Engineering and Technology[1]
Andhra University[2]
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Abstract: The Energy and Spectral efficiencies are two of the important challenges to be met in fifth generation (5G) cellular networks. A proposal is made to establish relation between Long-Term Evolution (LTE) and 5G networks. The spectral efficiency is maximized by optimizing the energy efficiency using the artificial intelligence mechanism of Particle Swarm Optimization algorithm. When the mobile user is linked to the base station with low power, the effect on spectral and energy efficiencies are calculated through the MATLAB simulation. A network performance improvement in both the spectral and the energy efficiencies are observed when the base station serves the mobile user. The optimized results using PSO algorithm are shown and compared for different modulation systems.

Keywords: Optimization algorithm, Spectral efficiency, Energy efficiency, Long Term Evolution (LTE), Artificial Intelligence, Particle Swarm.

1. Introduction

This study establishes co-operation between LTE and future generation networks. In view of wireless network in 5G domain that aims to compensate the tradeoff between Energy Efficiency(EE) and the performance of wireless network. This is done through switching ON/OFF mechanism in 5G base-stations alternatively based upon traffic load at that instant of time. It also assures the coverage of the wireless network for the mobile subscribers by activating the other left out LTE BS's. Considering particle swam optimization(PSO) algorithm that results in maximum coverage in 5G base station which covers the entire area while user is in switch-OFF session.

In this section, the paper demonstrates the introduction of the 5G and cellular communication which describes the approach to balance between the LTE and 5G.The second section discusses the previous works done in 5G for energy optimization, where different kinds of algorithms have been used. The third section deals with the design methodology through which PSO algorithm is introduced and being used in the next section. Further mathematical model is discussed for PSO which is useful for our approach. Then in section IV simulated results are discussed followed by Conclusions.

2. Literature Survey

Several studies have been conducted on reducing the power consumption using various base station techniques. In paper [1], Dynamic planning was introduced through which the usage of number of active devices were reduced during the low traffic conditions, thus saving the power consumed. Here we consider 3 UTMS schemes, which further describe the 3 classes of services: 1. Quality of service (QOS) 2.Electronic Magnetic and propagation exposure 3.Link budget. By using these schemes the power consumption is reduced by 50 percent. The paper [2] focuses on the UTMS Networks as the active devices are the main reason for the energy consumption. Here, a novel approach is proposed for UTMS energy management. During night, when some devices of the base station are in switched OFF mode, the service and coverage of the network is provided by the remaining active devices. The paper[3]is the extension work of paper[2],in which an optimization technique is proposed, which assumes that a fraction of the cells are to be in turned off state, and then further refers to the constraints which results from the cell layout. In paper[4],the issue of energy consumption is reduced using 2 techniques:

No.AUCE(A)/EG(6)/Res.Admns./2017-2018   Date: 16-05-2018

PROCEEDINGS OF THE PRINCIPAL

Sub   : AUCE (A) – Allotment of Research Guides to Ph.D. (Full-Time) & (Part – Time) for the Candidates admitted through the Directorate of Admissions, A.U., - Orders – Issued.

Read   : Minutes of the meeting of the DRC, held on 15-05-2018 at 10.00 A.M., in the office of the Head, Department of Metallurgical Engineering, A.U. College of Engineering (Autonomous).

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O R D E R:

The Principal, A.U.College of Engineering (Autonomous), Visakhapatnam, having considered the recommendation of the respective Departmental Research Committee of Department of Metallurgical Engineering, AUCE (A), is pleased to order that the allotment of Research Guides to the following candidates who have been admitted into Ph.D. (Full-Time) & (Part – Time) in the Department of Metallurgical Engineering, AUCE (A) through the Directorate of Admissions, A.U., for the academic year 2017-18, be approved.

Sl. No.	Name of the Candidate	Course	Name of the Research Guide/Co-Guide
Ph.D. (Full-Time)			
01	Gorli Siva Kumar	Ph.D. (Full-Time)	Prof.Babu Rao Jinugu
02	Kollabathina Prakash	Ph.D. (Full-Time)	Prof.K.Srinivasa Rao (Guide) Dr.G.Madusudhana (Co-Guide) Reddy,Scientist'H'DMRL,Hyderabad.
03	Gogada Siva Prasad	Ph.D. (Full-Time)	Prof.K.Srinivasa Rao (Guide) Dr.G.Madusudhana (Co-Guide) Reddy,Scientist'H'DMRL,Hyderabad.
04	Ippey Gopi Lakshmi	Ph.D. (Full-Time)	Prof.N.B.R.Mohana Rao
05	Sanke Naga Raju	Ph.D. (Full-Time)	Prof.N.B.R.Mohana Rao
06	Devara Srinu	Ph.D. (Full-Time)	Prof.N.B.R.Mohana Rao
07	Chetarajupalli Geetanjali	Ph.D. (Full-Time)	Prof.K.Srinivasa Rao
Ph.D. (Part-Time)			
01.	Dasari Madhusudhan Rao	Ph.D. (Part-Time)	Prof.K.Srinivasa Rao
02	Madda Raghava Rao	Ph.D. (Part-Time)	Prof.K.Srinivasa Rao
03	Karimulla Shaik	Ph.D. (Part-Time)	Prof.N.B.R.Mohana Rao
04	Kakumanu Teja Swarup	Ph.D. (Part-Time)	Prof.N.B.R.Mohana Rao
05	Sri Ram Vikas K	Ph.D. (Part-Time)	Prof.K.Srinivasa Rao
06	Bula Ratna Kumar Ambedkar	Ph.D. (Part-Time)	Prof.N.B.R.Mohana Rao
07	Kota Anusha raj	Ph.D. (Part-Time)	Prof.Babu Rao Jinugu
08	Bhara Thkumar Chintada	Ph.D. (Part-Time)	Prof.Babu Rao Jinugu

| 09 | Kishor Chandra Mouli L | Ph.D. (Part-Time) | Prof.K.Srinivasa Rao |
| 10 | Juthiga Jagadish | Ph.D. (Part-Time) | Prof.K.Srinivasa Rao |

The Principal has further ordered that the above Ph.D. (Full-Time) & (Part – Time) candidates admitted be directed to submit their joining reports to the Principal, AUCE(A) through the Research Guide and the Head of the Department concerned on or before 31-05-2018 and they be informed the schedules of the Ph.D. Presentations which is scheduled to be held in 3rd week of June and 1st week of December every year and also be directed to pay the prescribed fee within the stipulated period for the subsequent years by following the date of admission fee, failing which their names will be deleted from the rolls.

(BY ORDER)
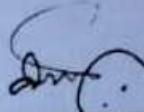
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ANDHRA UNIVERSITY
VISAKHAPATNAM

The Parties,
Head of the Department of Metallurgical Engineering, AUCE (A),
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Copy to the Thesis Section.

ANDHRA UNIVERSITY
COLLEGE OF ENGINEERING (AUTONOMOUS)
VISAKHAPATNAM

Date:02-01-2021

No.AUCE (A)/EG(6)/Res.Admns./2020-21

PROCEEDINGS OF THE PRINCIPAL

Sub : AUCE (A) – Allotment of Research Guides to Ph.D. (FT & PT)) Candidates admitted through the Directorate of Admissions, A.U.- Orders – Issued.

Read : Minutes of the meeting of the DRC held on 24-12-2020, at 10:30 AM in the chamber of the HOD, Department of the Marine Engineering, A.U. College of Engineering (A).

-oOo-

ORDER:

The Principal, A.U. College of Engineering (Autonomous), Visakhapatnam, having considered the recommendations of the Research Committee of Department of Marine Engineering, AUCE (A), is pleased to order that the allotment of Research Guides to the following candidates who have been admitted into Ph.D. (FT & PT) in the Department of Marine Engineering, AUCE (A) through the Directorate of Admissions, A.U., for the academic year 2020-21, be approved.

Sl. No.	Name of the Candidate	Department	Name of the Research Guide/CO-Guide
01	Kari Jagadish Ph.D (FT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)
02	Asokan Vinutha Ph.D (FT)	Marine Engineering	Prof. T.V.K. Bhanu Prakash (Guide)
03	Teella Mahendra Rao Ph.D (FT)	Marine Engineering	Prof. T.V.K. Bhanu Prakash (Guide)
04	Gorle Venkateswara Rao Ph.D (FT)	Marine Engineering	Prof. T.V.K. Bhanu Prakash (Guide) Prof. V.V.S. Prasad (Co-Guide)
05	Mohammad Abdul Razack Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)
06	Gandhi Pullagura Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)
07	V Jyotsna Kalpana Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)
08	Sadhu Prasanth Ph.D (PT)	Marine Engineering	Prof. I.N. Nirajan Kumar (Guide)
09	Yamuzala Sai Ratnakar Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)
10	Ramakrishna Ravada Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)

11	Ramu Garugubilli Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)	✓
12	Hanumantu Kiran Kumar Ph.D (PT)	Marine Engineering	Prof. T.V.K. Bhanu Prakash (Guide)	
13	Satya Kanthi Kiran N Ph.D (PT)	Marine Engineering	Prof. T.V.K. Bhanu Prakash (Guide)	
14	Romala Rajesh Ph.D (PT)	Marine Engineering	Prof. V.V.S. Prasad (Guide)	
15	Varalakshmi Ph.D (PT)	Marine Engineering	Prof. I.N. Niranjan Kumar (Guide) Prof. V.V.S. Prasad (Co-Guide)	
16	K K R Parimala Ph.D (PT)	Marine Engineering	Prof. I.N. Niranjan Kumar (Guide) Prof. V.V.S. Prasad (Co-Guide)	

The Principal has further ordered that the above Ph.D. (FT & PT) admitted candidates be directed to submit their joining reports to the Principal, AUCE(A) through the Research Guides and the Head of the Department concerned on or before 18-01-2021 and they be informed the schedules of the Ph.D. Presentations which are scheduled to be held in 3rd week of June and 1st week of December every year and also be directed to pay the prescribed fee within the stipulated period for the subsequent years by following the date of admission fee, failing which their names will be removed from the rolls.

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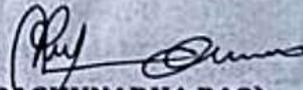
(K.RAGHUNADHA RAO)
ASSISTANT REGISTRAR
COLLEGE OF ENGINEERING (A)
ANDHRA UNIVERSITY
VISAKHAPATNAM

The Parties.
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Copy to the Thesis Section.
O.O.F.

ANDHRA UNIVERSITY
COLLEGE OF ENGINEERING (AUTONOMOUS)
VISAKHAPATNAM

No.AUCE(A)/EG(6)/Res.Admns./2017-2018   Date: 22-05-2018

PROCEEDINGS OF THE PRINCIPAL

Sub   : AUCE (A) – Allotment of Research Guides to Ph.D. (Part – Time) for the Candidates admitted through the Directorate of Admissions, A.U., Orders – Issued.

Read   : Minutes of the meeting of the DRC, held on 16-05-2018 at 10.30 A.M., in the Seminar Hall, Department of Mechanical Engineering, A.U. College of Engineering (Autonomous).

-0O0-

ORDER:

The Principal, A.U.College of Engineering (Autonomous), Visakhapatnam, having considered the recommendation of the respective Departmental Research Committee of Department of Mechanical Engineering, AUCE (A), is pleased to order that the allotment of Research Guides to the following candidates who have been admitted into Ph.D. (Part – Time) in the Department of Mechanical Engineering, AUCE (A) through the Directorate of Admissions, A.U., for the academic year 2017-18, be approved.

Sl. No.	Name of the Candidate	Course	Name of the Research Guide/Co-Guide
01	Mahendra Babu Mekala	Ph.D. (Part-Time)	Prof. M. Pramila Devi (Guide)
02	Pampana Sampath Kumar	Ph.D. (Part-Time)	Prof. N. Ramanaiah (Guide)
03	Alapati Babji	Ph.D. (Part-Time)	Dr. G. Rambabu (Guide)
04	Srinivasa Rao M	Ph.D. (Part-Time)	Prof. K. T. Balaram Padal (Guide)
05	Sreedhara vulloju	Ph.D. (Part-Time)	Prof. P. Srinivas Kishore (Guide)
06	Potturi S Prakash Varma	Ph.D. (Part-Time)	Prof. K. Venkata Subbaiah (Guide)
07	Seelam Suneel Kumar	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
08	Peddi Jagadeesh Babu	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
09	Raju Boddu	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
10	Kothari Venkata Viswanadh	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
11	Y Venkata Ramana Murthy	Ph.D. (Part-Time)	Prof. K. Venkata Subbaiah (Guide)
12	M Ravi Sankara Varaprasad	Ph.D. (Part-Time)	Dr. G. Rambabu (Guide)
13	Vemu Varaprasad	Ph.D. (Part-Time)	Prof. M. Pramila Devi (Guide)
14	Sudhakara Reddy Kalavapalli	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
15	Narendra Kumar Kolla	Ph.D. (Part-Time)	Prof. Ch. Ratnam (Guide)
16	K Suresh Babu	Ph.D. (Part-Time)	Prof. Ch. Ratnam (Guide)
17	Vommi Pradeep Kumar	Ph.D. (Part-Time)	Prof. V. Vijaya Babu (Guide)
18	Srikanth Potluri	Ph.D. (Part-Time)	Prof. M. Pramila Devi (Guide)
19	Srinivasulu Dorasila	Ph.D. (Part-Time)	Prof. R. Madhusudhan (Guide)
20	Turlapati Siva Krishna	Ph.D. (Part-Time)	Prof. L.S.V. Prasad (Guide)
21	Srinivas Pothala	Ph.D. (Part-Time)	Dr. M. V. Jagannadha Raju (Guide)

22	Praveen Kumar Thanikonda	Ph.D. (Part-Time)	Prof. Ch. Ratnam (Guide)
23	V Rukmini Kasarapu	Ph.D. (Part-Time)	Prof. V. Vijaya Babu (Guide)
24	Jasper Johnson Dokiburra	Ph.D. (Part-Time)	Prof. R. Madhusudhan (Guide)
25	Mogathoti Balakrishana	Ph.D. (Part-Time)	Prof. P. Srinivas Kishore (Guide)
26	Dirisala Venkat Ratnam	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
27	Moddem Amareswari Reddy	Ph.D. (Part-Time)	Prof. K. Venkata Subbaiah (Guide)
28	Anil Kumar Chintada	Ph.D. (Part-Time)	Prof. K. T. Balaram Padal (Guide)
29	Bontha Susmitha	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
30	K Krishana Murthy	Ph.D. (Part-Time)	Prof. S.K. Bhatti (Guide)
31	Pavan Kumar Konchada	Ph.D. (Part-Time)	Prof. S.K. Bhatti (Guide)
32	Korukonda V Chandra Mohan	Ph.D. (Part-Time)	Prof. L.S.V. Prasad (Guide)
33	Karun Kumar Yandava	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
34	Nagireddi Kishore	Ph.D. (Part-Time)	Prof. M. Pramila Devi (Guide)
35	Srinivasa Rao Nidamanuri	Ph.D. (Part-Time)	Prof. S.K. Bhatti (Guide)
36	Krishna Prafulla Badi	Ph.D. (Part-Time)	Prof. Ch. Ratnam (Guide) Prof. P. Srinivasa Rao (Co-Guide)
37	Kiran Kumar Chukkala	Ph.D. (Part-Time)	Prof. Ch. Ratnam (Guide)
38	Karri V Ganga Rama Seshu	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
39	Sasidhar Gurugubelli	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
40	Jalli Kantha Rao	Ph.D. (Part-Time)	Prof. R. Madhusudhan (Guide)
41	Mortha Prem Dheeraj	Ph.D. (Part-Time)	Prof. P. Srinivas Kishore (Guide)
42	Mahaboob Subhani Burugula	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
43	Penki Kripa Rao	Ph.D. (Part-Time)	Prof. R. Madhusudhan (Guide)
44	Sunanda Alamuru	Ph.D. (Part-Time)	Dr. M.V. Jagannadha Raju (Guide)
45	Ch Lakshmi Poornima	Ph.D. (Part-Time)	Prof. Ch. Srinivasa Rao (Guide)
46	Santha Kaki	Ph.D. (Part-Time)	Prof. S.K. Bhatti (Guide)
47	Chaitanya Mayee Makkuva	Ph.D. (Part-Time)	Prof. V. Vijaya Babu (Guide)
48	V Bhargavi Boyina Setty	Ph.D. (Part-Time)	Prof. K. Venkata Subbaiah(Guide)
49	Pinjarla Poorna Mohan	Ph.D. (Part-Time)	Prof. K. T. Balaram Padal (Guide)
50	Naga Sudha Rani Behara	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
51	Kornu Mohanlaxmi	Ph.D. (Part-Time)	Prof. V.V.S. Kesava Rao (Guide)
52	Jogi Phani Kumar	Ph.D. (Part-Time)	Prof. Ch. Srinivasa Rao (Guide)
53	Potnuru Sasikala	Ph.D. (Part-Time)	Prof. R. Madhusudhan (Guide)
54	Namburi Hymavathi	Ph.D. (Part-Time)	Prof. L. S. V. Prasad (Guide)
55	Shaik Mujeebur Rehman	Ph.D. (Part-Time)	Prof. Ch. Srinivasa Rao (Guide)
56	Johny Shaida Shaik	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)
57	Allu Harshitha	Ph.D. (Part-Time)	Prof. N. Ramanaiah (Guide)

58	Lavanya Kancharapu	Ph.D. (Part-Time)	Prof. P. Srinivas Kishore (Guide)
59	Kapu Hema	Ph.D. (Part-Time)	Dr. G. Rambabu (Guide)
60	U Pranavi	Ph.D. (Part-Time)	Prof. K. T. Balaram Padal (Guide)
61	M Peeru Naik	Ph.D. (Part-Time)	Prof. K. T. Balaram Padal (Guide)
62	Korra Balanna	Ph.D. (Part-Time)	Dr. G. Rambabu (Guide)
63	Gugulothu Suma Priyanka	Ph.D. (Part-Time)	Dr. G. Rambabu (Guide)
64	Kalyani Teku	Ph.D. (Part-Time)	Prof. L.S.V. Prasad (Guide)
65	Gogineni Sridhara Babu	Ph.D. (Part-Time)	Prof. P. Srinivasa Rao (Guide)

The Principal has further ordered that the above Ph.D. (Part – Time) candidates admitted be directed to submit their joining reports to the Principal, AUCE(A) through the Research Guide and the Head of the Department concerned on or before 07-06-2018 and they be informed the schedules of the Ph.D. Presentations which is scheduled to be held in 3rd week of June and 1st week of December every year and also be directed to pay the prescribed fee within the stipulated period for the subsequent years by following the date of admission fee, failing which their names will be deleted from the rolls.

(BY ORDER)
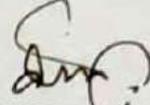
ASSISTANT REGISTRAR
ASSISTANT REGISTRAR
COLLEGE OF ENGINEERING (A)
ANDHRA UNIVERSITY
VISAKHAPATNAM

The Parties,
Head of the Department of Mechanical Engineering, AUCE (A),
Copy to the Concerned Guides,
Copy to the Thesis Section.

DIRECTORATE OF ADMISSIONS
ANDHRA UNIVERSITY, VISAKHAPATNAM
2013 - 2014
ADMISSION ALLOTMENT CUM FEE RECEIPT

Receipt No. MS-1641   Date : 19-Feb-14

STUDENT PARTICULARS

Name : **ANUKU ARJUNA RAO**
F / G's Name : A.CH. APPA RAO
Sex : M
DOB : 14-Sep-77
Reservation / Special Category : SC
Test Code & Name : 74
Hall Ticket No : 74525
Rank : 14

ADMISSION PARTICULARS

College : A.U.College of Engineering (A), VSP
Course : Ph.D. (Part-Time) Electrical Engineering
Admitted Category : SC(w)-SC(G)

COURSE FEE PARTICULARS

Tuition Fee : 20,000.00
Special Fee : 500.00   {Library Fee}
Admn. Fee : 0.00
Caution Deposit : 0.00
Examination Fee : 0.00
Total Course Fee : 20,500.00

PARTICULARS OF FEE PAID

D.D. No.	Date	Name of the Bank	Amount
11364/C	19-Feb-14	AB	20500.00
11364/C	19-Feb-14	AB	1000.00

Signature of Director / Nominee

Sub : AUCE (A) - Allotment of Research Guides to Ph.D. (Full-Time / Part-Time/Part-Time under Executive Category), admitted Candidates through the Directorate of Admissions, AU-Orders-Issued.

Ref : Minutes of the meeting of the DRC, Department of Electrical Engineering held on 08-03-2014 at 03.00 PM and received on 12-03-2014.

* * *

ORDER:

The Principal, AU College of Engineering (Autonomous), Visakhapatnam, having considered the reference read above, is pleased to order that the allotment of **Research Guides/ Co-Guides** to the following candidates who have been admitted into Ph.D. (Full-Time / Part-Time/ Part-Time under Executive Category) in the **Department of Electrical Engineering AUCE (A)** through the Directorate of Admissions, AU for the year 2013-2014 as recommended by the respective Departmental Research Committee of AUCE (A) be approved.

S.no	Name of the Candiadate	Course	Name of the Research Guide/Co-Guides.
01.	Narasimhulu Tamminana.	Ph.D. (Full-Time)	Prof. P. Mallikarjuna Rao.
02.	Ramesh. M.	-do-	Prof. T. R. Jyothsna.
03.	Manoj Kumar Merugumalla.	-do-	Dr. N. Prema Kumar.
04.	Kusuma Gottapu.	-do-	Prof. T. R. Jyothsna.
05.	Joshua Arubakan.	-do-	Prof. K. Vaisakh.
06.	B. Kiran Karunakar Rao.	-do-	Prof. K. Vaisakh.
07.	Anantha Babu Palaparthi.	-do-	Prof. K. Rama Sudha.
08.	Lovalakshmi Tamarana.	-do-	Dr. M. Gopichand Naik.
09.	Illa Sudhakar Babu.	-do-	Prof. G. V. Siva Krishna Rao.
10.	Anantha Lakshmi V.	Ph.D. (Part-Time)	Prof. T. R. Jyothsna.
11.	Viswanath .B.	-do-	Prof. T. R. Jyothsna.
12.	Subuddi Naga Raju.	-do-	Prof. K. Vaisakh (Guide) Dr. A. Srinivasa Reddy Professor, Dept. of EEE, Sir C.R. Reddy College of Engg. (Co-Guide).
13.	Bala Murali Surakasi.	-do-	Prof. P. Mallikarjuna Rao.
14.	Murali Vantaku.	-do-	Prof. P. Rama Sudha.
15.	Ravi Shankar Alluri.	-do-	Prof. T. R. Jyothsna.
16.	Venu Madhav Mukkavilli.	-do-	Dr. M. Gopichand Naik.
17.	Gorle Pavan Kumar.	-do-	Prof. K. Vaisakh.
18.	Anuku Arjuna Rao.	-do-	Prof. P. Mallikarjuna Rao.
19	S.V. Siva Kumar J	-do-	Prof. P. Mallikarjuna Rao.
20.	Durga Prasad Chodavarapu	-do-	Prof. G. V. Siva Krishna Rao.

GITAM INSTITUTE OF TECHNOLOGY

GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)

(Deemed to be University estd. u/s 3c of UGC Act, 1956)
Gandhi Nagar, Visakhapatnam - 530 045

Research Form – I

Joining Report of Ph.D program (2019-20 batch)

Date of Reporting : 13/6/19

1. Name of the Candidate	:	SHEIK HIDAYATULLA SHARIFF
2. Registration No.	:	2019501060362
3. Address	:	Plot No :-26 Srinivasa nagar madhurawada
4. Mobile No.	:	9966524235
5. E-mail	:	shareef.iitm@gmail.com
6. Programme Category	:	FT / PT / Interdisciplinary / Extramural
7. Department	:	Mechanical
8. Fee D.D No. and Date	:	388815 13/06/19 SBI M.80.veet

9. Research Supervisor

a.	Name	:	V SRINIVAS
b.	Designation	:	PROFESSOR
c.	Department	:	MECHANICAL

10. Research Co-Supervisor

d.	Name	:
e.	Designation	:
f.	Department	:

FEE STRUCTURE	Ph.D. Degree	Rupees ($\overline{?}$) (Part Time)	Rupees ($\overline{?}$) (Full Time)
	1st Year	80,000	73,200
	2nd Year	73,200	66,000
	3rd Year	73,200	66,000
	4th year	73,200	---

Sk. Hidayatulla shariff		S. Narayana Rao
Signature of the Research Scholar	**Signature of the Research Supervisor(s)**	**Signature of HOD** Head of the Department Department of Mechanical Engineering GITAM Institute of Technology Gandhi Institute of Technology and Management (GITAM) (Deemed to be University) Visakhapatnam-530 045

1316	1316/19	**Principal** PRINCIPAL GITAM Institute of Technology Gandhi Institute of Technology and Management (GITAM) (Deemed to be University) Visakhapatnam-530 045
Assistant Registrar	**Vice Principal**	

DRK

GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)

(Deemed to be University)

Visakhapatnam | Hyderabad | Bengaluru

#1

Research Form – I

Joining Report of Ph.D program (2020-21)

Date : 15-Sep-2020

Application Number	: 202050101451
Name of the Candidate	: KESAVARAO SEERAPU
Address	: Plot No 38 Door No 6-124/4,Sampath Nagar Colony Near Ujwal Hospital Chandram Palem,Madhurawada
Mobile	: 8499002256
Email	: kesav546@gmail.com
Programme Category	: Part time,PHD
Date of birth	: 29-07-1981
Category	: OBC
Department	: Computer Science & Engineering
Ph.D. Fee Payment Date	: 15-08-2020
Research Supervisor	
Name	: Dr D Rama Krishna
Department	: Computer Science & Engineering

Signature of the Research Scholar

Signature of the Research Supervisor(s)

Head of the Department
Department of Computer Science and Engineering
GITAM Institute of Technology
Gandhi Institute of Technology and Management (GITAM)
(Deemed to be University)
Visakhapatnam-530 045

Research Admission Coordinator /6/10

Principal/Director

PRINCIPAL
GITAM Institute of Technology
Gandhi Institute of Technology and Management (GITAM)
(Deemed to be University)
Visakhapatnam-530 045

Visakhapatnam
Date: 03/11/2014

From
K. Avinash Kumar
D. No. 24-287, SIVASAKTHI NAGAR,
MADHURAWADA, VISAKHAPATNAM.

Mobile No   : 9491783491
Email   : avinash.kusu@gmail.com

To
The Principal
GITAM Institute of Technology
GITAM University
Visakhapatnam – 530045

Sir,

Sub: Ph.D Admission (PT/FT) in the Department of ___E·C·E·___
      for the academic year 2014-15 – Submission of Joining report – Regarding
Ref: Provisional Admission Memo Dt. 29/10/2014

****

With reference to the Provisional Admission memo cited above, I am willing to report today i.e ___03/11/2014___ for admission into Ph.D (PT / FT Programme) in the Department of ___E·C·E·___ for the academic year 2014-15. I am herewith enclosing a copy of the Challan No G17-VSP-UBI 00222908 dt. ___03/11/2014___ for ₹ ___60,500/-___ paid towards 1st year fees.

Thanking you,

Yours faithfully,

K. Avinash Kumar

Signature of the Research Guide & remarks with date   :
                                                          (Dr. G. Kavitha) 05/11/14

Signature of the Head of the Department & remarks with date :
                                                          V. Malleswara Rao
                                                          Head of the Department
                                                          Dept. of Electronics and Communication Engg.
                                                          GITAM Institute of Technology
                                                          GITAM UNIVERSITY
                                                          VISAKHAPATNAM-530.045

Encl: 1.   Copy of the Provisional Admision Memo
         2.   Copy of the Challan

Assistant Registrar   Assistant Principal   Principal

Koneru Lakshmaiah Education Foundation
(Deemed to be University estd. u/s. 3 of the UGC Act. 1956)
Campus: Green Fields, Vaddeswaram, Guntur District, Andhra Pradesh, India. PIN 522 502
Phone No. 0863 - 2399999; www.kluniversity.in; www.klef.edu.in

PROCEEDINGS OF DEAN R&D
REGISTRATION NOTICE

KLEF/AR/2020-21/reg/**2081519**   Date:20-01-2021

To,
SYAMALA KANCHIMANI
PADMAVATHI NURSING HOME ,TAGARAPUVALSA,
VISAKHAPATNAM.
E-mail: ananth.gondu@gmail.com
Phone: 8790544056

Dear   **SYAMALA KANCHIMANI,**

Subject:- Ph.D.Registration

We are in receipt of the following documents that you have submitted in connection with the registration into a Ph.D program in the Department of "**Electronics and Communication Engineering**".

1. A Demand draft / An Online Transaction number(s) **DUE1461748** drawn on **SBI** bank   Dated **19-01-2021** for **45000/-**.

2. Registration form (**Annexure-R**)

3. Xerox copies of SSC, Inter, UG, PG

We are pleased to inform you that, you have been registered as a **Part time** research scholar in the department of "**Electronics and Communication Engineering**" on "20-01-2021" .

Name of the Supervisor: Dr.M.Suman
E-mail: suman.maloji@kluniversity.in
Mobile: 9848187437
Name of the the External Supervisor (if any):---

You are requested to contact your supervisor for finalization of research plan, and shall submit the same within two months through your supervisor to Doctoral committee.

Best wishes,

Dr.B.T.P.Madhav   Dr.B.Jayakumar Singh
Assoc.Dean (AR)   Dean (R&D)
Dr.B.T.P MADHAV   Dr. B. JAYAKUMAR SINGH
                                                                         DEAN (R&D)

EXALTI ON, EPITOMISING EXCELLENCE

Koneru Lakshmaiah Education Foundation

(Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Campus: Green Fields, Vaddeswaram, Guntur District, Andhra Pradesh, India. PIN 522 502

Phone No. 0863 - 2399999; www.kluniversity.in

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E
F

PROCEEDINGS OF DEAN R&D
REGISTRATION NOTICE

KLEF/AR/2020-21/reg/**2081065**   Date:04-08-2020

To,
SRILAKSHMI PULI
FLAT NO-401 ,SRINIVASA ENCLAVE,SUDHA COLONY,
PEDDAPURAM.
E-mail: thotasrilakshmi1@gmail.com
Phone: 9652698303

Dear   **SRILAKSHMI PULI**,

Subject:- Ph.D.Registration

We are in receipt of the following documents that you have submitted in connection with the registration into a Ph.D program in the Department of "**Computer Science and Engineering**".

1. A Demand draft / An Online Transaction number(s) **DUD2591565** drawn on **SBI** bank   Dated **01-08-2020** for **45000/-.**

2. Registration form (**Annexure-R**)

3. **Xerox copies of SSC, Inter, UG, PG**

We are pleased to inform you that, you have been registered as a **Part time** research scholar in the department of "**Computer Science and Engineering**" on "04-08-2020" .

Name of the Supervisor: Dr Smitha Chowdary
E-mail: smitha@kluniversity.in
Mobile: 9440038123
Name of the the External Supervisor (if any):---

You are requested to contact your supervisor for finalization of research plan, and shall submit the same within two months through your supervisor to Doctoral committee.

Best wishes,
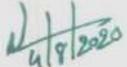
Dr. B. T. P. Madhav
Assoc.Dean (AR)
Associate Dean (Academic Research)
KLEF, Vaddeswaram - 522 502
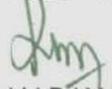
Dr.K.L.NARAYANA
Dean (R&D)
Dr. K.L. NARAYANA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
ANANTHAPURAMU 515002(A.P)

Prof.M.VIJAYA KUMAR
Director of Admissions.

Lr. No.JNTUA/DA/Ph.D/M.Phil/M.S/Admns/Mech. Engg. /2016-17
Dt:01-07-2017

Sub: JNTUA-DA-Admissions in Ph.D/M.Phil/M.S. Programmes – 2016-17

Dear Applicant,

You are admitted into Ph.D. 2016-17 Program in the faculty of **Mechanical Engineering**. The details of your admission are as given below.

Admission Number	16PH0328
Name	PULI SURESH KUMAR
Proposed Research work Title	Composites with natural fibers
Supervisor's Name & Designation with Address	Prof.CH.R.Vikaram Kumar NBKR Inst. Of Science and Tech. Vidyanagar
Co-Supervisor's Name & Designation with Address	***
External Registration/ Full Time- RC	External Registration

All the research scholars have to pay an amount of Rs.40,000/- per annum by 31st July of every year or in two spells of Rs. 20,000/- each by 31st of July and 31st January of every year. Nonpayment of prescribed fee in time may lead to cancellation of the admission.
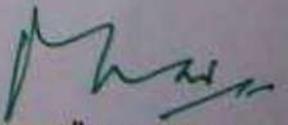
Director of Admissions

Copy to The Supervisor & Co-Supervisor concerned.
Copy to file.

MATLAB
2020

Skill AP
APSSDC

PANTECHSOLUTIONS
Technology Beyond the Dreams

CERTIFICATE
OF PARTICIPATION

This is to certify that

Mr.B.Anand Swaroop

AVANTHI INSTITUTE OF ENGINEERING &TECHNOLOGY

has Successfully Completed "**30 Days Master Class on Matlab Simulink**" at **Pantech Prolabs India Pvt Ltd** in association with **Andhra Pradesh State Skill Development Corporation (APSSDC)**

DATE : Nov 23 to Dec 22, 2020

M.MALAIYAPPAN
DIRECTOR
PANTECHSOLUTIONS

Dr.B.Nageswara Rao
Executive Director

Dr.Srikanth Arja,IRTS
MD & CEO

Certificate no :   PS–APSSDC–MATLAB–2511

PANTECHSOLUTIONS
Technology Beyond the Dreams

CERTIFICATE
of INTERNSHIP

This is to certify that

Mr.B.ANAND SWAROOP

has Successfully Completed "30 Days Internship Program on Matlab"
at www.pantechsolutions.net in association with IETE Mumbai

Date : Sep 01-2020 to Sep 30-2020

M.Malaiyappan
Director
Pantech Solutions

Parag Walinjkar
CHAIRMAN
IETE MUMBAI

Certificate No : PS-IETE-INTERNSHIP-1734