3.3.3

Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

This book is majorly targeted for Electronics and Communication Engineering Students for 3 year 2 semester, JNTUA, Anantapuramu, Andhra Pradesh.

XpressPublishing
An imprint of Notion Press

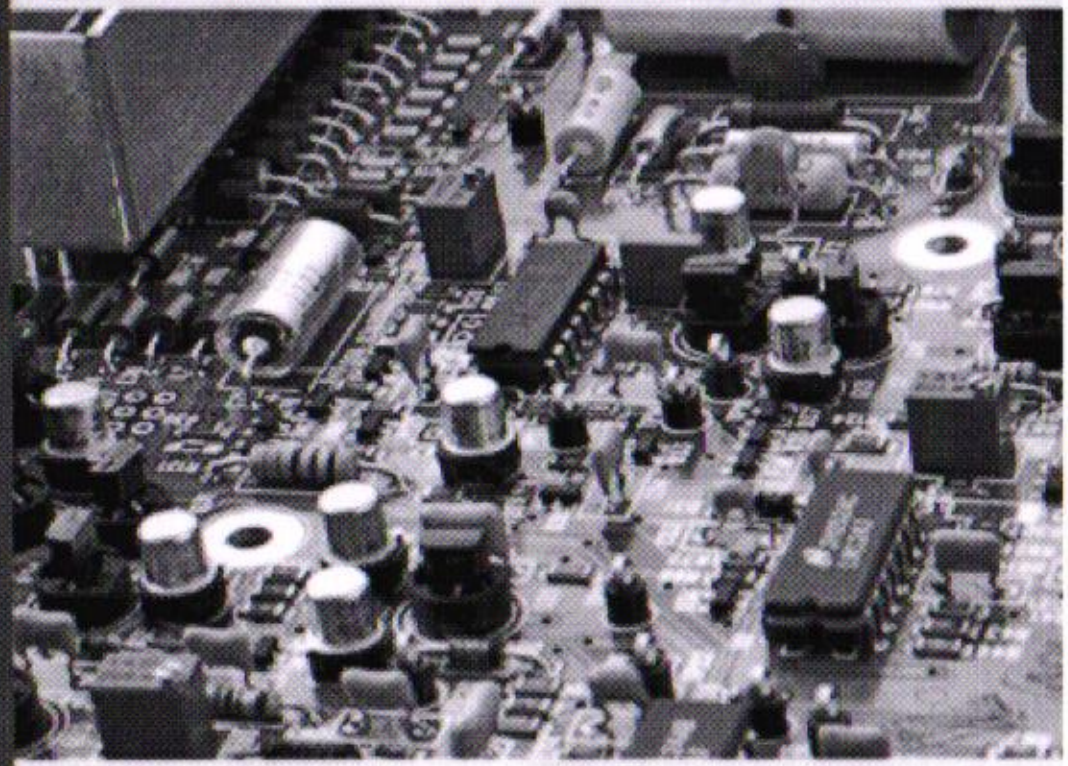
Price ₹299
ISBN 978-1-68466-423-8
9 781684 664238

INDUSTRIAL ELECTRONICS

NOSINA KRISHNA CHAITANYA

Industrial Electronics

(As per JNTUA, Anantapuramu)



NOSINA KRISHNA CHAITANYA

This edition of the book is covering the concepts of electronic devices and circuits. This book is mainly targeted at Bsc Electronic students. The concepts are clearly and simply explained. This book is edited based on the syllabus followed by most of the universities in Andhra Pradesh. This can also be helpful for Engineering undergraduate students as well as for diploma students of electronics branch.

Features:

- Simple to understand
- Explanation with diagrams
- Solved problems
- Important questions

NOSINA KRISHNA CHAITANYA, The author is currently working as an Associate Professor in PBR Visvodaya Institute of Technology and Science, Affiliated to JNTUA, Anantapuramu, India. He has a rich teaching experience of 16 years in the engineering profession. He received his B.Tech degree from PBRVITS, JNTUH, and M.tech from JNTUH. He has a research experience of 7 years. He submitted his doctoral thesis at JNTUK, Kakinada. He is an associate editor for IGI Global IJISP journal, an editorial board member for Science publishing group and TPC member for reputed international conferences. He has published more than 20 papers in international journals and presented. His area of research includes Computer Networks, Embedded Systems, and Network Security.

Dr.PACHA SREENIVASULU, The author is currently working as a Professor at Narayana Engineering College, Gudur, Nellore district, Affiliated to JNTUA, Anantapuramu, India. He has a rich teaching experience of 20 years. He received his B.Tech degree from Osmania University, M.tech, and Ph.D. from JNTUH. He has a research experience of 9 years. His area of research includes image & video processing.

Price ₹300
ISBN 978-1-64429-670-7
90000
9 781644 296707

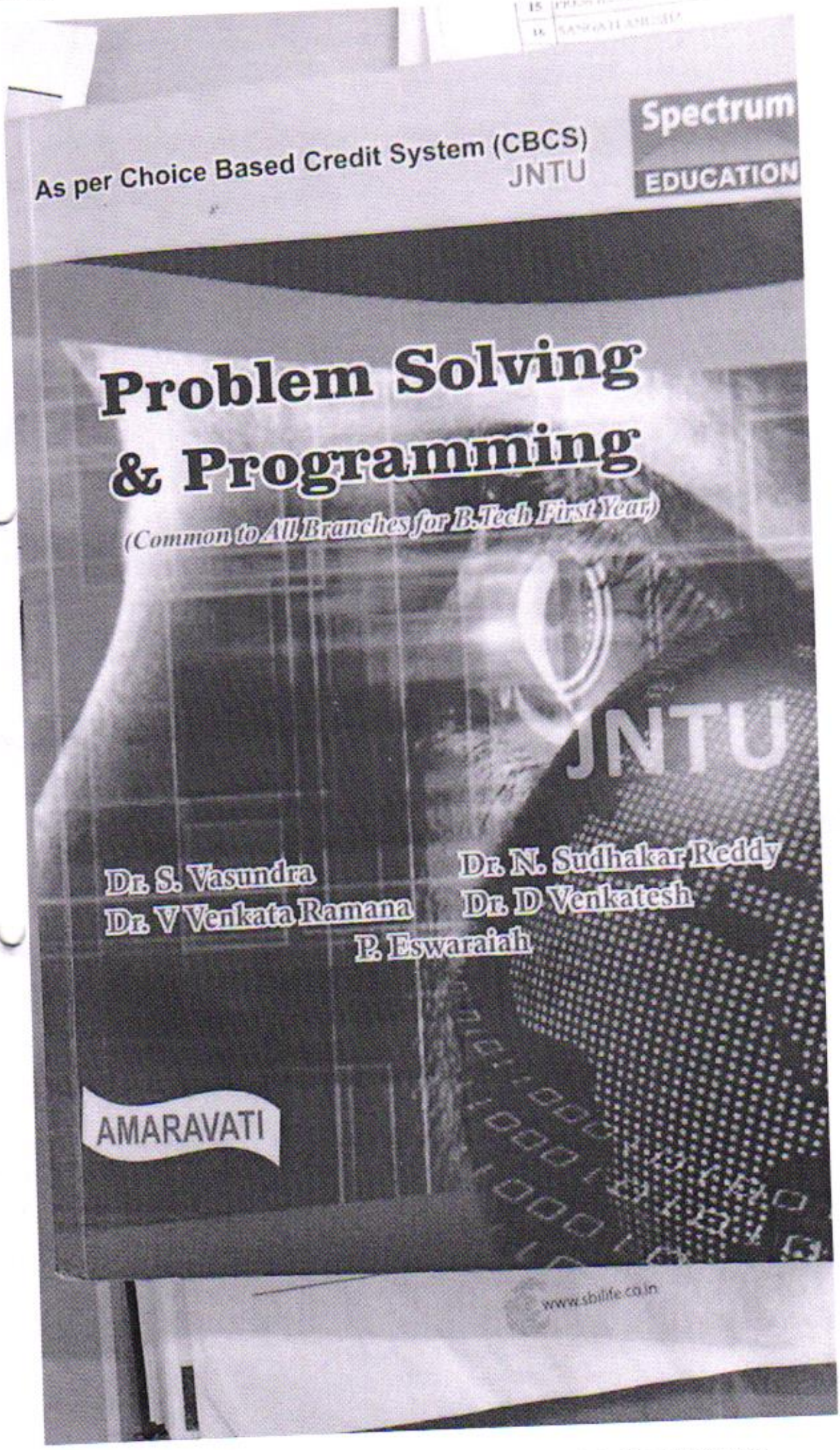
notionpress.com

A Handbook on ELECTRONICS

A Handbook on ELECTRONICS

NOSINA KRISHNA CHAITANYA

Dr.PACHA SREENIVASULU


As per Choice Based Credit System (CBCS)
JNTU
Spectrum
EDUCATION
Problem Solving
& Programming
(Common to All Branches for B.Tech First Year)
JNTU
Dr. S. Vasundra
Dr. V Venkata Ramana
Dr. N. Sudhakar Reddy
Dr. D Venkatesh
P. Eswaraiah
AMARAVATI
www.sbilife.co.in

For online purchase

Assendo Book Bazaar .com

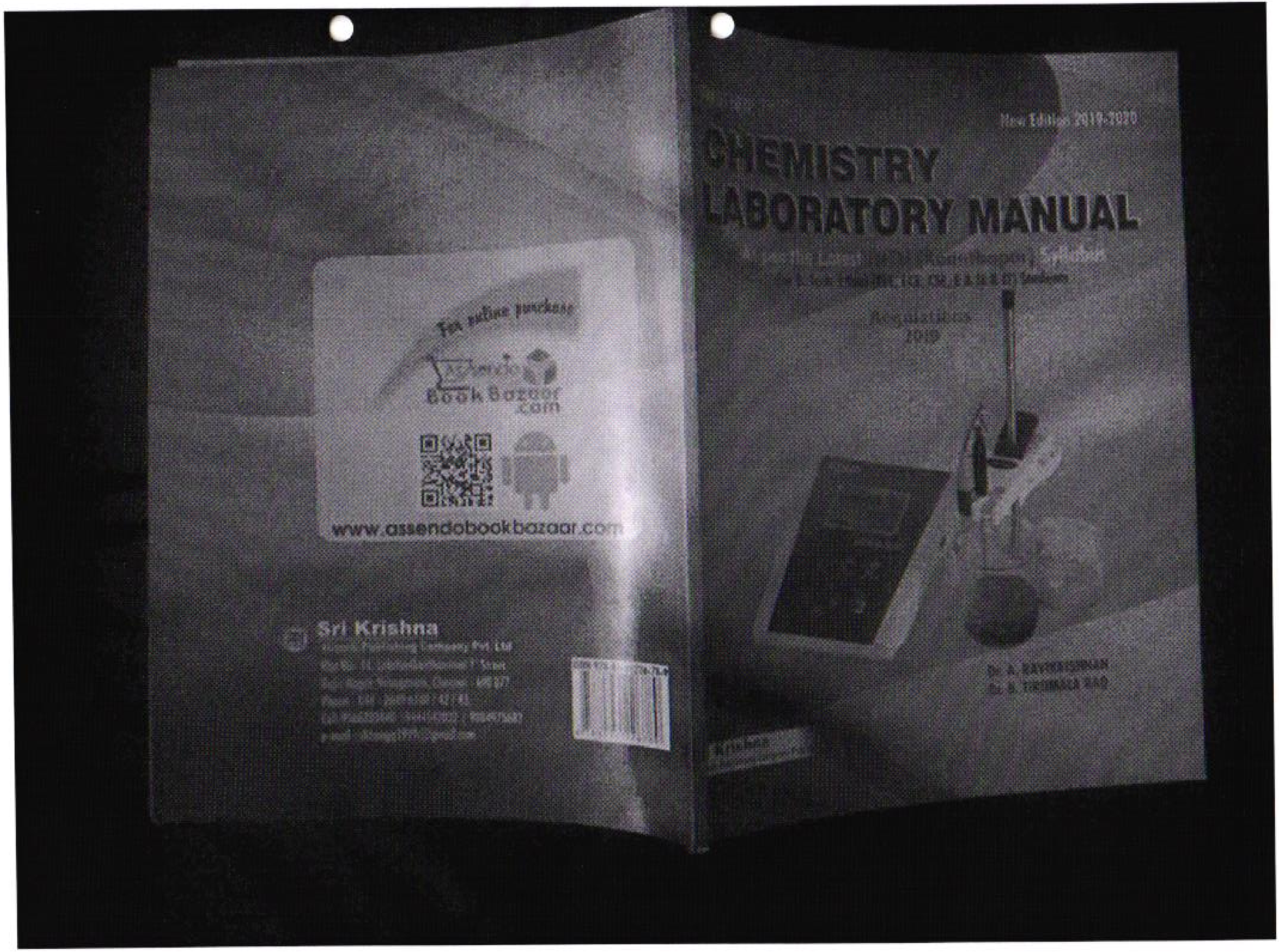
www.assendobookbazaar.com

Sri Krishna
Hitech Publishing Company Pvt. Ltd

CHEMISTRY

CHEMISTRY

Dr. A. RAVIKRISHNAN
Dr. S. TIRUMALA RAO
M. INDHU PRIYA


New Edition 2019-2020
CHEMISTRY
LABORATORY MANUAL
Regulations
2019
For online purchase
Book Bazaar
.com
www.assendobookbazaar.com
Sri Krishna

For online purchase

Assendo Book Bazaar .com

www.assendobookbazaar.com

Project

New Edition 2019-2020

ENGINEERING CHEMISTRY

LABORATORY MANUAL

Regulations 2019

Dr. A. RAVIKRISHNAN
Dr. R. TIRUMALARAO

An Approach of Faulty Node Detection Using DFD Algorithm Using Dtn's

[1]Ramireddy Kondaiah, [2]P. Ajaya Kumar
[1]Assoc. Professor, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[2]M.Tech Student, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[1]rkondareddy75@gmail.com, [2]ajaykumar.vits@gmail.com

Abstract – **Propagation of faulty data is a critical issue. In case of Delay Tolerant Networks (DTN) in particular, the rare meeting events require that nodes are efficient in propagating only correct information. For that purpose, mechanisms to rapidly identify possible faulty nodes should be developed. Distributed faulty node detection has been addressed in the literature in the context of sensor and vehicular networks, but already proposed solutions suffer from long delays in identifying and isolating nodes producing faulty data. This is unsuitable to DTNs where nodes meet only rarely.**

This paper proposes a fully distributed and easily implementable approach to allow each DTN node to rapidly identify whether its sensors are producing faulty data. The dynamical behaviour of the proposed algorithm is approximated by some continuous-time state equations, whose equilibrium is characterized. The presence of misbehaving nodes, trying to perturb the faulty node detection process, is also taken into account. Detection and false alarm rates are estimated by comparing both theoretical and simulation results. Numerical results assess the effectiveness of the proposed solution and can be used to give guidelines for the algorithm design.

Keywords *– Delay tolerant network, malicious node detection, DFD Algorithm.*

I. INTRODUCTION

Delay Tolerant Networks (DTN) are challenging networks characterized by dynamic topology with frequent disconnections [1]. Examples of DTNs include Vehicular DTNs (VDTNs) [2] where two nodes can communicate with each other only when they are closely located. This connection is intermittent as the nodes are moving vehicles. Due to this sparse and intermittent connectivity, inference and learning over DTNs is much more complicated than in traditional networks [3-8].

This paper considers the problem of distributed faulty node detection (DFD) in DTNs. A node is considered as faulty when one of its sensors frequently reports erroneous measurements. The identification of such faulty nodes is very important to save communication resources and to prevent erroneous measurements polluting estimates provided by the DTN. This identification problem is quite complicated in DTNs when interactions are mainly between pairs of encountering nodes. Most of the classical DFD algorithms are using measurements of spatially-correlated physical quantities collected by many nodes to determine the presence of outliers and identify the nodes producing these outliers. In case of pairwise interactions, mismatch between measurements provided by two different nodes can still be detected, but identifying directly which node produces erroneous measurements is not possible.

This paper presents a fully distributed and easily implementable algorithm to allow each node of a DTN to determine whether its own sensors are defective. We assume as in [9] that nodes are not aware of the status (good or defective) of their sensors, while their computation and communication capabilities remain fine, even if some of their sensors are defective. Most of the nodes of the DTN are assumed to behave in a rational way and are willing to know the status of their sensors. Some nodes, however, may be misbehaving, trying to perturb the detection process.

As in [9-13], a Local Outlier Detection Test (LODT) is assumed to be able to detect the presence of outliers in a set of measurements, without necessarily being able to determine which the outliers are [14][15]. This is a typical situation when only pairwise interactions are considered, where measurements from sensors of only two nodes are compared. The generic LODT is characterized by its probabilities of detection and false alarm. When two nodes meet, they exchange their local measurements and use them to perform the same LODT.

The LODT results help both nodes to update their estimate of the status of their own sensors. When, for a given node, the proportion of meetings during which the LODT suggests the presence of outliers is larger than some threshold, this node decides its sensors may be defective. In this case, it becomes silent [16]. Accordingly, it does not transmit its measurements to its neighbours any more, but keeps collecting measurements from nodes met and updates the estimate of the status of its sensors []17.

It may then have the opportunity to change its estimate and communicate again. Although the LODT considered here are those of [9], this work differs significantly from [9] due to the communication conditions of DTNs, which require a

An Efficient Fine Grained Keyword Based Search Scheme in Fog Computing

[1]P. V. N. Rajeswari, [2]Ch. Lakshmi Janaki
[1]Associate Professor, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[2]M.Tech Student, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[1]vtapvnr@gmail.com, [2]chadalawadajanaki@gmail.com

Abstract—**Fog computing, as an extension of cloud computing, outsources the encrypted sensitive data to multiple fog nodes on the edge of Internet of Things (IoT) to decrease latency and network congestion. However, the existing ciphertext retrieval schemes rarely focus on the fog computing environment and most of them still impose high computational and storage overhead on resource-limited end users. In this paper, we first present a Lightweight Fine-Grained ciphertexts Search (LFGS) system in fog computing by extending Ciphertext-Policy Attribute-Based Encryption (CP-ABE) and Searchable Encryption (SE) technologies, which can achieve fine-grained access control and keyword search simultaneously. The LFGS can shift partial computational and storage overhead from end users to chosen fog nodes. Furthermore, the basic LFGS system is improved to support conjunctive keyword search and attribute update to avoid returning irrelevant search results and illegal accesses. The formal security analysis shows that the LFGS system can resist Chosen-Keyword Attack (CKA) and Chosen-Plaintext Attack (CPA), and the simulation using a real-world dataset demonstrates that the LFGS system is efficient and feasible in practice.**

Keyword – Internet of Things, Fog Computing, Cloud Computing.

I. INTRODUCTION

The promising cloud computing [1] paradigm can provide on-demand services with elastic resources and enable cloud clients to relieve the high storage and computation costs [2] locally. However, the prevalence of Internet of Things (IoT) applications [3] poses a huge challenge to the centralized cloud computing paradigm which incurs unbearable transmission latency and degraded services between user requests and cloud responses. Besides, large amounts of data generated from the IoT applications are often stored in the cloud. To decrease latency and network congestion, a fog computing paradigm [4] which is an extension of cloud computing services to network edge has been a relatively recent research topic. In fog computing, the fog nodes inserted into the middle of cloud and end users (or IoT devices) can provide various services (i.e., data computation, data storage, etc.) for resource-limited end users (i.e., sensor nodes, mobile terminals, etc.), note that fog nodes are much closer to end users than cloud, which is shown in Fig. 1. When sensitive data (i.e., text, image, video, etc.) [5], [6], [7] are outsourced to honest-but-curious fog nodes which are similar to public cloud platform, the data security and privacy concerns [8] still impede the adoption of fog computing as data owners lose the physical control over their data in fog nodes or cloud.

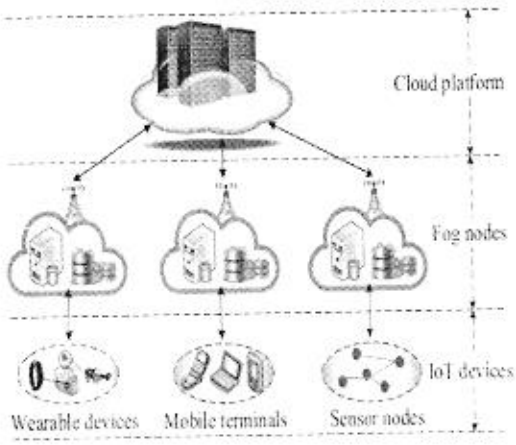


Fig. 1: The infrastructure of fog computing.

To mitigate the data privacy leakage risks, data encryption is an efficient mechanism to protect data confidentiality, but it makes the information retrieval over encrypted data extremely difficult. Moreover, the encrypted data should be amenable to access control. For example, Identity-Based Encryption (IBE) [9], [10] and Attribute-Based Encryption (ABE) [11], [12] can protect data security by providing coarse-grained and fine-grained access control mechanisms, respectively. In addition to data security concerns, achieving effective keyword search over encrypted data1 and finegrained access control are also the vital features in actual scenarios. Searchable Encryption (SE) technology [13], [14], which enables data users to securely search and selectively retrieve records of interest over encrypted data according to user-specified keywords, has been extensively explored. To further furnish fine-grained access control in the preceding SE solutions, the promising Ciphertext-Policy Attribute- Based Keyword Search (CP-ABKS) [15], [16] has gained much attention in both industrial and academic fields. In CP-ABKS schemes, a certain end user can decrypt cipher texts of interest if and only if his attribute set

Replicanode: Detection of Node Replication in Multi-Dimensional Networks

[1]Dr. V. V. Sunil Kumar, [2] B. Chandrasena
[1]Associate Professor, Dept. of CSE, PBR Vivodaya Inst. of Tech. and Sc., Kavali, AP, India.
[2]M.Tech Student, Dept. of CSE, PBR Vivodaya Inst. of Tech. and Sc., Kavali, AP, India.
[1]sunil.vemula1981@gmail.com, [2]chandrasena6@gmail.com

Abstract – **This paper studies node replication detection in multidimensional scaling networks. It is serious threat in the Internet of Things (IoT), inferable from the straightforwardness for an assailant to accumulate setup and validation qualifications from a non-carefully designed hub, and reproduce it in the system. In this paper, we propose ReplicaNode, a novel clone detection method based on multidimensional networks. ReplicaNode appears to be very well suited to IoT scenarios, as it (i) detects replicas without the need to know the geographical positions of nodes, and (ii) unlike prior methods, it can be applied to hybrid networks that comprise both static and mobile nodes, for which no mobility pattern may be assumed a priori. Moreover, a further advantage of ReplicaNode is that (iii) the core part of the detection algorithm can be parallelized, resulting in an acceleration of the whole detection mechanism. Our thorough analytical and experimental evaluations demonstrate that ReplicaNode can achieve a 100% clone detection probability. Moreover, we propose several modifications to the original MDS calculation, which lead to over a 75% speed up in large scale scenarios. The demonstrated efficiency of ReplicaNode proves that it is a promising method towards a practical clone detection design in IoT.**

Keywords – IoT, Multidimensional Scaling, Replica Node Detection.

I. INTRODUCTION

Internet of Things (IoT) is an emerging networking paradigm, in which a large number of interconnected devices communicate with each other to facilitate communications between people and objects[1]. For example, a smart city is composed of several smart sectors, such as[2] smart homes, smart hospitals, and smart cars, which are significant applications of IoT. In a smart home scenario, each IoT gadget is equipped with embedded sensors and wireless communication capabilities [1]. The sensors are able to gather environmental information and communicate with each other, as well as the house owner and a central monitoring system. In a smart hospital scenario, which could be implemented using body sensor networks (BSN), patients wear implantable sensors that collect body signals and send the data to a local or remote database for further analysis. On account of their restricted features and capabilities, IoT devices are vulnerable to several security threats [2]. For example, IoT devices could easily be captured, leading to a clone attack (also known as a node replication attack). In such a scenario, the captured device is reprogrammed, cloned, and placed back in the network. Moreover, in special cases devices that are supposed to be trusted can cause clone attacks[3]. A clone attack is extremely harmful, because the clones with legitimate credentials will be considered as legitimate devices. Therefore, such clones can easily perform various malicious activities in the network[5-6], such as launching an insider attack and injecting false data leading to hazards in an IoT scenario [4].

While there exists fairly extensive literature on clone attack detection approaches in WSNs[7-8], this remains an open problem when it comes to IoT scenarios. In particular, compared with conventional WSNs, two unique characteristics of IoT environment make the establishment of clone detection schemes in IoT a more challenging issue. First, there is a lack of accurate geographical position information for the devices [5]. For instance, the devices embedded in smart cars are likely to derive their location information via the car navigation system, i.e., geographical positioning system (GPS), while the devices in a smart home or BSN are unlikely to have embedded GPS capability, owing to its high energy consumption and extra hardware requirements[6].

Second, IoT networks are hybrid networks composed of both static and mobile devices without a priori mobility pattern, e.g., a patient carrying wearable sensors and living in a smart home. Wearable devices could be considered as mobile nodes, because the patient may move around, while most of the devices in a smart home are immobile. In fact, IoT nodes are relocatable, without an a priori mobility pattern [7]. Although some of the existing clone detection methods for mobile networks could be applied to hybrid networks, these suffer from a certain detection probability degradation.

In this paper, we propose ReplicaNode, a novel clone detection mechanism for IoT environments. ReplicaNode specifically circumvents the two major above-mentioned issues that emerge in IoT scenarios by adopting a multidimensional scaling (MDS) algorithm [8] [9].

Our main contributions:

1) We propose a clone detection method that does not rely on geographic positions of nodes. Instead, by

A Hybrid Secure Storage Scheme to Avoid EDoS Attacks in Cloud Computing

[1]D. Anil, [2]G.Vihalya
[1]Associate Professor, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[2]M.Tech Student, Dept. of CSE, PBR Visvodaya Inst. of Tech. and Sc., Kavali, AP, India.
[1]anilvec11@gmail.com, [2]vihalya1009@gmail.com

Abstract – **To ensure confidentiality, data owners outsource encrypted data instead of plaintexts. To share the encrypted files with other users, Ciphertext-Policy Attribute-based Encryption (CP-ABE) can be utilized to conduct fine-grained and owner-centric access control. But this does not sufficiently become secure against other attacks. Many previous schemes did not grant the cloud provider the capability to verify whether a downloader can decrypt. Therefore, these files should be available to everyone accessible to the cloud storage. A malicious attacker can download thousands of files to launch Economic Denial of Sustainability (EDoS) attacks, which will largely consume the cloud resource.**

The payer of the cloud service bears the expense. Besides, the cloud provider serves both as the accountant and the payee of resource consumption fee, lacking the transparency to data owners. These concerns should be resolved in real-world public cloud storage. In this paper, we propose a solution to secure encrypted cloud storages from EDoS attacks and provide resource consumption accountability. It uses CP-ABE schemes in a black-box manner and complies with arbitrary access policy of CP-ABE. We present two protocols for different settings, followed by performance analysis.

Keywords – Access Control, Privacy preserving, cloud computing.

I. INTRODUCTION

Cloud storage has many benefits, such as always-online, pay-as-you-go, and cheap [1]. During these years, more data are outsourced to public cloud for persistent storage, including personal and business documents. It brings a security concern to data owners [2]–[4]: the public cloud is not trusted, and the outsourced data should not be leaked to the cloud provider without the permission from data owners. Many storage systems use server-dominated access control, like password-based [5] and certificate-based authentication [6]. They overly trust the cloud provider to protect their sensitive data. The cloud providers and their employees can read any document regardless of data owners' access policy. Besides, the cloud provider can exaggerate the resource consumption of the file storage and charge the payers more without providing verifiable records [2], [7], [8], since we lack a system for verifiable computation of the resource usage.

Relying on the existing server-dominated access control is not secure. Data owners who store files on cloud servers still want to control the access on their own hands and keep the data confidential against the cloud provider and malicious users.

Encryption is not sufficient. To add the confidentiality guarantee, data owners can encrypt the files and set an access policy so that only qualified users can decrypt the document. With Ciphertext-Policy Attribute-based Encryption (CP-ABE) [9], [10], we can have both fine-grained access control and strong confidentiality [11]–[16]. However, this access control is only available for data owners, which turns out to be insufficient. If the cloud provider cannot authenticate users before downloading, like in many existing CP-ABE cloud storage systems [14], [15], the cloud has to allow everyone to download to ensure availability. This makes the storage system vulnerable to the resource-exhaustion attacks. If we resolve this problem by having data owners authenticate the downloaders before allowing them to download, we lose the flexibility of access control from CP-ABE. Here lists the two problems should be addressed in our work:

Problem I: resource-exhaustion attack. If the cloud cannot do cloud-side access control, it has to allow anyone, including malicious attackers, to freely download, although only some users can decrypt. The server is vulnerable to resource-exhaustion attacks. When malicious users launch the DoS/DDoS attacks to the cloud storage, the resource consumption will increase. Payers (in pay-as-you-go model) have to pay for the increased consumption contributed by those attacks, which is a considerable and unreasonable financial burden. The attack has been introduced as Economic Denial of Sustainability (EDoS) [17]–[20], which means payers are financially attacked eventually. In addition, even files are encrypted, unauthorized downloads can reduce security by bringing convenience to to offline analysis and leaking information like file length or update frequency [21].

Problem II: resource consumption accountability. In the pay-as-you-go model, users pay money to the cloud provider for storage services. The fee is decided by resource usage. However, CP-ABE based schemes for cloud storage access control does not

Dr.D Srujan Chandra Reddy,Professor,Dept of CSE,PBR VITS,Kavali

A Study on Enhancing Data Security in Cloud Computing Environment

Abstract:

Cloud computing is an Internet-based computing model which provides several resources through Cloud Service Providers to Cloud Users on-demand basis without buying the underlying infrastructure and follows pay-per-use basis. Cloud computing usage has increased rapidly in many companies. Cloud computing is the well-known technology for scaling of extensive data and complex computation. Cloud computing offers many benefits in terms of low cost and accessibility of data. Data security is the major issue in cloud computing. This paper covers various security algorithms related to cloud computing and shows a comparative study on data security algorithms.

Keywords: Cloud computing, Scaling, Data security.

Dr.VV Sunil Kumar,Professor,Dept of CSE,PBR VITS,Kavali

Implementation of Data Deduplication Using Cloud Computing

ABSTRACT:

Cloud computing has quickly become one of the most significant field due to its evolutionary services provided model of computing not only in the IT industry but also in the software and hardware industry. This mechanism came up with increasing flexibility, scalability and reliability; while decreasing the operational and support cost. Due to the cloud computing, it becomes easy for managing the stuffs related as well as provides many features which cannot be replaced by anyone. It is a way difficult as well as effective in its own. Providing security is a major concern as the cloud data are stored and accessed in a remote server with the help of by the cloud service provider. Translation of efficient storage and security for all data is very important for cloud computing. Securing and privacy preserving of data is of high priority when it comes to cloud storage.

B Muralikrishna,Asst.Prof,Dept of CSE,PBR VITS,Kavali

Securing Cloud using Fog Computing with Hadoop Framework

Abstract:

The need to store data is increasing day by day may be as a record or as a memory. The conventional way of storing was with the hard disks of computers or in the smartphones. With the increase in number of profiles of individuals there was a parallel increase in the data store. This lead to the insufficiency of the storage space thus leading more and more people is today getting accustomed to storing their data onto the cloud. The cloud computing has flexibility, scalability, efficiency and multi-portability. Even though efforts are been taken to secure cloud there are still loopholes in it which is restricting the users from using cloud. Thus instead of securing the data by merely using authentication credentials like user name and password, an approach of using fog computing that is concoction of user profile mapping using various behavior parameters and decoy data technology that is having a fake file of every file format which will be used to launch a disinformation attack in case the user gets detected as an intruder came into being in order to maintain confidentiality of data. This paper proposes an approach of using fog computing for securing the data with efficient algorithms and large data processing framework for accurate results.

Keywords: Fog Computing, Decoy data Technology, User Behavior Mapping, and Hadoop, Cloud Security

M Janardhan,Asst.Professor,Dept of CSE,PBR VITS,Kavali

A review of homomorphic encryption of data in cloud computing

Abstract - The term encryption refers to converting the original data into human unreadable form

(encoding). The conversion of the encoded data into original form is known as decryption. By encrypting the data only the authorized person can decode the original data. Thus data confidentiality is achieved by the encryption. In this paper, we reviewed the algorithms proposed for the homomorphic encryption of data in cloud computing.

Keywords – encryption, homomorphic, cloud, security.

J Vamsinath,Asso.Professor,Dept of CSE,PBR VITS,Kavali

A Group Decision-Making Method for Selecting Cloud Computing Service Model

Abstract—Cloud computing is a new technology that has great potential for the business world. Many business firms have implemented, are implementing, or planning to implement cloud computing technology. The cloud computing resources are delivered in various forms of service models which make it challenging for business customers to select the model that suits
their business needs. This paper proposes a novel group-based decision-making method where a group of decision makers is involved in the decision process. Each decision maker provides
weights for the cloud selection criteria. Based on weight aggregations and deviations, decision makers would select the alternative which has the highest ratio of deviation to mean is selected.

P Eswaraiah,Asso.Professor,Dept of CSE,PBR VITS,Kavali

Smart-Vehicle Implementation using Internet-of-Things and Cloud Computing Extension

ABSTRACT:

The vehicle of the future will be safer for passengers and other road users too. This will offer pay-as-you-go services and thus will lead to a better driving experience. Beyond the basic concept of connected vehicle being provided with only internet access, we can establish a Vehicle-to-Vehicle, Vehicle-to Pedestrian, Vehicle-to-Infrastructure and Vehicle-to-Mobile or Vehicle-to-Cloud communication links. With the introduction of 4G and 5G the networks,
capabilities of such Smart Vehicles will increase which will also facilitate faster transmission and processing of various forms of data. This can be implemented by integrating two most important technologies namely Cloud Computing and Internet-Of-Things, together known as Cloud-of-Things.

Keywords: Cloud computing and IoT

P.Feridoz Khan,Asst.Professor,Dept of CSE,PBR VITS,Kavali

Security Issues in Cloud Computing

Abstract:

In the last few years, cloud computing has grown from being a promising business concept to one of the fastest growing segments of the IT industry. It offers an on demand and scalable access to a shared pool of resources hosted in a data center at providers' site. It reduces the overheads of up-front investments and financial risks for the end-user. The qualitative services and lower cost of services are the key requirements of this technology. Regardless of the fact that cloud computing offers great advantages to the end users, there are several challenging issues that are mandatory to be addressed. This paper discusses security issues,

requirements and challenges that cloud service providers face during cloud engineering.

P.Srinivasulu,Asso.Professor,Dept of CSE,PBR VITS,Kavali

An Efficient and Secure Data Storage Operations in Mobile Cloud Computing

ABSTRACT:

Clients store tremendous measures of touchy information on a cloud. Sharing delicate information will enable undertakings to lessen the cost of giving clients customized benefits and offer some incentive included information services. Be that as it may, secure information sharing is risky. Security is a standout amongst the most troublesome errand to actualize in cloud computing. Distinctive types of attacks in the application side and in the equipment segments. This paper proposes a system for secure delicate information partaking in cloud, including secure

information conveyance, stockpiling, use, and devastation on a semi-confided in cloud environment. We exhibit Kerberos convention over the system and a client procedure insurance technique in view of a virtual machine screen, which offers help for the acknowledgment of framework capacities.

N.Srinath Reddy,Asso.Professor,VEC,Dept of CSE,Kavali

Recent Advances in Mobile Cloud Computing

ABSTRACT:

Cloud computing has become increasingly important due to many associated characteristics such as low cost storage, availability of data at any time and any place, and ease in maintenance..Mobile devices can collect personal data from various sensors within a shorter period of time and sensor based data consists of valuable information from users. But, mobile access introduces many problems such as duplication to make data easily accessible, access to desired data, security of data, and AI techniques for quick and effective access to data. In this special issue on recent advances in mobile cloud computing, we have invited a few papers that address such issues.

I.Sapthami,Asst.Professor,VEC,Dept of CSE,Kavali

The Advantages of Implementing Cloud Computing in the Health Industry of Iran: A Qualitative Study

Abstract:

Cloud computing as a modern technology has brought various benefits to the healthcare industry. The purpose of the present study is to introduce the advantages of implementing cloud computing in the health industry of Iran, which was conducted through a qualitative methodology by interviewing 12 experts in the field of health and cloud computing in Iran. Data were analyzed through qualitative content analysis and open coding. At the end, four sub-themes were extracted under the main theme of the advantages of cloud implementation in the health industry of Iran. The sub-themes included technical, organizational, economic, and security advantages which encompassed the following categories: specific health capabilities, technical support, high-level and hospital capabilities in the organizational area, relative benefits and organizational cost reduction in economic field, and security opportunity in the area of security.Considering the novelty of cloud computing in the health industry of Iran, recognizing its benefits and opportunities plays a significant role in using this technology successfully.

PVN Rajeswari.Asso.Professor,PBR VITS,Dept of CSE,Kavali

A Review on Big Data and Cloud Computing Security

Abstract:

Cloud services are popular all over the world to store and analyze Big Data. Now-a-days the research is full of work linked with the security breaches to these services, resulting in the exposure of huge amounts of private data. Security is increasingly critical for various scientific workflows that are big data applications and typically take great amount of time for being executed on large scale distributed infrastructures. This paper studies the current security threats to Cloud Services, Big Data, and Hadoop. Survey of big data with clouds computing security mechanisms is given, that helps to protect, secure and preserve the data stored on cloud. The complete review of techniques and algorithms used in security is done.

Keywords: Big data, Cloud Computing, Hadoop, Security Framework, G-Hadoop

N.Bhaskar,Asso.Professor,Dept of CSE,NEC,Gudur

Encrypted Data Management with Deduplication inCloud Computing

ABSTRACT

Cloud Computing is an information technology concept which plays a vital role in the data processing and data storing. It also plays a crucial role in the Internet of Things (IoT). The data stored in the cloud should be secured to prevent the unauthorized access. There comes a data security concept known as Encryption. In order to maintain the users Privacy and the security of the data is stored in the cloud in the encrypted or cipher-text format. By this, only the encrypted data is going to be stored in the cloud which reduces the usage of the storage devices up to a great extent. This is mainly used for storing very large size datasets like for the big data. We have a lot of de duplications schemes which avoids the duplicate data, but the main problem with those schemes are lack of security and lack of tractability for the secure data access control. Due to these two problems very few of them are taken into practice.

E.Dayakar,Asst.Professor,Dept of CSE,SVCN,Nellore

Survey on Cloud Computing and Data Masking Techniques

ABSTRACT

Cloud computing is a technology, which provides low cost, scalable computation capacity and services to enterprises on demand for expansion. Although, cloud computing is facilitating the Information technology industry, the research and development in this arena is yet to be satisfactory. Cloud computing resources offered service on an as-needed basis, and delivered by IP-based connectivity, providing highly scalable, reliable on-demand services with agile management capabilities. There are a lot of development in the cloud computing, security of the data in the cloud has become the one of major aspects in the cloud computing. Cloud computing is nothing but the sharing of the resources in an open environment which leads to the security problems. This paper aim is to provide different models of cloud computing and data masking techniques for providing security.

Key words: Cloud Computing, Service Models, Deployment Models, Data Security, Data Masking Techniques.

G.Radhika,Asst.Professor,GTNN,Gangavaram,Kovur

Performance Annotations for Cloud Computing

Abstract

Web services and applications are complex systems. Layers of abstraction and virtualization allow flexible and scalable deployment. But they also introduce complications if one wants predictable performance and easy trouble-shooting. We propose to support the designers, testers, and maintainers of such systems by annotating system components with performance models. Our goal is to formulate annotations that can be used as oracles in performance testing, that can provide valuable guidance for debugging, and that can also inform designers by predicting the performance profile of an assembly of annotated components. We present an initial formulation of such annotations together with their concrete derivation from the execution of a complex web service.

PV Reddy,Asst.Professor,Dept of CSE,MRRITS,Udayagiri

Highly Secure Virtual Identity Approach in Cloud Computing Environment

Abstract

In this technological era, cloud computing has become a buzzword for all the service sectors, be it banking, health or another business sector. Primarily, it provides significant benefits in terms of storage and maintenance of data and services. However, data security has always remained one of the biggest challenge in cloud. Therefore it is very important to focus on the security measures and techniques on the cloud environment so that cloud usage can be increased. This paper proposes a novel approach for enhancing security in cloud environment using virtual identity by hiding actual user identity. For achieving high security, Diffie-Hellman algorithm with station to station protocol has been used by the system. Paper also analyses the performance of system by taking various scenarios and discussion of previous research works.

A Vamsikrishna,Asst.Professor,Dept of CSE,SANK,Gudur

Data Integrity Checking Protocol with Data Dynamics in Cloud Computing

Abstract

We introduce a model for provable data possession (PDP) which allows a client that has stored data at an un-trusted server to verify that the server possesses the original data without retrieving it. In a previous work, Ateniese etal. proposed a remote data integrity checking protocol that supports data partial dynamics. In this paper, we present a new remote data possession checking protocol which allows an unlimited number of file integrity verifications

and efficiently supports dynamic operations, such as data modification, deletion, and insertion and append. The proposed protocol supports public verifiability. In addition, the proposed protocol does not leak any private information to third-party verifiers. Through a specific analysis, we show the correctness and security of the protocol. After that, we demonstrate the proposed protocol has a good performance.

M. RAMA MOHAN REDDY, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

Multiple Passband Transmission Zeros Embedded Compact Uwb Filter Based On Microstrip/Cpw Transition

Abstract

This paper presents an ultra-wideband (UWB) bandpass filter (BPF) with dual transmission zeros (TZ) embedded in the passband for interference free operation in indoor environment. Based on the vertical electromagnetic (EM) coupling of microstrip-to-coplanar waveguide (CPW) transition, the structure has two similar microstrips placed adjacent on the top plane whereas a short-circuited CPW forms the ground. The response of this BPF is quasi-elliptical in nature with two TZs at either passband edges which enhances selectivity and improves insertion/return loss. To this basic BPF, novel sectoral folded split ring resonator (SFSRR) and spiral resonator (SR) are appended in the slots of the ground plane which produce dual TZs in the passband at 4.5 and 8 GHz respectively. A prototype of the proposed structure is fabricated and tested. The dual notched BPF is developed on a low cost substrate and is of compact size occupying an area of 21.2×16 mm^2.

Mr. R S PRATAP SINGH, Associate professor, Dept. of ECE, PBR VITS, KAVALI.

Mutual Coupling Reduction Of Quasi-Yagi Antenna Array With Hybrid Wideband Decoupling Structure

Unlike conventional decoupling technologies that merely concern antenna characteristics in a limited range of frequency, this paper proposes a novel hybrid wideband structure to decouple ultra-wideband (UWB) quasi-Yagi antenna array. With the demand of achieving trade-off between mutual coupling and gain in the entire operating band, the evolution of the configuration is meticulously conducted by introducing multiple slots and their complementary counterpart, a rake-type locker, and an I-shaped isolator. Simulation and measurement results indicate that the decoupled array owns an increased impedance bandwidth (92.1%), reduced mutual coupling (lower than −20 dB), comparable gain and modified radiation patterns. The hybrid wideband decoupling structure reveals its potential application in planar wideband and multi element antenna arrays.

Dr. A MAHESWARA RAO , Professor, Dept. of ECE, PBR VITS, KAVALI.

A New Spectrally Efficient Pilot Scheme For Ofdm Systems

In this paper, new pilot insertion techniques that make use of index modulation (IM) idea for channel estimation (CE) are proposed for orthogonal frequency division multiplexing (OFDM) systems. These techniques not only perform CE but also convey additional bits. Simulation results show that the performance of the proposed schemes are very close to the performance of the classical pilot symbol-assisted (PSA) OFDM system, with the additional benefit that more bits can be transmitted. Despite a slight increase in the complexity of the receiver, higher spectral efficiency than conventional OFDM systems can be achieved. Especially, the proposed method-II transmits more bits than the proposed method-I owing to its sub block form.

Mr.M VENKATA RATNAM, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

An Ultra-Low Power Analog Qrs-Detection Circuit For Ambulatory Ecg Monitoring

Abstract:

In this paper, an ultra-low-power QRS-detection circuit is proposed which is suitable for wearable and implantable ECG-monitoring applications. Implementing the major part of the system in the analog-domain using current-mode circuits in the sub threshold region leads to an extremely low power consumption. The proposed circuit is based on calculating the energy of the derivative of the signal which follows by the onset spike detection method. Two low-pass filters with ultra-low cutoff frequencies of 6.45 Hz and 0.23 Hz are utilized in this method which are required for removing the high-frequency noise and estimating the required threshold for QRS-detection, respectively. The proposed algorithm is evaluated over the entire standard MIT-BIH arrhythmia database which results in a detection error rate of 1.46% with sensitivity and positive prediction of 99.17% and 99.36%, respectively. This QRS-detector circuit is implemented in 0.13 μm CMOS technology with a power supply of 1.2 V which consumes 31.5 nW power and occupies 0.097 mm^2 of silicon area. As the proposed circuit uses the analog ECG signal, there is no need to use an analog-to-digital converter which yields to further save in the area and power consumption of the entire system.

Mr.LML NARAYANA REDDY, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

Memristor-Based Neural Network Circuit Of Pavlov Associative Memory With Dual Mode Switching

Abstract

There are many learning modes in associative memory, but most of memristor-based Pavlov associative memory circuits only have a single mode. A learning circuit that can realize Pavlov associative memory with dual-mode switching is designed and verified by the simulation results. The designed circuit consists of the auditory (visual) synapse, auditory (visual) control voltage module and auditory (visual) inhibition module. This paper considers two different learning modes, auditory mode and visual mode. The modes can run not only separately but also alternately. Besides, the paper also considers the inhibition relationship between learning modes and reflects the relationship by adjusting the influence of mode switching period on the learning speed of modes. As a widespread phenomenon in the natural world, mode inhibition of associative memory can be regarded as a psychological process of living things under different external stimulus. Mode inhibition is an interesting subject, which can allow the artificial neural network to mimic more realistic situations of memory. The dual mode switching is an essential part of life, which can provide more references for the practical application of memristor.

Mr.R RANJITH KUMAR, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

Sensitivity Analysis Of Rectangular Waveguides With Different Anisotropic Surface Impedance Boundaries Using Modal Extended Theory

Abstract

This article presents a sensitivity analysis of rectangular waveguides loaded with anisotropic surface impedance boundaries on their vertical walls, by using modal extended theory (MET). Using this method, several dispersion diagrams are computed for various anisotropic impedance boundary conditions of the surface walls of the waveguides in order to assess how the slight changes on the surface impedance can affect on the bandwidth and the fundamental cutoff frequency of the waveguide. The results obtained with MET were validated by comparison with the commercial software ANSYS HFSS. The results show that small anisotropic variations of the surface wall impedances lead to variation on the

fundamental cutoff frequency and the bandwidth of the waveguide. Most significantly, and compared to an isotropic metasurface case, the variation of the transverse impedance of the metasurface is the one that have more significant effect over the waveguide parameters. This is a useful information for the metasurface design in order to take into account the fabrication tolerance of these structures and how they can have an influence over the final constructed device.

Mr. V NARAYANA REDDY, Associate professor, Dept. of ECE, PBR VITS, KAVALI.

Security Architecture And Key Technologies For Iot/Cps

Abstract:

Internet of Things(IoT) and Cyber-Physical Systems(CPS) are core technologies of next generation networks,and are the focus of research in both academia and industry.IoT/CPS has unique characteristics including heterogeneous integration,collaborative autonomy,and open interconnection that raise a number of issues for system security.These issues include seamless connection between security protocols,and preservation of user privacy.Developing novel security models,key technologies,and approaches is therefore critical in the development of IoT/CPS.This paper proposes an hierarchical security architecture based on threat analysis and security requirements and discusses key technologies associated with privacy preservation,secure control,and cross-network authentication.

Mr.V BHARAT KUMAR , Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

Algorithms For Efficient Digital Media Transmission Over Iot And Cloud Networking

Abstract

In recent years, with the blooming of Internet of Things (IoT) and Cloud Computing (CC), researchers have begun to discover new methods of technological support in all areas (e.g. health, transport, education, etc.). In this paper, in order to achieve a type of network that will provide more intelligent media-data transfer new technologies were studied. Additionally, we have been studied the use of various open source tools, such as CC analyzers and simulators. These tools are useful for studying the collection, the storage, the

management, the processing, and the analysis of large volumes of data. The simulation platform which have been used for our research is CloudSim, which runs on Eclipse software. Thus, after measuring the network performance with CloudSim, we also use the Cooja emulator of the Contiki OS, with the aim to confirm and access more metrics and options. More specifically, we have implemented a network topology from a small section of the script of CloudSim with Cooja, so that we can test a single network segment. The results of our experimental procedure show that there are not duplicated packets received during the procedure. This research could be a start point for better and more efficient media data transmission.

Mr.A VENKA REDDY, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

A Discrete State-Space Model For Linear Image Processing

Abstract

The linear time-discrete state-space model is generalized from single-dimensional time to two-dimensional space. The generalization includes extending certain basic known concepts from one to two dimensions. These concepts include the general response formula, state-transition matrix, Cayley-Hamilton theorem, observability, and controllability.

Mr. K NIRANJAN KUMAR, Assistant professor, Dept. of ECE, PBR VITS, KAVALI.

Computer-Mediated Communication: Impersonal,Interpersonal, And Hyper Personal Interaction

Abstract:

While computer-mediated communication use and research are proliferating rapidly, findings offer contrasting images regarding the interpersonal character of this technology. Research trends over the history of these media are reviewed with observations across trends suggested so as to provide integrative principles with which to apply media to different circumstances. First, the notion that the media reduce personal influences—their impersonal effects—is reviewed. Newer theories and research are noted explaining normative "interpersonal" uses of the media. From this vantage point, recognizing that impersonal communication is sometimes advantageous, strategies for the intentional depersonalization of media use are inferred, with implications for Group Decision Support Systems effects. Additionally, recognizing that media sometimes facilitate communication that surpasses normal interpersonal levels, a new perspective on "hyper personal" communication is introduced. Sub processes are discussed pertaining to

receivers, senders, channels, and feedback elements in computer-mediated communication that may enhance impressions and interpersonal relations.

Miss. M.PAVITRA , Associate Professor, Dept. of ECE, PBR VITS, KAVALI.

An Embedded Based Integrated Flood Forecasting Through Ham Communication

Abstract

The most essential resource for all living beings on the planet is water. There is only three percentage of fresh water among all water resources and two thirds of the freshwater is locked up in icecaps and glaciers. Of the remaining one percent a fifth is in remote areas where abundant seasonal rainfall and the monsoons deluges and hence the water cannot be used. At the same time flooding is also one of the most frequent and detrimental natural disasters in the world. In this embedded world an advanced and intelligent system is in the need to defend the human life from these disasters. This project provides a solution for the floods that are occurring. The main function of this project is to identify and detect the floods that occur abruptly, through the technique called HAM communication.

Mr.T SUNEEL KUMAR, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Influences Of Nonionic Poly(Ethylene Glycol) Polymer Peg On Electrokinetic And Rheological Properties Of Bentonite Suspensions

Abstract

The determination of the electrokinetic properties of colloidal systems is very important for the chracterization of these systems. Colloidal systems have high adsorption performance due to the carrying of negative charges and the colloid structure. The control of the electrokinetic properties of the bentonite–water system are important not only from a technological point view; they are also important from a scientific point of view. Knowing the electrokinetic and rheological properties of bentonite minerals is important for the estimation of the behavior of clays under various environmental conditions. The purpose of this study was to interpret the effect of the nonionic poly(ethylene glycol)

(PEG) polymer on electrokinetic and rheological properties. Zeta potential and viscosity measurements were done as a function of PEG molecular weights (400, 3000, and 8000) and their concentrations (2.5×10^{-5} to 1.25×10^{-2} mol/L). We interpreted the experimental data, taking into account these two parameters. X-ray diffaction studies were done together with the electrokinetic and rheological measurements.

Mr.M SREEHARI, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Security Aware Routing For Wireless Sensor Network Using Hybrid Optimization Algorithm

Abstract:

Nowadays, WSN has adopted with more desirable characteristics including self organization, easy deployment, which are more important in modern society. However, prolonging the network lifetime seems to be the most critical problem and hence more works have been done by different researchers. In the view of this issue, this paper intends to propose a security aware routing protocol as the security of network is always a barrier in any applications. In fact, this paper introduces an optimal route selection model via proposing a new hybrid algorithm. Along with the energy consumption, the proposed protocol considers the security of the network in selecting the best route path, which is attained by defining single objective function. Moreover, the proposed hybrid algorithm is the combination of Dragonfly (DA) Algorithm and Whale Optimization Algorithm (WOA) termed as Dragon Updated Whale Optimization Algorithm (DU-WOA). Moreover, the security consideration in the paper deals with the introduction of certain security modes like high security, medium security and risky as well. Finally, the performance of proposed work is compared over state-of-the-art models with respect to delay, energy, packet loss, and throughput, respectively.

Mr.K VINAY KUMAR, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Antitheft Sensor Controlled Home Security System

Abstract

In day today life security plays one of the most significant role in the different fields which are commonly utilized for home security reason. As the security system has reached its level high in different aspect for example distinguishing unapproved passage into home, ventures, labs which made requirement for financially savvy home security framework. This framework comprises of 89S52 microcontroller board, IR sensor

module, Remote camera to catch the picture of an individual, Vibration sensor on the off chance that somebody attempts to break the entryway or glass of the home, Micro switch, ASK transmitter and collector, Vicinity sensor which is utilized to detect the unapproved section, LCD to show the subsequent status and GSM module for the correspondence such sending message and missed call to the client and close by police headquarters in any crisis.

Mr.G NAGESWARA RAO, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Design And Analysis Of Ultra Low Power Voltage And Current Regulators

Abstract

This paper provides the scholastic presentation regarding the techniques and circuits used in ultra-power switching regulators. They were generally used for limiting the voltage and to make the fluctuations stable or constant. Methods dealing with the switching Regulators will generally cause specific issues like short circuits, thermal run away etc. by covering both lower and higher switches. In the design of switching circuits like voltage regulators, we make sure that if any voltage fluctuations exist, we stabilize it and this project also includes to make both the high and low currents into a stabilized current using different transistor cells, which are used in many applications in order to get rid of damages. It works on the phenomenon of UVLO i.e. "Under voltage lock out. In case if any input voltage drops below the UVLO, it detects the voltage during operation and forces to stand by stable state to prevent the malfunctioning. When the input voltage rises above the UVLO released voltage again, the UVLO releases into initial voltage .Thus, we have chosen this project because now-a-days the need of ultralow power switching circuits are increasing due to their high demand as they offer more pros of high power conversion ratio, better efficiency and flexibility.

Mr.SK RASOOL, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Fundamental Fractional Exponential Matrix: New Computational Formulae And Electrical Applications

Abstract:

It is well known that the fundamental fractional exponential matrix (FFEM) is closely related to the formal solution of the homogeneous and non-homogeneous linear time-conformable fractional dynamical differential system (LT-CFDDS) with delay in control and it also plays a central role in the solution of any other (matrix) fractional differential system (FDS). Moreover, some attractive and interesting special cases for FFEM are also derived and discussed. In addition, three important and interesting physical applications related to linear fractional electrical circuits (ECs) in 2 and 3-dimentions are considered and solved by means of FFEM. These applications are the fractional RC, RL and RLC-ECs. The method exists by converting the data of a given linear fractional EC into homogeneous or non-homogeneous LT-CFDDS for which solutions can be easily computed. For further and simplicity analysis, we provide an illustrative example for each problem and present the general exact solution (GES) in a simple form based on our new approach. Moreover, graphical results are created and discussed in order to ensure that the solutions of specific problems are stable at different values of α and assure that our suggestion technique is a simple, efficient, accurate, powerful analytic tool and can be applied successfully to solve many other conformable fractional differential problems in various fields. Finally, the classical behaviors of physical problems are recovered when the fractional order α is equal to

Mr.L VASU, Assistant Professor, Dept. of ECE, PBR VITS, KAVALI.

Simulation And Fabrication Of A High-Isolation Very Compact Mimo Antenna For Ultra-Wide Band Applications With Dual Band-Notched Characteristics

Abstract:

In this paper a very compact dual band-notched two-port multiple-input multiple-output antenna with low mutual coupling is presented for portable ultra-wideband systems. This antenna with overall size $18 \times 35 \times 1.6\ mm^3$, consist of two identical monopole elements which fed by two 50 Ω coplanar waveguide lines and fabricated adjacent to each other on the top side of a FR-4 substrate with shared ground plane. To reduce the mutual coupling between elements, a rectangular stub was introduced between them and then it modified to a T-shaped stub. For further reduction, a rectangular slot etched out of the

connected ground plane. Due to the results, proposed antenna achieves wide impedance bandwidth at each port, from 2.3 to 12 GHz covering the whole UWB spectrum except at two eliminating bands. Although this antenna has small size and simple structure, the mutual coupling between elements is lower than −20 dB. By etching out two rectangular single complementary split-ring resonators from the radiating patch, dual band-notched characteristics are obtained in WiMAX and WLAN bands. Envelope correlation coefficient of less than 0.035, nearly omni directional pattern, 90% radiation efficiency despite lossy substrate, high multiplexing efficiency (>−1 dB) except at two notches and peak gain near 6dBi are some other characteristics of this design.

NCACCT-2018 ISBN :9798708030979

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-01

Dynamic Modelling and Controlling of PMSG Based Wind Energy Conversion System

Y. Vamsi Babu, M.Tech Scholar, VEC

In this paper, the hybrid renewable energy conversion system uses a power converter topology with permanent magnet synchronous generator integrated with stand alone and grid connected operations. The configuration consists of a diode rectifier, a buck converter and a voltage source inverter (VSI). The advantage of using diode rectifier is that it provides a low cost solution to convert ac power into dc. A PMSG feeds an isolated load through a closed loop boost converter. The output voltage and frequency of the PMSG is variable in nature due to non uniform wind velocities and is not synchronized with the grid frequency. In order to condition and feed it to grid we need power electronic interface. In this system the PMSG output is converted to variable DC using a diode full bridge rectifier and converted to constant DC using a closed loop boost converter. The variable ac output is rectified by a diode rectifier and maintained constant by a boost converter. The converter output is fed to three phase inverter which employs a sine PWM technique, the output of which is fed to the load. The power converters and together with independent control systems can effectively improve the output voltage and frequency of the wind PMSG feeding an isolated load. The whole system is simulated by using MATLAB/ Simulink.

Paper ID: PED-02

Improvement of Power Quality by Voltage Controlled Adjustable Speed PMBLDCM Drive using a Fly Back Converter

P. Nanda Kumar, M.Tech Scholar, PBR VITS

In this paper, a half-bridge DC-DC converter is used as a single-stage power factor correction (PFC) converter for feeding a voltage source inverter (VSI) based permanent magnet brushless DC motor (PMBLDCM) drive. The front end of this PFC converter is a diode bridge rectifier (DBR) fed from single-phase AC mains. The fly-back PFC converter is operated with the current multiplier control and voltage follower control schemes for improvement of power quality (PQ) at ac mains while controlling the operation of PMBLDCMD in wide range of speeds and input AC voltage variation.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-03

A New Topology of Cascaded Multilevel Inverter with Single DC Source

K. V Harish Kumar Reddy, M.Tech Scholar, PBR VITS

The purpose of inverter is to convert dc power into ac power .In general, this conversion can be done by simple two level inverter topology. But in high voltage and high power applications, these two- level inverters have some limitations in operating at high frequency mainly due to switching losses and constraints of device ratings. To overcome this drawback, multilevel inverter topologies are used especially in high voltage and high power applications. The main idea of multilevel inverters is to get output waveforms with low THD.

This paper presents a new topology of cascaded multilevel inverter with single dc source and high frequency transformers to reduce the harmonics .The proposed topology uses six switch inverters, which are controlled by using phase shifted PWM technique .Discussions have been given to compare the proposed cascaded multilevel inverter with H-bridge cascaded transformer multilevel inverter. Simulation and comparison can be studied using MATLAB/SIMULINK to verify the performance of the proposed multilevel inverter.

Paper ID: PED-04

Enhancement of Stability of Smart Grid System using Shunt FACTS Devices

Sk. Ezra, Assistant Professor, Dept. of EEE, RSR Engineering College

This paper deals with the location of shunt FACTS devices to improve transient stability in a long transmission line with predefined direction of real power flow. Shunt Flexible AC Transmission System (FACTS) devices, when placed at the mid-point of a long transmission line, play an important role in controlling the reactive power flow to the power network and hence both the system voltage fluctuations and transient stability. The validity of the mid-point location of shunt FACTS devices was verified using Simulink, with different shunt FACTS devices, namely static var compensator (SVC) and static synchronous compensator (STATCOM) in a long transmission line using the actual line model. It has been observed that the FACTS devices, when placed slightly off-centre towards sending-end, give better performance in improving transient stability and the location depends on the amount of local/through load. The results are experimented and simulated on MATLAB/Simulink environment.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-05

Solar Energy Grid Integrating Systems

P. Sri Hari

Assistant Professor, Dept. of EEE, N B K R Institute of Science & Technology

Solar Energy Grid Integration Systems (SEGIS) concept will be key to achieving high penetration of photovoltaic (PV) systems into the utility grid. Advanced, integrated inverter/controllers will be the enabling technology to maximize the benefits of residential and commercial solar energy systems, both to the systems owners and to the utility distribution network as a whole. The value of the energy provided by these solar systems will increase through advanced communication interfaces and controls.

This paper presents maximum power point tracking (MPPT) algorithms for grid connected photovoltaic system. Due to the instantaneous changing of solar irradiance and temperature, it is desirable to determine the optimal voltage that ensures maximum energy yield. In order to optimize the photovoltaic energy generation, the MPPT is integrated in the inverter control. Perturb & Observe (P&O), Incremental Conductance (Inc Cond) techniques and fuzzy logic controller (FLC) are applied. A comparison shows the effectiveness of the FLC. The maximum power generated by the photovoltaic system is sent to the power grid to be consumed by the nearest customers.

Paper ID: PED-06

Design and Implementation of an 15-Level Inverter using FACTS Capability for Distributed Energy Systems

Naga Sevitha, M.Tech Scholar, VEC

The paper exhibits an execution of 15-level inverter with modular multilevel converter (MMC) technique for single-phase wind energy inverter (WEI) using facts technology. With this WEI proposed inverter, for small size wind applications will wipe out the use of capacitor banks and FACTS devices are work to control the PF of the distribution lines. The objective of this paper is to introduce new ways to increase the value of renewable energy systems into the distribution systems with the help of FACTS technology. The proposed inverter can transfer active power to the grid as well as keeping the Power factor of the local power lines constant at an objective PF regardless of the incoming active power from the wind turbine. The proposed 15 level single-phase wind energy

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

inverter is placed between the wind turbine and the grid. This inverter can manage active and reactive powers transferred to the grid. The new sorts of converters with FACTS technology will significantly decrease the total cost of the renewable energy application. A modular multilevel converter is utilized to meet all the requirements with IEEE standards, total harmonic distortion (THD), efficiency, and total cost of the system. The simulations of 11,13 and 15-level inverters with MMC technique have been done in MATLAB/Simulink and the % THDs have tabulated in a table . The simulation of 11, 13 and 15 level inverter has been implemented with FACTS technology.

Paper ID: PED-07

Matrix Converter based UPFC

S. Muni Raja, Assistant Prof., Dept. of EEE, PBR VITS

This paper presents a direct power control (DPC) for three-phase matrix converters operating as unified power flow controllers (UPFCs). Matrix converters (MCs) allow the direct ac/ac power conversion without dc energy storage links; therefore, the MC-based UPFC (MC-UPFC) has reduced volume and cost, reduced capacitor power losses, together with higher reliability. Theoretical principles of direct power control (DPC) based on sliding mode control techniques are established for an MC-UPFC dynamic model including the input filter. As a result, line active and reactive power, together with ac supply reactive power, can be directly controlled by selecting an appropriate matrix converter switching state guaranteeing good steady-state and dynamic responses. Experimental results of DPC controllers for MC-UPFC show decoupled active and reactive power control, zero steady-state tracking error, and fast response times. Compared to an MC-UPFC using active and reactive power linear controllers based on a modified venturing high-frequency PWM modulator, the experimental results of the advanced DPC-MC guarantee faster responses without overshoot and no steady-state error, presenting no cross-coupling in dynamic and steady-state responses.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-08

A Hybrid AC/DC Micro-grid and its Control

R. Madhan Mohan
Assistant Professor, Dept. of EEE, AITS (Autonomous)

This paper proposes a new breed of high-voltage dc (HVDC) transmission systems based on a hybrid multilevel voltage source converter (VSC) with ac-side cascaded H-bridge cells. The proposed HVDC system offers the operational flexibility of VSC-based systems in terms of active and reactive power control, black-start capability, in addition to improved ac fault ride-through capa-bility and the unique feature of current-limiting capability during dc side faults. Additionally, it offers features such as smaller foot-print and a larger active and reactive power capability curve than existing VSC-based HVDC systems, including those using modular multilevel converters. To illustrate the feasibility of the proposed HVDC system, this paper assesses its dynamic performance during steady- state and network alterations, including its response to ac and dc side faults.

Paper ID: PED-09

Minimizing the Penalty in Industrial Sector by Engaging the Automatic Power Factor Correction Panel using Microcontroller

S. Salina Sultana, M.Tech Scholar, PBR VITS

In the industrial sector the various motoring loads are continuously running and generating the inductive load. So the power factor in this system gets reduced due to the inductive reactive power. But the electricity board has a standard limits regarding the power factor values and if the power factor goes below the specified limit; the electricity company charges the penalty to the industrial consumers. The automatic power factor correction panel provides the required compensation to overcome the inductive reactance by using the power capacitors. By adding the capacitor to the line will compensate the reactive power and maintains the power factor near to unity. This will avoids the penalty to the industrial consumers and may get the incentives. In the conventional methods we were using the fixed capacitor for compensation. But these were leading to excessive charging of the capacitors causes the voltage surges. Thus it becomes difficult to main power factor near unity by on and off operation of fixed capacitor. The contactor switched capacitors are connected and disconnected automatically eliminating the previous problem.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-10

Hybrid Energy Systems

K. Harsha Varadhan Reddy
Assistant Professor, Dept. of EEE, Visvodaya Engineering College

The Conventional sources of energy are rapidly depleting and cost of power has been escalating day by day. Photovoltaic system is one of the most promising renewable sources of energy. Its ability to produce power by directly converting solar energy in to electricity has led to tremendous surge in its demand. Fuel cell is another alternative energy source. Photo voltaic system and fuel cell converters need to be integrated with each other for extended usage of alternative energy, in order to meet sustained load demands during various weather conditions. It is also required that constant voltage is supplied to the load irrespective of the variation in solar irradiance and temperature. So the photovoltaic fuel cell hybrid system is coupled with Single-ended primary-inductor converter (SEPIC) that allows a range of dc voltage to be adjusted to maintain a constant voltage output and in this paper we also control the speed of a dc motor.

Paper ID: PED-11

UPQC with Additional Control for Providing Voltage Regulation In Distributed Generation

S. Haritha Kumari, M.Tech Scholar, PBR VITS

A new proposal for the placement, integration, and control of unified power quality conditioner (UPQC) in distributed generation (DG)-based grid connected/autonomous micro grid/micro generation (μG) system has been presented here. The DG converters (with storage) and the shunt part of the UPQC Active Power Filter (APFsh) is placed at the Point of Common Coupling (PCC). The series part of the UPQC (APFse) is connected before the PCC and in series with the grid. The dc link can also be integrated with the storage system. An intelligent islanding detection and reconnection technique (IR) are introduced in the UPQC as a secondary control. Hence, it is termed as UPQCμG–IR. The advantages of the proposed are the UPQCμG–IR over the normal UPQC are to compensate voltage interruption in addition to voltage sag/swell, harmonic, and reactive power compensation in the interconnected mode. During the interconnected and islanded mode, DG converter with storage will supply the active power only and the shunt part of the UPQC will compensate the reactive and harmonic power of the load. It also offers the DG converter to remain connected during the voltage disturbance including phase jump.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-12

Different Control Schemes for Design of Controller for Servo System

P. Naga Kondiah, M.Tech Scholar, Sri Krishnadevaraya University

This paper describes the behavior of closed loop servo system with different offline PID controllers. In this paper it is found that the dynamic characteristics of the system with these controllers will not satisfy the requirements. Accordingly this paper proposes a new technique called simplified fuzzy logic controller. The entire system is modeled and simulated by using MATLAB/Simulink software. It is found that the dynamic characteristics like rise time, peak overshoot, settling time and transient behavior are reduced with this proposed simplified fuzzy logic controller. More over it is to be found that the system designed with proposed controller can cope up with the disturbance effects.

Paper ID: PED-13

Stability Enhancement of DFIG-Based Offshore Wind Farm Fed to a Multi-Machine System Using a STATCOM

Y. V. Naga Sundeep, Software Engineer, Hyderabad

In this paper, the simulation results of using a static synchronous compensator (STATCOM) to achieve damping improvement of an offshore wind farm (OWF) fed to a multi-machine system is presented. The operating performance of the studied OWF is simulated by an equivalent aggregated doubly-fed induction generator (DFIG) driven by an equivalent aggregated wind turbine (WT) through an equivalent gearbox. A PID damping controller and a hybrid PID plus Artificial Neural Network (ANN) of the proposed STATCOM are designed to contribute adequate damping characteristics to the dominant modes of the studied system under various operating conditions. A frequency-domain approach based on a linearized system model using root-loci technique and a time-domain scheme based on a nonlinear system model subject to a three-phase short-circuit fault at the connected bus are systematically performed to examine the effectiveness of the proposed control schemes. It can be concluded from the comparative simulated results that the proposed STATCOM joined with the designed hybrid PID plus Artificial Neural Network is shown to be superior for improving the stability of the studied system subject to a severe disturbance than the PID controller.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-14

An Improved iUPQC Controller to Provide Additional Grid-Voltage Regulation as a STATCOM

Chejerla soundarya, M.Tech Scholar, VEC

This paper presents an improved controller for the dual topology of the unified power quality conditioner (iUPQC) extending its applicability in power-quality compensation, as well as in micro-grid applications. By using this controller, beyond the conventional UPQC power quality features, including voltage sag/swell compensation, the iUPQC will also provide reactive power support to regulate not only the load-bus voltage but also the voltage at the grid-side bus. In other words, the iUPQC will work as a static synchronous compensator (STATCOM) at the grid side, while providing also the conventional UPQC compensations at the load or micro-grid side. Experimental results are provided to verify the new functionality of the equipment.

Paper ID: PED-15

Effect of Stacking Sequence and Orientation on Tensile Response of Natural Fiber Reinforced Hybrid Composites: Fibrous - Glass/Hemp/Jute/ Epoxy Composite Plates.

Ch. Naresh, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract –This paper is concerned with evaluation of failure mechanisms under tensile loading with different stacking sequence and orientations of fiber-reinforced laminate composites under tensile loads. The fibrousGlass/Hemp/Jute/Epoxy laminates are fabricated with different stacking sequence and orientations by hand layup technique, and all the parameters of laminated composite materials were measured experimentally. The tensile strength and failure mechanisms were investigated for hybrid composites. Static uni-axial tensile tests were performed on specimens made with single layer of glass, hemp, and jute fibers and epoxy resin combined to give different stacking and orientation hybrid composite materials. The results are analyzed by using Taguchi technique. Keywords-Glass fiber, Hemp fiber, Jute fiber, Stacking sequence, Orientation, Tensile response, Taguchi technique

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-16

Effect of Fiber Length and Weight on Tensile Response of Natural Fiber Reinforced Composite

D. Pavan Kumar, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract - Fiber reinforced polymer composites have been used in a variety of applications because of their many advantages such as relatively low cost of production, easy fabrication etc., . Reinforcement in polymer is either synthetic or natural. Synthetic fiber such as glass, carbon etc. have high specific strength but their fields of application are limited due to higher cost of production, and due to their non biodegradability. Recently there has been an increased interest in natural fiber based composites due to their many advantages, like biodegradability. Coir & banana fibre are used in the present work for making natural fiber reinforced composite. The objective of the present research work is to study the mechanical behavior of coir& banana fiber reinforced polyester based hybrid composites and comparison of properties like young's modulus. The optimum percentage of banana fiber and coir are found by conducting response surface Methodology.

Paper ID: PED-17

Effect of Fiber Length and Weight on Tensile Response of Natural Fiber Reinforced Composite

K Manjusha, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract - Fiber reinforced polymer composites have been used in a variety of applications because of their many advantages such as relatively low cost of production, easy fabrication etc., . Reinforcement in polymer is either synthetic or natural. Synthetic fiber such as glass, carbon etc. have high specific strength but their fields of application are limited due to higher cost of production, and due to their non biodegradability. Recently there has been an increased interest in natural fiber based composites due to their many advantages, like biodegradability. Coir & banana fibre are used in the present work for making natural fiber reinforced composite. The objective of the present research work is to study the mechanical behavior of coir& banana fiber reinforced polyester based hybrid composites and comparison of properties like young's modulus. The optimum percentage of banana fiber and coir are found by conducting response surface Methodology.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-18

OPTIMIZATION OF PROCESS PARAMETERS FOR GAS METAL ARC WELDING OF ALUMINIUM ALLOY A6063 BY ANN METHOD

T.BRAHMANANDAM, , *M.Tech Scholar, PBR VITS*

Abstract— Aluminum alloy 6063 is widely used in boat truck, tower building, ships, electric car, furniture, machine parts, automobile frames and aero plane industrial application due to its high strength, excellent machining performance, good welding characteristics and excellent oxidation resistance .Gas metal arc welding (GMAW) process is used for welding of aluminum alloy 6063.The present work is carried out to analyze the effect of welding parameters on mechanical properties of MIG welded aluminum alloy 6063. GMAW process is used to weld the specimens by using a consumable electrode & argon inert gas. The filler metal is used for joining the plate is aluminum alloy 4043 grade. Current, voltage, gas flow, root gap are the parameters which play a significant role in the assessment of mechanical properties (Hardness & Tensile Strength). Experiments has been carried out and nine joints have been made with 6063 Al Alloy and tested for its tensile and hardness properties. The results were analyzed using ANOVA technique and artificial neural network (ANN). Based on the results, optimum parameters determined. Key Terms: GMAW, MIG, ANN, ANOVA, Taguchi

Paper ID: PED-19

OPTIMIZATION OF PROCESS PARAMETERS ON ALUMINIUM ALLOY ADC12 MATERIAL USING TAGUCHI IN CNC TURNING

P. CHANDRA SEKHAR, (M.Tech) Mechanical Engineering PBR VITS

Abstract: The life time of any work piece depends up on its surface properties. Because it is in direct contact with atmosphere. In today"s manufacturing industries quality is one of the significant factors, the only component to influence the customer to a level of satisfaction. In every industrial sector surface quality is detected by the surface roughness of the component. The demand for high quality aluminium alloys with good surface finish increasing day by day because of newer applications in various fields like aerospace, automobile, die and mould manufacturing and thus manufacturers are required to increase productivity by improving surface quality by avoiding stress concentrators on the surfaces. Some of the parameters which effect the work piece at the time of machining are namely cutting speed, depth of cut, feed and nose radius, cutting environment(dry or wet), etc. The experiment will be carried on three machining parameters, viz., speed, feed and depth of cut as independent variables and the surface roughness parameter as response variable.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-20

FINITE ELEMENT ANALYSIS ON LEAF SPRING MADE OF COMPOSITE MATERIAL

Z. Triveni, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

ABSTRACT A leaf spring is a simple form of spring commonly used for the suspension in wheeled vehicles. Weight reduction can be achieved by designing new materials and sophisticated manufacturing processes. Due to increasing competition and innovation in recent decades, automobile industries show interest in replacing conventional steel leaf spring with fiber-reinforced composite leaf spring which has advantages such as higher strength to weight ratio, higher stiffness, high impact energy absorption, and lesser stresses. Objective of this project is to present a general study on the performance comparison of composite (Carbon fiber–reinforced polymer) leaf spring and conventional leaf spring by both Analytical and Finite Element Analysis. Leaf spring is modeled in ANSYS software. The conventional steel leaf spring and the composite leaf spring were analyzed under constant and variable load conditions using ANSYS software and analytical method and the results are compared .The conclusion of work is to minimize stress and deformation in carbon/epoxy composite leaf spring compared to steel leaf spring for automobile suspension system.

Paper ID: PED-21

Modelling and Analysis of Boron Carbide (B4C) Reinforcement in Aluminium Alloy (A356/LM25) Matrix Composite Using CATIA & ANSYS

N V KISHORE, M.Tech Scholar, PBR VITS

Abstract- The objective of the present work is the modelling, Static and fatigue analysis of a model made of Aluminium Alloy (A356/LM25) reinforced with 0, 5, 7.5 and 10 weight percentage of Boron Carbide (B4C). The model is designed in CATIA and imported to ANSYS work bench for Static and fatigue analysis. The overall work is divided into three phases. First, modelling the object, second static and fatigue analysis and the third is analyzing the maximum von mises stress values, elastic strain and total deformation in an aluminium alloy composites. From the Ansys results, it was found that the Von mises stresses and elastic strains were increased with non linearity as the percentage increase of Boron Carbide reinforcement in the Aluminium Alloy composite. And the deformation was increased with non linearity at 0%, 5%, 7.5% of B4C. Again a little decrease in the deformation at 10% of B4C. With these results it is concluded that 7.5% B4C is the best composition with Aluminium matrix.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-22

Study on Fracture Mechanics for Maraging Steel (M250)

V.GOPALA KRISHNA,M.Tech students, QIS college of Engg

Abstract— Fracture mechanics deals with the investigation of the load carrying capability of a body with or while not a thought of the initial cracks in addition as a study of assorted laws governing of the expansion of cracks. Fracture mechanics is that the field of mechanics involved with the study of the propagation of cracks in materials it uses strategies of analytical solid mechanics to calculate the propulsion on a crack. The process involved in the fracture of solids or so complicated and varied to an extent that no single The process concerned within the fracture of solids close to difficult associated varied to an extent that no single formula or criterion may be expected to realistically describe all of the discovered fracture phenomena. The field of fracture mechanics matured within the last 20 years of the twentieth century. Current analysis tends to lead to progressive advances instead of major grains. This project demonstrates on how the crack initiates, its development , analysing the crack development and how to prevent it from initiating

Paper ID: PED-23

DESIGN AND FABRICATION OF SHEET METAL BENDING MACHINE BY USING THREE ROLLERS

B.Sreenivasalu,M.Tech students, Narayana college of Engg

Sheet metal plays an important role in the metal ma g world. The Poll beding proce usually produces larger parts of cylindrical or conical cruNs soctions in large antity Nemal practice of the roli bending stil heavily depends upon the experience and skill of the operator Trial and nor is a common pactice in the industry Rolling process always began with crucial operation of pre breeding both ends of the workpiece. This operation eliminates lat spod when rolling and clinical stupe and ensures better closure Cylindrical ad conical shell are the basic components used for the various engineering applications like cylindrical tanks, boiler chambers, heat exchanger shells, pressure vessels, tunnels etc

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-24

OPTIMIZATION OF PROCESS PARAMETERS IN ELECTRICAL DISCHRGE MACHINING OF MILD STEEL MATERIAL BY USING RESPONSE SURFACE METHODOLOGY (RSM)

G.Ashok kumar,M.Tech students, Narayana college of Engg

Abstract— The present work demonstrates the optimization process of material removal rate (MRR) of electrical discharge machining (EDM) by RSM (Response Surface Methodology). The work piece material was EN31 tool steel. The pulse on time, pulse off time, pulse current and voltage were the control parameters of EDM. RSM method was used to design the experiment using rotatable central composite design as this is the most widely used experimental design for modeling a second–order response surface. The process has been successfully modeled using response surface methodology (RSM) and model adequacy checking is also carried out using Minitab software. The second-order response models have been validated with analysis of variance. Finally, an attempt has been made to estimate the optimum machining conditions to produce the best possible responses within the experimental constraints.

Paper ID: PED-25

EFFECT OF STACKING SEQUENCE ON TENSILE RESPONSE OF HYBRID COMPOSITES

M.Raj kumar,M.Tech students, Narayana college of Engg

Abstract –This paper is concerned with evaluation of failure mechanisms under tensile loading with different stacking sequence and orientations of fiber-reinforced laminate composites under tensile loads. The fibrousGlass/Hemp/Jute/Epoxy laminates are fabricated with different stacking sequence and orientations by hand layup technique, and all the parameters of laminated composite materials were measured experimentally. The tensile strength and failure mechanisms were investigated for hybrid composites. Static uni-axial tensile tests were performed on specimens made with single layer of glass, hemp, and jute fibers and epoxy resin combined to give different stacking and orientation hybrid composite materials. The results are analyzed by using Taguchi technique.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-26

DESIGN AND FABRICATION OF PLASTIC RECYCLING MACHINE

Y.Jaya kumar,M.Tech students, Narayana college of Engg

Abstract— Plastics are inexpensive, lightweight and durable materials, which can readily be molded into a variety of products that find use in a wide range of applications. Recycling is one of the most important actions currently available to reduce these impacts and represents one of the most dynamic areas in the plastics industry today. The present work en compass (design and fabrication shredder/crusher and extruder of plastic machines) the shredder/crusher of plastic machine is consisting of the four main parts; they are system drive, box, hopper and three blade rotating cutter. Crushing is the process waste into smaller size approximately 0.5 –1cm. The size can be varied depending upon the blade placement with in the crusher. The plastic wastes after segregation fed into the crusher through a Hooper undergo crushing between the stator and rotor. The rotor is driven by an l/2 hp electric motor. The crushed particles there after moves into the extruder of breaking down the plastic. The extruder of plastic machine is consisting of the five main parts; they are hopper, drive of screw, barrel, and nozzle (die), heaters and control system. Extruder is the prime part of the machine where in the crushed particles gets drawn into wires through a die. Screw is the heart of the extruder, which employs heating element through its length .The heat for melting the Crushed plastics is controlled using a heating control unit. The Screw, which is motor driven conveys the molten Plastic to the opening of the die.

Paper ID: PED-27

EXPERIMENTAL STUDY ON COUNTERFLOW HEAT EXCHANGER WITH CuO NANO PARTICLES

K.Thulasi Raman,M.Tech students, Narayana college of Engg

Nano fluid is a fluid having nano size particles, dispersed in the conventional base fluids such as water, engine oil, ethylene glycol, which tremendously enhances the heat transfer characteristics of original fluid. Because of this fluid containing suspensions of metallic nanoparticles and have higher thermal conductivity. In the present study, we have experimentally investigated effect of addition of 1 wt. % CuO nanoparicles in base cold fluid using counter flow concentric tube heat exchanger. The heat transfer coefficient and friction factor of the CuO –Water nanofluid flowing in a counter flow concentric tube heat exchanger under turbulent flow conditions are investigated. The results show that the convective heat transfer coefficient of nanofluid is higher than that of the base liquid by about 3.45 – 9.5%. The heat transfer coefficient of the nanofluid increases with an increase in the mass flow rate of the hot water and nanofluid.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-28

EFFECT OF FIBER WEIGHT AND SIZE ON TENSILE PROPERTIES OF NATURAL FIBER REINFORCED HYBRID COMPOSITES

V.Vignash,M.Tech students, Narayana college of Engg

The tensile strength and modulus of short, randomly oriented hybrid-natural fiber composite was found out experimentally and also predicted using Rule of Hybrid Mixture (RoHM). Hybrid composites were prepared using banana/sisal fibers of 40:0, 30:10, 20:20, 10:30, and 0:40 ratios, while overall fiber volume fraction was fixed as $0.4V_f$. The comparison between experimental and RoHM showed that they are in good agreement.

Paper ID: PED-29

HEAT TRANSFER THROUGH HEAT EXCHANGER USING IRON OXIDE (Fe2O3) NANO PARTICLES AT DIFFERENT CONCENTRATIONS

U.Suresh,M.Tech students, Narayana college of Engg

In this paper, the overall heat transfer coefficient of water based iron oxide nanofluid in a compact air-cooled heat exchanger has been measured experimentally under laminar flow conditions. The concentrations of 0.15, 0.4 and 0.65 vol.% of stabilized Fe_2O_3/water nanofluid have been examined with variation of flow rates in the range of 0.2–0.5 m^3/h. For better dispersion of iron (III) oxide nanoparticles in water, 0.8 wt% polyethylene glycol has been added and pH has been adjusted to 11.1. The air-cooled heat exchanger is consisted of 34 vertical tubes with stadium-shaped cross section and air makes a cross flow through the tube bank with variable flow rates ranging from 740 to 1009 m^3/h. Also, hot working fluid enters the heat exchanger at different temperatures including 50, 65, and 80 °C

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-30

EXPERIMENTAL INVESTIGATION OF MACHINING CHARACTERISTICS OF INCONEL718 IN THE PRESENCE OF MAGNETIC FIELD IN EDM

S.Silamparasan,M.Tech students, RSR Engg college

Abstract. Inconel 706 is a nickel–iron-based superalloy having higher mechanical strength along with easiness of fabrication, which makes it suitable for gas turbine disk applications. The current study investigates the hybrid magnetic-field-assisted powder mixed electric discharge machining (MFAPMEDM) process to improve performance in machining Inconel 706. For conducting experiments, an in-house set-up was designed and fabricated. Experiments were conducted according to the Taguchi L9 OA and ANOVA to examine the effect of the peak current (Ip) and pulse duration (P-on/P-off) on the material removal rate (MRR) and surface roughness (Ra) of the machined samples. The quality of the machined surface is assessed using a field emission scanning electron microscope (FESEM), which has revealed the presence of micro-holes, melted debris and microglobules on the machined specimen surface. The Ra is significantly affected by Ip (49.63%) and P-off (37.12%). Further, Ip has more than 78% contribution to the MRR. Furthermore, a mathematical model has been established to develop the relation between input and output factors.

Paper ID: PED-31

INVESTIGATION OF CUTTING FORCES AND SURFACE ROUGHNESS IN MICRO MILLING OF D2 STEEL.

A.Venkateswarav,M.Tech students, RSR Engg college

Abstract The interaction effect of parameters to surface topography and cutting forces is investigated, and the magnitudes of these parameters are determined in the micro-milling of AISI D2 steel. The results show that the feed per tooth has a prominent impact on the surface topography. Due to the low feed per tooth to cutting edge radius ratio, a high surface roughness and a high amount of burrs are obtained in micro-milling. In micro cutting, the cutting forces present are small; in addition, the radial thrust cutting forces are greater than the principal cutting forces. This research proves that the micro-milling process can be applied to the manufacturing of AISI D2 steel micro parts and presents experimental evidence and possible solutions to the cutting parameters.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-32

EXPERIMENTAL INVESTIGATION ON INFLUENCE OF PROCESS PARAMETERS AND MAGNETIC FIELD ON MACHINING CHARACTERISTICS OF UNTREATED HIGH SPEED STEEL IN EDM

K.Murali,M.Tech students, RSR Engg college

Abstract: Electrical Discharge Machining (EDM) is an unconventional machining process which is most successful and extensively recognized process for machining very hard materials, intricate profiles and small holes with high accuracy. Only electrically conductive materials can be machined by this process. In the present work, Untreated High Speed Steel (M2) is machined using an Electrolytic Copper electrode on Spark Erosion Machine- SN35. The objective of the work is to experimentally study the influence of process parameters such as Current (I), Voltage (V), Pulse ON Time (TON), Pulse OFF Time (TOFF) and magnetic field on Material Removal Rate (MRR), Tool Wear Rate (TWR) and Surface Roughness (Ra).

Paper ID: PED-33

Design and fabrication of hover board fork lifter

P.Sathish kumar,M.Tech students, RSR Engg college

Abstract:- In today life there is wide of fork lifts variety of forklifts from the large heavy loadings trucks to the one that works among narrow aisles forklifts have becomes one of basics transportation tools we use in our lives with all the forklifts in existence we find that there are some improvement that can be to bring forklifts to the better performance. Segway is a self-balancing transportation device with two wheel can operate in any level pedestrian environment. Existing forklifts design has its limitation in rotation and structures has potential safety risk our new design as 90 degrees rotating forks attached to truck body on both ends .also it has a scissor lift under the operator cabin which improves the stability fork ;there is a total of 8 parts in the new design Once the design is conceived, we calculate the mass properties of parts and subassemblies to ensure the stability of the fork lift results show that truck is safe to use its center of gravity remains in the safety triangle and we use this to get the maximum loading capacity then we run stress analysis important parts and subassemblies using finite elements Method (FEM) and their results show that the new design is safe to use under working condition.

ISBN: 9798708030979

Proceedings of National Conference on Recent Trends in Electrical Engineering on 2 - 4th March, 2018 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-34

Desing and fabrication of lawn mower.

Mano haritha

This project is to fabricate a grass cutter with helix shaped blade. At present grass cutter is operated by fuel and electrical energy. The design objective is to come up with a mower that is portable, durable, easy to operate and maintain. In our project we fabricate the grass cutting machine for the use of agricultural field, to cut the crops in the field. This is a new innovative concept mainly used in agricultural field. It is simple in construction and its working is easy. The components that are used are wheel, gear arrangement, roller, bearing, and base frame. Below the gear arrangement cutting blade is revolved. As the gear arrangement rotates the reel mover tends to cut the plants or crops. The reel consists of several helix shaped blades mounted to a rotating shaft. The whole set up is placed on a movable base which has a wheel arrangement. It is used to maintain and upkeep lawns in gardens, schools, college's etc.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-01

UPQC with Additional Control for Providing Voltage Regulation In Distributed Generation

S. Haritha Kumari, M.Tech Scholar, PBR VITS

A new proposal for the placement, integration, and control of unified power quality conditioner (UPQC) in distributed generation (DG)-based grid connected/autonomous micro grid/micro generation (μG) system has been presented here. The DG converters (with storage) and the shunt part of the UPQC Active Power Filter (APFsh) is placed at the Point of Common Coupling (PCC). The series part of the UPQC (APFse) is connected before the PCC and in series with the grid. The dc link can also be integrated with the storage system. An intelligent islanding detection and reconnection technique (IR) are introduced in the UPQC as a secondary control. Hence, it is termed as UPQCμG–IR. The advantages of the proposed UPQCμG–IR over the normal UPQC are to compensate voltage interruption in addition to voltage sag/swell, harmonic and reactive power compensation in the interconnected mode. During the interconnected and islanded mode, DG converter with storage will supply the active power only and the shunt part of the UPQC will compensate the reactive and harmonic power of the load. It also offers the DG converter to remain connected during the voltage disturbance including phase jump.

Paper ID: PED-02

Different Control Schemes for Design of Controller for Servo System

P. Naga Kondiah, M.Tech Scholar, Sri Krishnadevaraya University

This paper describes the behavior of closed loop servo system with different offline PID controllers. In this paper it is found that the dynamic characteristics of the system with these controllers will not satisfy the requirements. Accordingly this paper proposes a new technique called simplified fuzzy logic controller. The entire system is modeled and simulated by using MATLAB/Simulink software. It is found that the dynamic characteristics like rise time, peak overshoot, settling time and transient behavior are reduced with this proposed simplified fuzzy logic controller. More over it is to be found that the system designed with proposed controller can cope up with the disturbance effects.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-03

Stability Enhancement of DFIG-Based Offshore Wind Farm Fed to a Multi-Machine System Using a STATCOM

Y. V. Naga Sundeep, Software Engineer, Hyderabad

In this paper, the simulation results of using a static synchronous compensator (STATCOM) to achieve damping improvement of an offshore wind farm (OWF) fed to a multi-machine system is presented. The operating performance of the studied OWF is simulated by an equivalent aggregated doubly-fed induction generator (DFIG) driven by an equivalent aggregated wind turbine (WT) through an equivalent gearbox. A PID damping controller and a hybrid PID plus Artificial Neural Network (ANN) of the proposed STATCOM are designed to contribute adequate damping characteristics to the dominant modes of the studied system under various operating conditions. A frequency-domain approach based on a linearized system model using root-loci technique and a time-domain scheme based on a nonlinear system model subject to a three-phase short-circuit fault at the connected bus are systematically performed to examine the effectiveness of the proposed control schemes. It can be concluded from the comparative simulated results that the proposed STATCOM joined with the designed hybrid PID plus Artificial Neural Network is shown to be superior for improving the stability of the studied system subject to a severe disturbance than the PID controller.

Paper ID: PED-04

An Improved iUPQC Controller to Provide Additional Grid-Voltage Regulation as a STATCOM

Chejerla soundarya, M.Tech Scholar, VEC

This paper presents an improved controller for the dual topology of the unified power quality conditioner (iUPQC) extending its applicability in power-quality compensation, as well as in micro-grid applications. By using this controller, beyond the conventional UPQC power quality features, including voltage sag/swell compensation, the iUPQC will also provide reactive power support to regulate not only the load-bus voltage but also the voltage at the grid-side bus. In other words, the iUPQC will work as a static synchronous compensator (STATCOM) at the grid side, while providing also the conventional UPQC compensations at the load or micro-grid side. Experimental results are provided to verify the new functionality of the equipment.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-05

Dynamic Modelling and Controlling of PMSG Based Wind Energy Conversion System

Y. Vamsi Babu, M.Tech Scholar, VEC

In this paper, the hybrid renewable energy conversion system uses a power converter topology with permanent magnet synchronous generator integrated with stand alone and grid connected operations. The configuration consists of a diode rectifier, a buck converter and a voltage source inverter (VSI). The advantage of using diode rectifier is that it provides a low cost solution to convert ac power into dc. A PMSG feeds an isolated load through a closed loop boost converter. The output voltage and frequency of the PMSG is variable in nature due to non uniform wind velocities and is not synchronized with the grid frequency. In order to condition and feed it to grid we need power electronic interface. In this system the PMSG output is converted to variable DC using a diode full bridge rectifier and converted to constant DC using a closed loop boost converter. The variable ac output is rectified by a diode rectifier and maintained constant by a boost converter. The converter output is fed to three phase inverter which employs a sine PWM technique, the output of which is fed to the load. The power converters and together with independent control systems can effectively improve the output voltage and frequency of the wind PMSG feeding an isolated load. The whole system is simulated by using MATLAB/ Simulink.

Paper ID: PED-06

Improvement of Power Quality by Voltage Controlled Adjustable Speed PMBLDCM Drive using a Fly Back Converter

P. Nanda Kumar, M.Tech Scholar, PBR VITS

In this paper, a half-bridge DC-DC converter is used as a single-stage power factor correction (PFC) converter for feeding a voltage source inverter (VSI) based permanent magnet brushless DC motor (PMBLDCM) drive. The front end of this PFC converter is a diode bridge rectifier (DBR) fed from single-phase AC mains. The fly-back PFC converter is operated with the current multiplier control and voltage follower control schemes for improvement of power quality (PQ) at ac mains while controlling the operation of PMBLDCMD in wide range of speeds and input AC voltage variation.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-07

A New Topology of Cascaded Multilevel Inverter with Single DC Source

K. V Harish Kumar Reddy, M.Tech Scholar, PBR VITS

The purpose of inverter is to convert dc power into ac power .In general, this conversion can be done by simple two level inverter topology. But in high voltage and high power applications, these two- level inverters have some limitations in operating at high frequency mainly due to switching losses and constraints of device ratings. To overcome this drawback, multilevel inverter topologies are used especially in high voltage and high power applications. The main idea of multilevel inverters is to get output waveforms with low THD.

This paper presents a new topology of cascaded multilevel inverter with single dc source and high frequency transformers to reduce the harmonics .The proposed topology uses six switch inverters, which are controlled by using phase shifted PWM technique .Discussions have been given to compare the proposed cascaded multilevel inverter with H-bridge cascaded transformer multilevel inverter. Simulation and comparison can be studied using MATLAB/SIMULINK to verify the performance of the proposed multilevel inverter.

Paper ID: PED-08

Enhancement of Stability of Smart Grid System using Shunt FACTS Devices

Sk. Ezra, Assistant Professor, Dept. of EEE, RSR Engineering College

This paper deals with the location of shunt FACTS devices to improve transient stability in a long transmission line with predefined direction of real power flow. Shunt Flexible AC Transmission System (FACTS) devices, when placed at the mid-point of a long transmission line, play an important role in controlling the reactive power flow to the power network and hence both the system voltage fluctuations and transient stability. The validity of the mid-point location of shunt FACTS devices was verified using Simulink, with different shunt FACTS devices, namely static var compensator (SVC) and static synchronous compensator (STATCOM) in a long transmission line using the actual line model. It has been observed that the FACTS devices, when placed slightly off-centre towards sending-end, give better performance in improving transient stability and the location depends on the amount of local/through load. The results are experimented and simulated on MATLAB/Simulink environment.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.
Paper ID: PED-09

Solar Energy Grid Integrating Systems

P. Sri Hari
Assistant Professor, Dept. of EEE, N B K R Institute of Science & Technology

Solar Energy Grid Integration Systems (SEGIS) concept will be key to achieving high penetration of photovoltaic (PV) systems into the utility grid. Advanced, integrated inverter/controllers will be the enabling technology to maximize the benefits of residential and commercial solar energy systems, both to the systems owners and to the utility distribution network as a whole. The value of the energy provided by these solar systems will increase through advanced communication interfaces and controls.

This paper presents maximum power point tracking (MPPT) algorithms for grid connected photovoltaic system. Due to the instantaneous changing of solar irradiance and temperature, it is desirable to determine the optimal voltage that ensures maximum energy yield. In order to optimize the photovoltaic energy generation, the MPPT is integrated in the inverter control. Perturb & Observe (P&O), Incremental Conductance (Inc Cond) techniques and fuzzy logic controller (FLC) are applied. A comparison shows the effectiveness of the FLC. The maximum power generated by the photovoltaic system is sent to the power grid to be consumed by the nearest customers.

Paper ID: PED-10

Design and Implementation of an 15-Level Inverter using FACTS Capability for Distributed Energy Systems

Naga Sevitha, M.Tech Scholar, VEC

The paper exhibits an execution of 15-level inverter with modular multilevel converter (MMC) technique for single-phase wind energy inverter (WEI) using facts technology. With this WEI proposed inverter, for small size wind applications will wipe out the use of capacitor banks and FACTS devices are work to control the PF of the distribution lines. The objective of this paper is to introduce new ways to increase the value of renewable energy systems into the distribution systems with the help of FACTS technology. The proposed inverter can transfer active power to the grid as well as keeping the Power factor of the local power lines constant at an objective PF regardless of the incoming active power from the wind turbine. The proposed 15 level single-phase wind energy inverter is placed between the wind turbine and the grid. This inverter can manage active and reactive

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

powers transferred to the grid. The new sorts of converters with FACTS technology will significantly decrease the total cost of the renewable energy application. A modular multilevel converter is utilized to meet all the requirements with IEEE standards, total harmonic distortion (THD), efficiency, and total cost of the system. The simulations of 11,13 and 15-level inverters with MMC technique have been done in MATLAB/Simulink and the % THDs have tabulated in a table . The simulation of 11, 13 and 15 level inverter has been implemented with FACTS technology.

Paper ID: PED-11

A Novel Approach to Three Phase AC/AA Converter Using SPWM

D. Venkata Krishna Reddy, M.Tech Scholar, PBR VITS

3-Ph ac/ac converters with variable frequency have found wide applications in the industry, which uses voltage source inverter with a diode rectifier this configuration features low cost and reliable operation due to the use of a diode rectifier, but it generates highly distorted input line current. These problems can be overcome by using a back to back two-level voltage source converter (B2B 2L-VSC), where a pulse width modulation voltage source rectifier is used to replace the diode rectifier .The B2B 2L-VSC requires a relatively high number of 12 active switches such as insulated gate bipolar transistors (IGBTs). It also needs a dc-link capacitor that is responsible for a limited lifespan and increased cost. To reduce the device count and to minimize/eliminate the dc-capacitor filter, it is proposed to use three phase ac/ac converter using 9 IGBTs to reduce the total number of active switches & total cost.

A three-phase three-leg nine-switch ac/ac converter topology to produce a variable frequency from fixed frequency is presented in this project. This converter features sinusoidal inputs and outputs with low manufacturing cost due to its reduced number of active switches. Generally 12 active switches are used in back-to-back two level voltage source inverter which has 6 legs but in this project one of the three phase legs between the rectifier & inverter is shared with pulse width modulation is used with reduced number of active switches i.e. Only 9 switches (IGBTs) are used.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-12

Matrix Converter based UPFC

S. Muni Raja, Assistant Prof., Dept. of EEE, PBR VITS

This paper presents a direct power control (DPC) for three-phase matrix converters operating as unified power flow controllers (UPFCs). Matrix converters (MCs) allow the direct ac/ac power conversion without dc energy storage links; therefore, the MC-based UPFC (MC-UPFC) has reduced volume and cost, reduced capacitor power losses, together with higher reliability. Theoretical principles of direct power control (DPC) based on sliding mode control techniques are established for an MC-UPFC dynamic model including the input filter. As a result, line active and reactive power, together with ac supply reactive power, can be directly controlled by selecting an appropriate matrix converter switching state guaranteeing good steady-state and dynamic responses. Experimental results of DPC controllers for MC-UPFC show decoupled active and reactive power control, zero steady-state tracking error, and fast response times. Compared to an MC-UPFC using active and reactive power linear controllers based on a modified venturing high-frequency PWM modulator, the experimental results of the advanced DPC-MC guarantee faster responses without overshoot and no steady-state error, presenting no cross-coupling in dynamic and steady-state responses.

Paper ID: PED-13

A Hybrid AC/DC Micro-grid and its Control

R. Madhan Mohan
Assistant Professor, Dept. of EEE, AITS (Autonomous)

This paper proposes a new breed of high-voltage dc (HVDC) transmission systems based on a hybrid multilevel voltage source converter (VSC) with ac-side cascaded H-bridge cells. The proposed HVDC system offers the operational flexibility of VSC-based systems in terms of active and reactive power control, black-start capability, in addition to improved ac fault ride-through capa-bility and the unique feature of current-limiting capability during dc side faults. Additionally, it offers features such as smaller foot-print and a larger active and reactive power capability curve than existing VSC-based HVDC systems, including those using modular multilevel converters. To illustrate the feasibility of the proposed HVDC system, this paper assesses its dynamic performance during steady- state and network alterations, including its response to ac and dc side faults.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-14

Minimizing the Penalty in Industrial Sector by Engaging the Automatic Power Factor Correction Panel using Microcontroller

S. Salina Sultana, M.Tech Scholar, PBR VITS

In the industrial sector the various motoring loads are continuously running and generating the inductive load. So the power factor in this system gets reduced due to the inductive reactive power. But the electricity board has a standard limits regarding the power factor values and if the power factor goes below the specified limit; the electricity company charges the penalty to the industrial consumers. The automatic power factor correction panel provides the required compensation to overcome the inductive reactance by using the power capacitors. By adding the capacitor to the line will compensate the reactive power and maintains the power factor near to unity. This will avoids the penalty to the industrial consumers and may get the incentives. In the conventional methods we were using the fixed capacitor for compensation. But these were leading to excessive charging of the capacitors causes the voltage surges. Thus it becomes difficult to main power factor near unity by on and off operation of fixed capacitor. The contactor switched capacitors are connected and disconnected automatically eliminating the previous problem.

Paper ID: PED-15

Hybrid Energy Systems

K. Harsha Varadhan Reddy
Assistant Professor, Dept. of EEE, Visvodaya Engineering College

The Conventional sources of energy are rapidly depleting and cost of power has been escalating day by day. Photovoltaic system is one of the most promising renewable sources of energy. Its ability to produce power by directly converting solar energy in to electricity has led to tremendous surge in its demand. Fuel cell is another alternative energy source. Photo voltaic system and fuel cell converters need to be integrated with each other for extended usage of alternative energy, in order to meet sustained load demands during various weather conditions. It is also required that constant voltage is supplied to the load irrespective of the variation in solar irradiance and temperature. So the photovoltaic fuel cell hybrid system is coupled with Single-ended primary-inductor converter (SEPIC) that allows a range of dc voltage to be adjusted to maintain a constant voltage output and in this paper we also control the speed of a dc motor.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.
Paper ID: PED-16

Design and Analysis of Flywheel for Punching Machine Operation

K. MADHUSUDHAN REDDY, *M.Tech Scholar, PBR VITS*

Abstract: A flywheel is an inertial energy-storage device. It absorbs mechanical energy and serves as a reservoir, storing energy during the period when the supply of energy is more than the requirement and releases it during the period when the requirement of energy is more than the supply. The performance of a flywheel can be attributed to three factors, i.e., geometry of flywheel, rotational speed and material strength. In the present work, a flywheel design problem is formulated for punching machine which has to be make holes of 30 holes/minute on a steel plate of 18mmthickness with space limitation that is the diameter of flywheel should not exceed 1000mm, hence it can be observed that the design of the flywheel is to be carried out (based) on the availability of space limitation and accordingly the fluctuation of energy, and dimensions of the flywheel were determined. The stresses induced in the flywheel were considered for safe design.

Paper ID: PED-17

Influence of Process Parameters and Magnetic Field in Electrical Discharge Machining of Untreated High Speed Steel

K. VENKATA RAO, *Professor, Dept. of ME, Visvodaya Engineering College*

Abstract: Electrical Discharge Machining (EDM) is an unconventional machining process which is most successful and extensively recognized process for machining very hard materials, intricate profiles and small holes with high accuracy. Only electrically conductive materials can be machined by this process. In the present work, Untreated High Speed Steel (M2) is machined using an Electrolytic Copper electrode on Spark Erosion Machine- SN35. The objective of the work is to experimentally study the influence of process parameters such as Current (I), Voltage (V), Pulse ON Time (TON), Pulse OFF Time (TOFF) and magnetic field on Material Removal Rate (MRR), Tool Wear Rate (TWR) and Surface Roughness (Ra). The process parameters are optimized for maximum Material Removal Rate, minimum Tool Wear Rate and minimum Surface Roughness based on experimental results by using Non-dominated Sorting Teacher Learner Based Optimization (NSTLBO) Algorithm.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-18

Influence of Process Parameters and Magnetic Field in Electrical Discharge Machining of Untreated High Speed Steel

PV NANI KRISHNA, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract: Electrical Discharge Machining (EDM) is an unconventional machining process which is most successful and extensively recognized process for machining very hard materials, intricate profiles and small holes with high accuracy. Only electrically conductive materials can be machined by this process. In the present work, Untreated High Speed Steel (M2) is machined using an Electrolytic Copper electrode on Spark Erosion Machine- SN35. The objective of the work is to experimentally study the influence of process parameters such as Current (I), Voltage (V), Pulse ON Time (TON), Pulse OFF Time (TOFF) and magnetic field on Material Removal Rate (MRR), Tool Wear Rate (TWR) and Surface Roughness (Ra). The process parameters are optimized for maximum Material Removal Rate, minimum Tool Wear Rate and minimum Surface Roughness based on experimental results by using Non-dominated Sorting Teacher Learner Based Optimization (NSTLBO) Algorithm.

Paper ID: PED-19

Multi Response Optimization of Process Parameters for Ball End Milling Using Taguchi Based Grey Relation Analysis

N. PADMA SRAVYA, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract: Aim of the present study is to optimize process parameters in ball end milling of untreated high speed steel M2 for minimum surface roughness and frequency of cutter vibration. As per design of experiments, fifteen experiments were conducted at three levels of spindle speed, feed and depth of cut and experimental results of surface roughness and frequency of cutter vibration were collected. A Laser Doppler Vibrometer was used to measure vibration of cutter in the form of Acousto Optic Emission signals and then the signals were processed and transformed in to frequency domain using a Fast Fourier Transformer. The multi responses were converted in to single response by calculating grey relation grade using grey relation analysis for the fifteen experiments. Further, the grey relation grades of the process parameters were analyzed and optimized by using Taguchi and Analysis Of Variance techniques. The optimization was validated with response surface methodology technique.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-20

An Experimental Study On Drill Vibration, Thrust Force And Surface Roughness In Drilling Of SCF/Carbon Fibre Composite

B. Amar Babu, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

Abstract: In the present work, SCF/carbon composite was prepared with a commercially available vinylester, methyl ethyl ketone peroxide (catalyst) and cobalt napthenate (accelerator). The prepared composite is aimed to use in aircraft application. The composite is treated to improve the characteristics of SCF/Carbon. Drilling characteristics were studied for both treated and untreated composites. As per Taguchi orthogonal array of L8, eight experiments were conducted on the composites and machining characteristics like thrust force, surface roughness and amplitude of drill vibration were measured. Interaction effect of parameter on the machine characteristics was studied using response surface methodology. Analysis of variance was also used to identify significant parameters for the three machining characteristics. A multi response optimization technique was used to optimise parameters for minimization of thrust force, surface roughness and amplitude of drill vibration.

Paper ID: PED-21

Shape And Material Optimization Of A Two Wheeler Front Suspension Frame For Pipe Type And Rectangular Cross Sections

T.KONDAIAH, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

The front suspension frame of a motor vehicle supports all the drive assemblies, i.e. the engine, gearbox and axles. In addition the suspension and steering systems and the shock absorbers are attached to it. The appropriate body is fixed to the chassis. It is essential that the frame should not buckle on uneven road surfaces and that any distortions which may occur should not be transmitted to the body. The frame must therefore be torsion–resistant. The frame of a motor vehicle is the load bearing part of the chassis which supports all forces (wheel forces) and weights. It should be as rigid as possible. The main aim of the project is to model a frame of a two wheeler using 3D modeling software Pro/Engineer. Two models of suspension frames are designed for pipe type and rectangular cross sections. Calculations are done to determine the displacement and stress by applying pressure. To validate the strength of two models, Structural analysis is done by applying the wheels pressure. Analysis is done for frame using two materials steel and carbon epoxy to verify the best material for frame. Modal analysis is also done to determine natural frequencies of suspension frame. Comparison is done by two FEA analysis, and also we can validate the better cross section and material for suspension frame.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-22

Optimization of Process Parameters Affecting Gas Tungsten Arc Welding of AA6082

Y.Mahesh, *M.Tech Scholar, PBR VITS*

In this competitive manufacturing technology, theversatility of aluminum and its alloys makes it the most widelyused metal after steel. In any structural application of aluminumalloys consideration of its Weldability is of utmost importance aswelding is largely used for joining of structural components. Gastungsten arc welding (GTAW) is most commonly used weldingprocess for joining aluminum alloys that has produced low costand high quality joints. The welding of aluminum and its alloyshas always represented a great challenge for researchers andtechnologists. In this paper some important GTAW processparameters and their effects on weld quality are discussed.Taguchi method was employed to optimize the GTAW processparameters.

Paper ID: PED-23

Effect of Stacking Sequence and Orientation on Tensile Response of Natural Fiber Reinforced Hybrid Composites: Fibrous - Glass/Hemp/Jute/ Epoxy Composite Plates.

Ch. Naresh, *M.Tech Scholar, PBR VITS*

Abstract –This paper is concerned with evaluation of failure mechanisms under tensile loading with different stacking sequence and orientations of fiber-reinforced laminate composites under tensile loads. The fibrousGlass/Hemp/Jute/Epoxy laminates are fabricated with different stacking sequence and orientations by hand layup technique, and all the parameters of laminated composite materials were measured experimentally. The tensile strength and failure mechanisms were investigated for hybrid composites. Static uni-axial tensile tests were performed on specimens made with single layer of glass, hemp, and jute fibers and epoxy resin combined to give different stacking and orientation hybrid composite materials. The results are analyzed by using Taguchi technique. Keywords-Glass fiber, Hemp fiber, Jute fiber, Stacking sequence, Orientation, Tensile response, Taguchi technique

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-24

DESIGN AND FABRICATION OF POWER GENERATING EQUIPMENT

ABSTRACT

V.Pavan kumar, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

At present, there is lot of demand for non-convectional electrical energy in the world. Due to day-to-day increase in population and lessen of the conventional sources, it becomes necessary that we must depend on non-conventional sources for power generation. While moving the vehicles possess some kinetic energy and it is cing wasted. This kinetic energy can be utilized to produce power by using a special rangement. Hence, we are planning to generate electrical power non-conventionally y making equipment to produce power from moving vehicles on the road.

Paper ID: PED-25

THEORETICAL AND EXPERIMENTAL STUDIES ON MOTORIESED SCREW JACK FOR LIGHT MOTOR VEHCLES

Z.Triveni, *Assistant Professor, Dept. of ME, Visvodaya Engineering College*

In this modified design, de power screw is rotated bry connecting motor through nivemal coupling, plugged to he automhile 12 V hattery souroe to gemerate power for the prne mever (moter), which transmits its rotating speed to the power screw to be rotated with red speed reduction and increase s drive the power screw The significance and po of this work is to modify the existing car jack in order to make the operation cier, fr and more reliable The modified car jack it easy to ne by women or whoever had problem with the vehicle types along the red.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-26

Inspecting the quality of the Friction stir welded aluminium 7075 joint.

Kishore.ch,M.Tech students, Narayana college of Engg

Friction stir welding (FSW) is a relatively new welding process compared to electron beam or arc welding. Unlike most other welding processes there is no liquid state for the weld pool. For this reason the potential defect types present within the weld are quite different from conventional welding defects such as voids or lack of fusion. These can still be present, but defects such as slag or hot tearing due weld pool shrinkage cannot. Other defects more akinto those associated with resistance welding (joint line remnants) are more likely and can be more serious. TWI has run and taken part in a number of projects including the European 'Qualistir' project lead by R/D-tech. The object of these projects was to develop a reliable inspection method for determining the quality of FSW in a butt and lap welded configurations. This paper describes the novel method developed by TWI for the detection of the joint line remnant defects. The paper describes the use of back scattered noise analysis for determining whether the weld has been correctly forged and whether the metallurgical structure indicates a good weld. Further to the difficult FSW specific flaws the paper also describes how the inspection procedure detects the more conventional defects.

Paper ID: PED-27

EXPERIMENTAL INVESTIGATION OF THE PROPERTIES OF HYBRID FIBER REINFORCED POLYMER MATRIX COMPOSITE MATERIALS

Udai kumar.V,M.Tech students, Narayana college of Engg

A composite is a structural material that consists of two or more combined constituents that are combined at a macroscopic level and are not soluble in each other. One constituent is called the reinforcing phase and the one in which it is embedded is called the matrix. The reinforcing phase material may be in the form of fibres, particles, or lakes The matrix phase materials are generally continuous Examples of composite systems include concrete reinforced with steel and polystyrene reinforced with graphite fibres

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-28

OPTIMISATION OF MACHINING PARAMETERS IN ELECTRICAL DISCHARGE MACHINING OF TITANIUM ALLOY

Yvc.Ragava,M.Tech students, Narayana college of Engg

The aim of this research work is to analyze the significant of process variables and find the optimum process variables in electric discharge machining (EDM) of Titanium alloy (Ti-6Al-4V) .The variables considered are peak current, pulse-on-time and pulse-off-time where as the responses are Material Removal Rate(MRR) and Surface Roughness(SR). MITSUBISHI EA8 spark erosion machine is employed for this work and copper tungsten electrode of Ø14 mm is used in experimental trials. The experimental runs are done based on Taguchi L27 orthogonal array. The signal-to-noise ratio, the analysis of variance (ANOVA), regression analysis and Genetic algorithm are used to determine the optimal levels of machining parameters on Metal removal rate and Surface roughness. Confirmation tests also done with the optimal levels of machining variables. Comparison of Taguchi's and Genetic algorithm were employed to analyze the effective optimum value.

Paper ID: PED-29

DESIGN AND FABRICATION OF MANUALLY OPERATED WATER PUMPING MACHINE

M.Satheesh,M.Tech students, Narayana college of Engg

ABSTRACT The work is designed to alleviate the challenges inherent in pumping water from one particular place to another in the rural areas. It has great applicability in water borehole systems, irrigation, building and bricklaying activities, palm oil and groundnut oil industries and other industries that deal with fluid. The power for the pump can either come from manual pedaling or the dc motor. It incorporated a manual gear assembly which disengages from the pump by means of a clutch when the pump is powered by the dc motor.The major components of the machine include; centrifugal pump, dc motor, sprockets, chain drive, spur gears and angle bar. Testing the pump showed that it has a flow rate of 14litres per minute during manual operation and 24litres per minute during operation with the dc motor.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-30

DESIGN AND FABRICATION OF ELECTRIC BICYCLE

David.S,M.Tech students, RSR Engg college

Now days the automobile industry become more competitive the vehicles can get the energy from petrol or diesel engine for its drive The recent years e-bike became more attractive and less maintenance cost. However only drawback of e-bike is requires frequent charging form EB supply. In this project is based charging arrangement on the ebike. The motor is used the electric energy from batteryand batterycan receive electric energy from lub dynamo. This energy is stored in battery. Market available e-bike batteries are designed to spent 6-8 hours/charge by using EB supply. This e-bikes running cost is very low, when compare to other sources of energy. Today available e-bike are using 3-4 numbers of 12v batteries. In this project only use one 24v battery, the battery cost is reduced.

Paper ID: PED-31

OPTIMISATION OF MACHINING PARAMETERS IN SURFACE GRINDING ON AISI 1070

Ayanish.D, ,M.Tech students, RSR Engg college

Recently, grinding is most common finishing process used for finishing different materials like Cast Iron, Steels, stainless steels, copper, crass, aluminium and its alloy, tool steel, high speed tool steel, nickel alloys etc. Generally the process used for giving finishing to the materials. Super finishing operation also carried out with the grinding process. AISI 1018 Cold rolled steel referred as low carbon steel or mild steel has good mechanical as well as physical properties. It has a good weldability, machinability, easy to forged, easy to cold rolled, good strength and provides ductility. It is used in many applications such as often employed in high volume screw machine parts, commonly employed in shafts, spindles, pins, rods, sprockets assemblies and wide variety of component parts, cars, domestic goods, constructional steel also employed in wire, plate , tin cans, mild steel flanges, tube fittings, pipe fittings, pipes, tubes, fasteners, sheets, rods, bars etc. It can be finished up to 0.46 Âµm with standard grinding operation generally used in industries. By optimizing grinding parameters, it is possible to achieve optimum surface roughness. Aluminium Oxide is often used in grinding of mild steels. Every parameters in grinding process should be considered for achieving minimum surface roughness value i.e. cutting speed, feed rate, depth of cut, coolant flow rate, grain size for both tool and work material(course/fine), physical properties of material, grit size for grinding tool, thermal effect etc. But still dominating parameter in grinding is cutting speed of grinding wheel second one is depth of cut.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-32

INFLUENCE OF PROCESS PARAMETERS ON ELECTRICAL DISCHARGE MACHINING OF ALUMINIUM 7075

D.Sree krishna.,M.Tech students, RSR Engg college

The present paper intends an experimental investigation and mathematical modelling of electrical discharge machining (EDM) of aluminium metal matrix composites. The experiments are conducted based on the concept of central composite design of experiments to estimate the effect of machining process parameters on responses. In the present experimental investigation discharge current, open circuit voltage, pulse-on-time are treated as the input process variables and material removal rate, electrode wear rate and radial over cut are considered as the responses. Fifteen experiments with 3 replicates for each experiment are conducted on aluminium metal matrix composites. The work material which is used in the present study consists of Al7075 and 6% red mud by weight as matrix and reinforcement, respectively. During EDM, it is observed that the discharge current and pulse on-time have significant effect on machinability characteristics of Aluminium metal matrix composite (AMMC). The two factor analysis offers useful information with minimum deviation for controlling the machining parameters to improve the accuracy of the EDMed components.

Paper ID: PED-33

DESIGN AND ANALYSIS OF CARBON AND GLASS FIBER REINFORCED COMPOSITE LAMINATES

V.Naresh Babu,M.Tech students, RSR Engg college

A multi-objective analysis for unidirectional S-2 glass and T700S carbon fibre reinforced epoxy hybrid composites under flexural loading has been presented in this paper. A classical lamination theory (CLT) based model was developed to predict the flexural properties of composite laminates under three-point bending. Four objective functions, namely, maximizing the flexural strength and robustness and minimizing the weight and cost were chosen. The weighted sum method (WSM) was applied to find the optimal solution with the weighting factors being calculated from the analytical hierarchy process (AHP). As an illustration of the method, five different scenarios for the relative objective preferences were examined with the corresponding optimal solutions being determined.

ISBN: 9798708029942

Proceedings of National Conference on Recent Trends in Electrical and Mechanical Engineering on 9 - 10th April, 2017 at PBR Visvodaya Institute of Technology and Science, Kavali, A.P.

Paper ID: PED-34

EXPERIMENTAL INVESTIGATION OF ALUMINIUM BASED METAL MATRIX COMPOSITES

P.V.Vara Prasad,B.Tech student,R.V.S.Pdamavathi engg college

Abstract:- Metal matrix composites (MMCs) have become attractive for engineering structural applications due to their excellent specific strength property and are increasingly seen as alternative to the conventional materials particularly in the automotive, aerospace and defence industries. Al/SiC/Al2O3MMC has aluminium matrix and the silicon carbide particles as reinforcements and exhibits many desirable mechanical properties. In the present study, an attempt has been made to fabricate Al/SiC/Al2O3composite by stire casting method route as it homogenously distributes the reinforcement in the matrix with no interfacial chemical reaction and high localized residual porosity. SiC particles containing different weight fractions (10 and 15%) and mesh size (300 and 400) is used as reinforcement. The paper presents the processing of Al/SiC/Al2O3 by powder metallurgy method to achieve desired properties and also the results of an experimental investigation on the mechanical properties of Al/SiC/Al2O3 are determined.

Paper ID: PED-35

EXPERIMENTAL INVESTIGATION OF THE PROPERTIES OFHFRP COMPOSITE MATERIALS

M.Nagaraj ,B.Tech student,R.V.S.Pdamavathi engg college

This paper presents the development of composite beams using hybrid CFRP/GFRP (HFRP) Ibeam and Normal Strength Concrete (NSC) slab and precast Ultra-High Performance fiber reinforced Concrete (UHPFRC) slab. UHPFRC has high strength and high ductility allowing for a reduction in the cross-sectional area and self weight of the beam. A number of full-scale flexural beam tests were conducted using different dimensions of slab and with/without epoxy bonding between the slab and HFRP I-beam. The test results suggested that the flexural stiffness of composite beams with bolted and bonded shear connection is higher than that with bolted-only shear connection. Delamination failure was not observed in the compressive flange of the HFRP I-beam and the high tensile strength of CFRP in the bottom flange was effectively utilized with the addition of the UHPFRC slab on the top flange.