



JAYAWANT SHIKSHAN PRASARAK MANDAL'S
JAYAWANTRAO SAWANT COMMERCE AND SCIENCE COLLEGE

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College Code: PU/PN/CS/485/2018

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Key indicator: 3.3.1: Number of research papers published

Metric point: 3.3.1

Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

3.3.1.1. Number of research papers in the Journals notified on UGC CARE list year wise during last five years

HEI Input:

2022-2023	2021-2022	2020-2021	2019-2020	2018-2019
1	5	5	13	27

DVV Clarification:

Please provide a direct link to the research paper, the journal's website, and the URL of the content page if it's a print journal

As per DVV suggestion, the supporting documents are attached below

:




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Commerce & Science College
Hadapsar, Pune - 411 028.



Link to redirecting to the uploaded papers first page with author and affiliation on institutional website

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Sr. No.	Title of paper	Name of the author/s	Name of journal	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		Digital page Number.
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(Maharashtra, India) "Digital Technology: Its Impact, Challenges and Opportunities" on 25th February 2023



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Role of AI based E-Wallets in Business and Financial Transactions

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Abstract:

This research paper prominently focuses on the role of AI (Artificial Intelligence) based E-wallets for the Digital transactions in business and financial transactions. It has been observed that incorporation of AI (Artificial Intelligence) in the banking system is apparent. The utilization of AI (Artificial Intelligence) in business and financial transactions is tremendous at the level of the clients / customers and the owners. The use of digitization has brought many modifications in the transactions as they are found very user friendly. This research paper focuses on how E-Wallets are used in business and financial transactions particularly. The present paper covers the most essential aspects related to E-Wallets in relation to its implementation at the level of customer and merchant or trader.

Keywords: AI (Artificial Intelligence), E-Wallets, financial transactions, modifications, incorporation, digitization



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Smart Irrigation System Deploying PSoC and Wireless Sensor Network

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ABSTRACT

Traditional agricultural systems require huge amount of power for field watering. This paper deals with designing of a smart irrigation system, that helps farmers water their agricultural fields using innovative technology. There is no need to frequently apply water across entire fields. Instead, they can use the minimum quantities required and target very specific areas. To increase the productivity, the newer technology is more helpful. The important factors of agricultural sectors are temperature, water and fertilizer management. On

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RESEARCH PAPERS

HUMIDITY MONITORING OF NEONATAL INTENSIVE CARE UNIT BASED ON PROGRAMMABLE SYSTEM ON CHIP

By

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ABSTRACT

A premature baby's treatment takes place in the Neonatal Intensive Care Unit (NICU). The NICU is an isolated room and it consists of a number of baby incubators and measuring, monitoring devices such as Incubator, overhead heater, monitors, ambient oxygen analyser, intravenous drip, feeding pump and tubes, power supply, ventilator monitor, ventilator, etc. The measuring and controlling parameters are temperature of baby and baby incubator, oxygen level, CO₂ level, pulse rates, humidity, light intensity etc. This research paper deals with monitoring the humidity of baby incubators. The increase or decrease of humidity levels causes an effect on the baby's health. High humidity creates problems such as heat exhaustion, heat stroke and an overproduction of mold causes allergies. The monitoring and controlling of humidity are the most important parameters in NICU. The humidity of the baby incubator is monitored using a humidity sensor. The sensing data is given to the Programmable System on Chip (PSoC). The system under investigation is designed successfully and reported in this paper.

Keywords: Baby Incubator, Neonatal Intensive Care Unit, Programmable System on Chip.



Binary Oxide Thin Films Deposition with In_2O_3 as Dopant and MOO_3 as a Functional Material and Study of Physical and Gas Sensing Properties

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Abstract

The undoped gas sensors are not able to sense for a particular gas in this condition to improve the sensitivity and selectivity of sensor is most important task. The sensitivity and selectivity of sensor can be improved by dopants or additives which can change the gas sensing characteristics. A suitable catalyst or dopant is often added in small percentage in the pure material to enhance the sensitivity and selectivity. Nanocomposite term contain mixture of two or more nano oxide materials like binary oxide, ternary oxide, etc. Nanocomposite films consists of nanocrystalline or amorphous phase of a least two different materials $\text{In}_2\text{O}_3:\text{MoO}_3$ binary oxide thin films were prepared by using spray pyrolysis technique on glass substrate at 400°C temperature.



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RESEARCH PAPERS

DEVELOPMENT OF WIRELESS CONTROLLED ROBOT ARM FOR INDUSTRIAL APPLICATIONS

By

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ABSTRACT

In the past decade, revolutionary innovations in allied technology have given rise to the design and construction of ubiquitous mechatronic systems for different domains of industrial applications. The process and manufacturing industries have a lot of areas that are hazardous to direct human interaction. Therefore, development of a wirelessly controlled robotic arm akin to human skills is urgently needed in industrial applications. Further, the deployment of the Arduino Uno microcontroller platform has very promising features for designing mechatronic systems. So, it is proposed to develop a wirelessly controlled robotic arm. In this proposed article, a robot arm having the ability to move in four directions (up, down, left, and right) has been constructed. This controlled mobility is achieved with the help of a 4-DOF



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SYNTHESIS AND CHARACTERIZATION OF BINARY OXIDE

In₂O₃ : MoO₃ THIN FILMS

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ABSTRACT

The sensitivity and selectivity of undoped gas sensor can be improved by dopants or additives which can change the gas sensing characteristics The gas sensors are not able to



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ABSTRACT

The sensitivity and selectivity of undoped gas sensor can be improved by dopants or additives which can change the gas sensing characteristics. The gas sensors are not able to sense for a particular gas in this condition to improve the sensitivity and selectivity of sensor is most important task. A suitable catalyst or dopant is often added in small percentage in the pure material to enhance the sensitivity and selectivity. Nanocomposite term contains mixture of two or more nano oxide materials like binary oxide, ternary oxide. Nanocomposite film consists of nanocrystalline or amorphous phase of a least two different materials. In₂O₃:MoO₃ binary oxide thin films were prepared by using spray pyrolysis technique on glass substrate at 400⁰C temperature. In₂O₃ as dopant and MoO₃ as a functional material in film. The precursor InCl₃ and MoCl₅ of concentrations 0.1N:0.3N. The changes in parameters like sensitivity, selectivity, response time, grain size, surface area, and stability of the gas sensors which were improved by addition of different dopants, and the results of the analysis are presented in the paper.

KEYWORDS :- Gas sensor, spray pyrolysis technique , binary oxide thin films, In₂O₃ , MoO₃, Thin film, XRD , SEM and EDS.

INTRODUCTION

A suitable catalyst or dopant is often added in small percentage in the pure material to enhance the sensitivity and selectivity. The semiconductor metal oxide is used as gas sensor materials, are crystalline in nature and they are connected to their neighboring grains by

Kothawade N B, Dhanwate S. V., Bhise R. B., Gosavi R.S., Ghongade H. P., Kulkarni H. R.



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RESEARCH PAPERS

DESIGN AND DEVELOPMENT OF SMART DISPLACEMENT MEASUREMENT SYSTEM

By

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ABSTRACT

This paper deals with the development of an embedded system to measure the linear displacement deploying electro-mechanical transducer, LVDT (Linear Variable Differential Transformer). On survey it is found that linear displacement measurement have key applications in Instrumentation and Testing, Process and Packaging, Automation, Robotics, Suspension Measurement and Monitoring, Machine Presses, etc. Moreover, in such domain this displacement is in micrometer range. Hence, easy, immediate and preciseness in digital readout is quite essential for further processing or decision making. Therefore, microcontroller MCS-51 series based system is developed to measure the linear displacement, emphasizing the LVDT transducer developed in the laboratory to sense mechanical motion or vibrations. The developed LVDT transducer is interfaced through the microcontroller AT89C51, which has provided features like low



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Synthesis of Ferrite based Sensor and Development of PIC 18F4550 based Sensor Module for Measurement of Ammonia Gas Concentration

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Abstract: The monitoring of hazardous gas and controlling of the same is an important to avoid the dangerous accidents. Considering this fact it is proposed to develop an embedded system based on PIC microcontroller. Moreover, it is proposed to study and development of Ferrite Based Sensor gas sensor for ammonia gas monitoring. For proposed research work, the Ammonia Gas Sensor is designed by using $\text{Co}_x\text{Zn}_{1-x}\text{Fe}_2\text{O}_4$ ferrites. The developed sensor is wired with the signal conditioning system around with PIC microcontroller to obtain the desired aim of proposed research work. The developed sensor is calibrated by using two point calibration method. The PIC microcontroller is programmed by using embedded C, which helps to work all peripheral devices as family members. The developed system is implemented successfully for the typical application.

Keywords: Ferrite Based Sensor, PIC 18F4550, Ammonia Gas, Display Device.

Introduction:



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Review

Microbial Robots to Treat the Third Degree Burnt Patients: Review

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Abstract

Burn incidences are responsible for an estimated 180,000 deaths per year. A burn is a skin damage caused through either high temperature or radiation, radioactivity, electricity, and contact with chemicals. Skin is the primary barrier to infection, and burn patients lose their skin. As a result, the risk of infection persists as the barrier is absent. The leading cause of death after burn injury is sepsis. It is lethal organ dysfunction caused by a host's dysregulated response to infection. Multiple antibiotic-resistant bacteria are responsible for the majority of deaths. Third-degree burns go through the skin and deeper tissues are affected. Third-degree burns may need more thorough treatments, which include intravenous administration of antibiotics to prevent infections, surgical excision, and skin grafting. Treatments given to third-degree burnt patients are not showing satisfactory results. As robot is a suitable way to work in delicate environments, it can be an effective source to deal with sensitive burnt areas. This review focuses on the cause of infection and treatment of burnt patients, and the use of microbial robots to treat third-degree burnt patients.

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1. Introduction:

In the globe, various health issues have been faced by mankind. Skin burns are one of the common

in the patients suffering from nosocomial burn wounds [1].



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Design and Development of Mixed Signal Based SoC using SmartFusion Device for Wireless Sensor Network for Precision Agricultural (PA) Application

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Abstract: Farming has significant role in the progress of human development. Modern agricultural techniques are being used to multiply food production in order to increase food productivity. The agricultural sector is rapidly changing, with a focus on technological farming. Demanding labours are required for continuous monitoring and control of plants located in various locations. It is technically difficult to manage labour and financial profit. New technologies such as Wireless Sensor Network (WSN)

play an important role in modern agriculture in order to achieve this goal. Designing of Node using modern VLSI devices like PSoC and cSoC are low cost, low power and reliable. Based on ZigBee technology nodes in the agricultural field can communicate with the router or coordinator over a long range. The number of deployed sensor nodes and router will be increased to cover the entire field area under investigation.

Key Words: WSN, ZigBee, PSoC, cSoC etc.

1. Introduction:

Recent advancements in Wireless Sensor Network (WSN) technology demonstrate a broad range of applications in a variety of fields. WSN application scenarios include health monitoring, environmental monitoring, tracking, soil parameters monitoring, physical parameters monitoring and industrial parameter monitoring etc.. The present research work emphasizes the design and development of Wireless Sensor Network for monitoring of parameters of high tech agriculture. The WSN may provide suitable solutions to realize precision agriculture, wherein the crops are cultivated in precisely controlled environment [1]. According to the definition the WSN is systematic infrastructure of wirelessly linked Wireless Sensor Nodes [2]. The numbers of technologies have been reported by various researchers and many of them rely

microcontroller, Programmable analog blocks and configurable digital blocks allow realization of single chip solution for embedded system design [6].

2. Designing of Wireless Sensor Node:

Considering various features such as smartness of computing cores, static as well as dynamic configurability, analog and digital cores, configurability of communication interfaces, features of analog interfaces, input impedance of analog cores etc, the SmartFusion based customizable System on Chip (cSoC) device used for development of hardware. According to the salient features WSN and satisfying IEEE standards of wireless communication, the wireless sensor nodes have been developed about ZigBee device.

2.1 Block Diagram of Wireless Sensor Node:

The architectural view of the wireless sensor node is depicted in the block diagram shown in figure 1. Figure 1 is composed of three parts wired together to ensure the standards of IEEE 802.15.4 [7] These are

A Analog Sensing Unit



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RESEARCH PAPERS

INTERFACING OF LVDT WITH AT89S52 MICROCONTROLLER FOR THE DEVELOPMENT OF PRECISE INSTRUMENTATION TO ENSURE ACCURATE MEASUREMENT ACROSS INDUSTRY SPECTRUM

By

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ABSTRACT

Industries always highlight the need to choose the tools that provide accurate and precise measurement of data in a way that is best suited to their product. Electronics industry as well, demands the same, as the electrical and electronic components are becoming more and more complex. There is a growing need of sophisticated instrumentation to ensure the precise measurement of physical quantities to meet the quality control processes. The physical quantities such as force, pressure, weight, strain, etc., are vital across the broad range of industries. To meet this objective, an



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“Manpower Planning in Large Scale Industrial Organisations: Perception and Opinions of HR Officials”

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Abstract –

Manpower planning is one of the most significant practices of human resource management. The present study was conducted in large scale industrial organizations to understand the opinion and perception of HR officials about the manpower planning system in their organization. The study intends to understand the perception of HR officials about, importance, factors influencing on the need of manpower planning, major objectives of manpower planning. The study also focused on the various problems occurred in the



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ORIGINAL REVIEW ARTICLE

Can Coronaviridae Viruses Reappear with their Novel Variants in Upcoming Years?

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Abstract

SARS-CoV2, the infectious biological entity has made havoc across the globe and created a question mark on the survival of humans. This infectious agent is a variant of SARS-CoV spread in 2003 and more dangerous than previous infectious particles belonging to the same family. Biological objects get a mutation in their genetic makeup which is either beneficial or harmful. If a mutation is useful, the entity is selected by nature for survival. Such genetic changes are continuous processes, and organisms generate their variants. In this review, we have highlighted whether this theory is true regarding SARS-CoV2 or not. We have estimated the probability of reappearance of coronaviridae members in future with their variant forms.



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RESEARCH PAPERS

DESIGNING OF THE SMART PATIENT TRANSPORTATION SYSTEM

By

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Date Received: 11/10/2019

Date Revised: 08/12/2019

Date Accepted: 27/02/2020

ABSTRACT

Nowadays, the lifestyle of human being is becoming smarter due to smart electronics equipments for personal as well as domestic applications. The medical field is also powered by the use of advanced technologies in hospitals. Ambulances play a significant role to transport patients from home to hospital or from one hospital to other hospital. At the time of transportation of the patients, ambulances face many critical situations like heavy traffic, traffic signals, bad road including condition potholes, etc. Moreover, the patient in the ambulance bears the roads conditions like up and down and the vibrations of ambulance. Considering such facts, it is proposed to design the smart stretcher. The aim of present research work was to reduce the effect of potholes on roads, road structure and vibrations of ambulance on a patient traveling on a stretcher in a typical ambulance. Vibrations are sensed by a smart sensor and the electronic system is designed to adjust stretcher stand smoothly, hence the effect of potholes on roads, vibrations of ambulances are removed and it becomes easy for healthcare team to transport the patient. The electronic system consist of signal processing and actuators. The signal processing unit processed the sensed data from signal and according to that the



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RESEARCH PAPERS

MICROCONTROLLER BASED EMBEDDED SYSTEM FOR RAILWAY GATE MONITORING AND CONTROLLING

By

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Date Received: 14/01/2020

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ABSTRACT

The trends of electronic devices applications are changes with the evolutionary change in the electronics technology. The field of embedded technology is growing with advanced microcontrollers. Due to this, electronic system is widely used in different sectors for monitoring and controlling. On observation, it is found that controlling railway gate crossing is one of the most important concept and it is proposed to develop and deploy the advanced microcontroller for the same. Hence, the literature survey has been carried out and proposed to deploy advance microcontroller of PIC family to develop a prototype for the present system for monitoring and controlling the railway gate. For this the IR sensor is



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Our Heritage

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Review on a Technology to Propel Vehicles by Magnetic Levitation (Maglev) Technique.

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Key words: Magnetic levitation, Maglev, propulsion, levitation, train

Abstract:



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Key words: Magnetic levitation, Maglev, propulsion, levitation, train

Abstract:

The term "Levitation" refers to technology related to magnetic levitation causes to propel vehicles with magnets and not with wheels, axles and bearings. The vehicle is levitated above and short distance away from a "guide way" which creates both thrust and lift.

Such Maglev trains move very smoothly without friction and noise than mass wheeled conventional transit systems. Such maglev transit system is unaffected by weather. The system works with less power required for levitation. The major power loss is observed to overcome drag (air resistance). The maglev transportation system is more efficient, stable, economic and faster. High speed maglev trains promise to create dramatic improvements for travelling. High-speed maglev trains prospect will certainly prove to be a tough competitor to the aviation industry. It is more economic in construction maglev routes compared to conventional wheeled trains.

1. Introduction:

1.1 Historical recap of Maglev

Jonathan Swift introduced the maglev island of Laputa, which was capable of achieving levitation heights of several kilometers in Gulliver's Travels (1726). In 1842, Samuel Earnshaw, an English clergyman and scientist showed that stable contact-free levitation by forces between static magnets alone was impossible. In March 1912, Emile Bachelet, had



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Parishodh Journal

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“Quality of Work Life in the Large Scale Industrial Organizations – Opinions and perceptions of Employees.”

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Abstract-

The term Quality of work life is based on the concept that improvements in employees' satisfaction and increases in their performance and productivity. The Quality of work life was perceived as a set of methods and approaches or technologies for enhancing the working environment in the organization. Through this study paper attempt has been made to highlight the opinion and perception of employees of large scale industrial organizations situated in Pune City. This study paper through a light on the extent of improvement in quality of work life due to HRD activities, and benefits of quality of work life obtained by employees of large scale



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Alochana Chakra Journal

ISSN NO:2231-3990

“Training and Development: Perception and Opinions of Shop Floor Workers in Industrial Organisations”

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Abstract –

With liberalization many changes are taking place in the industrial sector. There is a pressure on Indian industrial organizations to produce quality product. With increased competition there is a need to become cost effective and efficient therefore every industrial organization have to upgrade their workers' skills and knowledge pertaining to the job assigned to them. This can be achieved by training and development programmes specially conducted for shop floor workers in industrial organizations. Through this study an attempt has been made to know the perception of shop floor workers about training and development their opinion on factors of work life which positively impacted due to training etc. This study



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Alochana Chakra Journal

ISSN NO:2231-3990

“Manpower Planning in Large Scale Industrial Organisations: Perception and Opinions of HR Officials”

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Abstract –

Manpower planning is one of the most significant practices of human resource management. The present study was conducted in large scale industrial organizations to understand the opinion and perception of HR officials about the manpower planning system in their organization. The study intends to understand the perception of HR officials about, importance, factors influencing on the need of manpower planning, major objectives of manpower planning. The study also focused on the various problems occurred in the



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Purakala
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“Teaching and Learning Constraints in Maths and Science at Secondary School Level Education”

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Abstract –

Maths and science have a relevant and unique place in the school curriculum. Majority of the students are considering maths and science as difficult subjects. Teachers are also faced some constraints in the process of teaching these subjects. The present study focused on the problems encountered by teachers and students. This study also focused on the perceptions of teachers regarding the problems faced by the students in learning of maths and science. Various measures have been taken by the teachers to overcome these problems.



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“Manpower Planning in Large Scale Industrial Organisations: Perception and Opinions of HR Officials”

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Abstract –

Manpower planning is one of the most significant practices of human resource management. The present study was conducted in large scale industrial organizations to understand the opinion and perception of HR officials about the manpower planning system in their organization. The study intends to understand the perception of HR officials about, importance, factors influencing on the need of manpower planning, major objectives of manpower planning. The study also focused on the various problems occurred in the



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Parishodh Journal

ISSN NO:2347-6648

“Total Quality Management (TQM): A Scenario in Indian Industrial Organisations”

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Abstract –

Now a days, in Indian industrial organizations quality is perceived to be an urgent and essential factor. Not surprisingly, therefore, Total Quality Management (TQM) has become in thing. This study paper focused on the various factors that affecting the implementation of TQM, factors that motivate an organization to follow the principles of



Development of Microcontroller Based Bluetooth Controlled System for High Power Electric Appliances

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Abstract - Indeed, state of the art technology is playing significant role in the development of wireless controlled high power electric appliances for diversified application. On survey, it reveals that investigators utilized different wireless controlled technologies in hazardous and containment zones. Keeping eye on hours need, inexpensive and robust embedded system is designed deploying MCS-51 series device and Bluetooth technology to precisely control the power of electric appliances. Hence, AT89S52 microcontroller is deployed for the present prototype embedded system. This AT89S52 has low-power, high-performance CMOS 8-bit, In-System Programmable (ISP) Flash memory, etc. as promising features. The HC-06 Bluetooth sensor module is interfaced to the AT89S52. Holistically, Bluetooth technology has good performance features than IR technology, low power consumption, immune to interference, good range, easily upgradable, etc. The TRIAC driven optocoupler, MOC3021 is wired around AT89S52 to control the high power electric appliances using TRIAC BT136. The firmware is developed in embedded C, using Kiel μ Vision3, as an IDE. In this work, developed embedded system is tested through Mobile Bluetooth App and depicted in this paper.

Key Words: Bluetooth, AT89S52 microcontroller, embedded system, Optocoupler, etc.

1. INTRODUCTION

Upon industrial survey, it is observed that many high power appliances or devices are used. The people has to operate these devices manually, sometimes it becomes risky for them. Therefore safety of peoples plays very important role in various



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ORIGINAL REVIEW ARTICLE

Oseltamivir against Influenza in Severe Acute Respiratory Infection (SARI): Review

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Abstract

Many viral diseases have been generating potential health issues to humans. Severe Acute Respiratory Infection (SARI), a disease of respiratory system, is one of them. Treatment of this disease is crucial factor to save human life using oseltamivir because it has been used by medical practitioners and received promising results. Diverse medicines are being investigated for the same purpose. In this review, we have examined the oseltamivir which is used against the infection in question for its efficiency.

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Eisenia fetida and *Eisenia andrei* delimitation by Automated Barcode Gap Discovery and neighbor-joining analyses: A review

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Cytochrome c oxidase subunit I,
ABGD,
Neighbor-joining method

ABSTRACT

Identification and differentiation of morphologically similar species have been a significant challenge to taxonomists due to a higher degree of similarity in their physical appearances leading to make the taxonomic investigation more complex. Such a problem is more common in invertebrate soil animals such as earthworms (*Eisenia fetida* and *Eisenia andrei*) since their identification requires observation of morphological characters that are very difficult and complex to visualize, especially in the case of sibling or subspecies. In this review, we assessed the utility of mitochondrial cytochrome c oxidase subunit I (COI) gene as a molecular marker for identification and differentiation among these species. We achieved this by analyzing their phylogeny using the neighbor-joining method and Automated Barcode Gap Discovery (ABGD) by retrieving 84 COI sequences from NCBI. As a result, we found that the identification and differentiation success of *Eisenia fetida* was 96.42%, whereas, for *Eisenia andrei*, it was 100%. Besides, ABGD analysis suggested that the species failed to give a distinct barcode gap, and the partition pattern may be due to probable misidentification leading to concrete discrepancies among results of ABGD and NJ trees. Finally,

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ORIGINAL REVIEW ARTICLE

Current Status of Potential Vaccine against COVID-19: Review

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Abstract

From many years, different viruses such as SARS-CoV2 have been a genuine threat to the world that wiped away thousands to millions people from the earth. Since the advent of viral diseases, vaccines have been proved as the ultimate solution to eradicate or prevent them from spreading to the larger population. Although it takes many of years to develop a potential vaccine, it is more effective in reducing viral spread. After the outbreak of SARS-CoV2, scientists around the globe are struggling to develop vaccines to stop its spread and help the people who are seriously ill. In this paper, we have evaluated current status of vaccine development to treat the virus under study.

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ORIGINAL REVIEW ARTICLE

Status of Bacteriophage Genetic Modifications: a Review

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Abstract

Engineering is the branch that covers many areas leading to a discipline termed as synthetic biology. The researchers made possible engineering at genetic level of bacteriophages which are well known for killing bacteria although they develop resistance against bacteriophages resulting into challenges in disease control programs. The genetic alterations give new characters to the phage which may be helpful to bring vital changes in phage science. In this review, we have investigated the genetic modification of bacteriophages with its applications.

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Synthesis, Spectroscopic Characterization Of Some Transition Metal Complexes Of Unsymmetrical Tetradentate Schiff Base Ligand

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ABSTRACT

A new series of Ni(II), Cu(II) and Zn(II) complexes with tetradentate unsymmetrical Schiff base ligand derived from Dehydroacetic acid, 4'-hydroxy benzaldehyde and 6-methyl-1,3,5-triazine-2,4-diamine have been reported. The complexes have been characterized by elemental analysis, magnetic susceptibility measurements, conductometry, electronic and infrared spectra, X-ray diffraction and ¹H-NMR spectra, thermal analysis. The ligand and its complexes were screened for their antibacterial activity against bacterium *Staphylococcus aureus*, *B. subtilis* and *Escherichia coli*, *K. pneumoniae*. The result indicated that the complexes exhibited good antibacterial activities.

Keywords: Dehydroacetic acid, Unsymmetrical Schiff bases, Transition metal complexes, elemental analysis, Powder X-ray diffraction.

INTRODUCTION

Tetradentate Schiff bases are well known to co-ordinate with various metal ions and have attracted a great deal of interest in recent years due to their rich co-ordination chemistry¹. Schiff bases of 6-methyl-1, 3, 5-triazine-2, 4-diamine reported to have variety of applications including biological, clinical and analytical fields^{2,3}. Metal complexes make the compounds effective as a stereospecific catalyst towards oxidation, reduction, hydrolysis, biological activity and other transformations of organic and inorganic chemistry. Schiff base complexes play a vital role in designing metal complexes related to synthetic and natural oxygen carriers^{4,6-8}. Many unsymmetrical tetradentate bis-Schiff bases of 1.

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Manifestation of unrequited love in yeats' poetical creations

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Abstract

The present paper purports Maud Gonne as Yeats' unrequited love and the Muse to his poetry. He had tried to seek her love repeatedly but he failed every time. His poetical creations have become the way to speak about his unrequited love as well as inspiration to his initial poetry. The researcher has made an attempt to find the influence and presence of unrequited love in Yeats' literary creations. He made all the efforts to seek his love throughout his life but it was useless and futile. Most of his poems contain direct and indirect reference of Maud Gonne. In brief, Maud has immense significance in Yeats' literary creations.

Keywords: unrequited, love, presence, literary creations, significance

Introduction

William Butler Yeats (1865–1939) was an Irish poet, the prominent figure of twentieth century and the founder of 'Abbey Theatre'. He was a driving force of Irish Literary Revival. Yeats was fascinated by both Irish Legends and

symbolically and stands for Maud Gonne, the prime affection of Yeats. 'Phoenix', the mythological bird, lives for five to six centuries in the Arabian Desert and on funeral pyre got burned and resurrects with the new life. 'Phoenix' symbolizes Maud Gonne being unique and passionate love of the poet. *Leda, the most beautiful woman, and the*



Spoilage and preservation of milk and milk products: A review

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Abstract: Milk and milk products which provide nutrition have fundamental importance from historical period. These are aids for enhancing economic status of farmers as well as sellers and improve health of customers. However, these products may get spoiled due to microbial contamination leading to potential loss of not only producers and sellers but also consumers. As a result, there is urgent need to analyze reasons of spoilage of such products along with their preservation for their long term uses. In this review, we inspected basic reasons of spoilage of products under study and highlighted their preservation methods so that these can be used to meet needs and demands of global growing population with respect to food.

Index Terms - Milk, Contamination, Spoilage, Preservation, Products, Microorganisms, Utensil.

INTRODUCTION:

India is agricultural country which has been passed through white revolution and diverse dairy products meeting food demands of growing population. Dairy products such as *lussy*, *shrikhand*, *basundi*, ice-cream, badam shake etc. are being consumed by Indian nationals in considerable amount, as desserts in many cases. However, these food items have been always suffering from long term preservation errors from beginning of human civilizations. Owing to improper preservation and storage facilities in India in cold environmental settings (Neelam Khetarpaul 2012), Indians are losing such value added food stuffs leading to loss in manufacturer's economy as well as accelerating undernourishment problems in the nation, especially in poverty areas.

In this review, we highlighted the major problems regarding spoilage and preservation of milk and milk products and their probable solutions supporting economy and improved health of people resulting into high quality economic status of producers.

Microbial Spoilage

Microorganisms are the microscopic living entities that are responsible for heavy spoilage of milk and milk products. Milk is lacteal secretion that is clean, fresh and whole which is obtained from milking animals (De S 2001). According to Sowmya Y (2017), milk spoilage can be described as deterioration of flavor, texture and color of it leading to unsuitability of it for human consumption. Number of microorganisms can grow in milk as it is potentially nutritious growth medium (D K Sandrou and I S Arvanitoyannis 2000). Similarly, spoilage of milk and its products may lead to change in flavor and texture. Alike, moldiness as well as a bitter flavor can be developed in milk product (Srinivasan and Anantkrishnan 1964). Dairy products become inedible owing to spoilage altering flavor, value in relation with nutrition and texture (Mahendra Pal and Vijay J Jadhav 2013) that are important. Mahendra Pal and Vijay J Jadhav (2013) proposed similar view and reported that spoilage is responsible for alteration of texture, flavor along with



Mitochondrial Cytochrome c Oxydase Subunit I (COI) Gene based Identification and Control of Invasive Stink Bug Species: A Review

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Abstract: Infestation of economically important crops by invasive pests such as stink bugs has been ever increasing problem in the globe from many years and their controlling strategies are being implemented in many countries. However, their identification and relationship with hosts have been poorly understood because of insufficient platform of morphology based taxonomical science, especially in the cases of immature or damaged specimens where external characters are uneasy to detect. Putting effective pest management programs into the operation is merely impossible if the target stink bug species, harms caused by them and their hosts are poorly investigated. Moreover, target oriented pest control strategies avoiding disastrous effects on non-harmful biota require understanding of species diversity of pests and their host plants under study which are difficult if morphological database is implemented. Therefore, in this review, we assessed the COI gene based species identification methodology of potentially destructive stink bugs, economic losses caused by them, their chemical and biological controlling strategies in addition with role of DNA barcoding in biomonitoring of these pests generating awareness among global farmers to overcome the problem of losses to commercial crops and orchards.

Index Terms - Stink bugs, pest management, COI gene, host specificity, identification problems, crop loss, biota.

INTRODUCTION



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DNA based Identification of Food Pests: a Review

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Abstract: Food which is one of the basic requirements of humans have vital role in social health that should be authenticated for its quality, efficiency and efficacy to avoid spread of food born hazards caused by contaminating biological particles. Many insect species which are potent sources of food damage affecting consumer's health thrive in food materials originated from broad range of agricultural systems are not satisfactorily identified by existing morphological taxonomical keys causing impediments in their detection and eradication programs. Nonetheless, we have examined recently emerged DNA based identification systems such as species-specific PCR and real-time PCR using specific molecular marker, for instance, mitochondrial COI gene, which are powerful techniques for effective taxonomic investigations of food pest species that work with global comprehensive DNA sequence database. Moreover, we highlighted the molecular identification strategies for foodstuff infesting insect species in addition with bioinformatics tools that revolutionized the area of food entomology boosting up the effective implementation of global legislative laws making consumer's lives healthy and cheerful.

Index Terms - Food, species-specific PCR, real-time PCR, mitochondrial COI gene, bioinformatics tools.

INTRODUCTION:

The quality of stored food products determines human health which has gained considerable attention of food legislative agencies of many countries. During the period of last some years, the incidences of food infecting pests have been recorded with greater frequency (Kim 2011) may be due to increased food production to meet demands of increasing global population and insufficient storage and transportation facilities available for produced food materials. Since contamination of food materials by pests



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Designing of Mixed Signal Based System-On-Chip for ECG Monitoring

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ABSTRACT- Now days, all sophisticated medical laboratories and hospitals are well equipped with such system wherein principle of embedded system is emphasized. An ElectroCardioGram (ECG) is the test that records the electrical activity of the heart. It is the technique, which can be used for diagnostic purpose. Traditionally embedded systems rely on off chip designing. Recent rapid progress of modern technology has been going on integrate whole system on a chip. A concept of "System-on-chip" (SoC) is just realized as a real product. The wide use of CMOS technology for analog circuits becomes vital for the mixed signal SoC design and become main stream in LSI industry. In this paper we designed system for ECG measurement by using SmartFusion device A2F200M3F. SmartFusion provides flexible design platform, onchip facilities of these device combine analog part, ARM cortexM3 processor core, FPGA platform and flash memories.

Keywords: System-on-Chip, ECG signal, SmartFusion

INTRODUCTION:

Cardiac problems are increasing day by day. The electrocardiogram (ECG) is an important tool for providing information about functional status of the heart and to diagnose the heart problem [1]. The ECG is characterized by a recurrent wave sequence of P, QRS and T- wave associated with each beat [2]. This signal could be measured by electrodes from human body in typical arrangement. The QRS complex is the most striking waveform, caused by ventricular depolarization of the human heart [3]. The history of electrocardiography starts at the middle of the 19th century when Ludwig Hoffa first described unregulated actions of the ventricles [4]. He



Development of Mixed Signal Based SoC for Monitoring of Neonatal Intensive Care Unit (NICU) Parameters

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Abstract : Now a days the lifestyle is changes and health issues are becoming serious problem. The advance technology may be providing satisfactorily effects to face such problems. However, the new born babies are also facing different issues. On site survey of different hospitals, it is found that, the new born babies are treated under Neonatal Intensive Care Unit, which helps to monitor some specific medical parameters such as temperature, Phototherapy lamps intensity of light, humidity, body temperature of baby, oxygen, heart rate, pulse rate, X-ray, CT scan etc. However, they are very costly and not affordable to the ruler area. Some time it is observed that mother is admitted in one hospital and new born baby is admitted to nearby hospital where NICU is available. To provide it in affordable cost by deploying innovative mixed signal technology is the prime aim of the present research work.

Keywords : Baby Incubator, Neonatal Intensive Care Unit (NICU), Phototherapy, SmartFusion, System-on-Chip(SoC), X-ray

I. Introduction

Nowadays the lifestyle is changes and health issues are becoming serious problem. The advance technology may be providing satisfactorily effects to face such problems. However, the new born babies are also facing different issues. On site survey of different hospitals, it is found that, the new born babies are treated under Neonatal Intensive Care Unit, which helps to monitor some specific medical parameters such as temperature, Phototherapy lamps intensity of light, humidity, body temperature of baby, oxygen, heart rate, pulse rate, X-ray, CT scan etc. However, they are very costly and not affordable to the ruler area. Some time it is observed that mother is admitted in one hospital and new born baby is admitted to nearby hospital where NICU is available. To provide it in affordable cost by deploying innovative mixed signal technology is the prime aim of the present research work.

The mix signal based VLSI design is an innovating field, which shows wide angle of application in embedded world. The analog devices have lot of difficulties also accuracy are not sufficient to give readings. The solution for these is uses digital design technology. The FPGA provide better solution only for digital



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RESEARCH PAPERS

AN ELECTRONICS SOLUTION TO FACILITATE SMART CITY FOR WASTE MANAGEMENT

By

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ABSTRACT

Recently, Government of India has been implementing the schemes of smart city for various cities. The smart city services such as transportation, security, water distribution, electricity distribution, environmental pollution monitoring, waste management, etc., are the major services, which should be made smart to realize the theme of smart city. Out of these services, waste management plays a commendable role in making the city smart. Collections of waste management of the same are the major problems in many cities. Therefore, the present research work is undertaken for designing of smart electronic solution for waste management. To achieve the desired goal of waste management of smart city, an innovative technology, called popular embedded technology and Wireless Sensor Network (WSN) are used, where embedded technology helps to design the application and user interface layer and the WSN helps to integrate



RESEARCH PAPERS

DESIGNING OF REMOTE TERMINAL UNIT (RTU) FOR MEASUREMENT OF pH IN WATER TREATMENT PLANT

By

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Date Accepted: 18/10/2019

ABSTRACT

Nowadays, the industrial automatization is the need of the hour for improving process in various industries. On survey, it is observed that, it may help to increase the quality, reduce cost and time to get the product in market. The physicochemical monitoring and controlling is the challenging task in the field of industrial sectors. Considering such facts, it is proposed to develop Remote Terminal Unit (RTU) to monitor the physical parameter. The present research work is carried out to monitor the pH of water in water treatment plant. For this purpose, the RTU is wired with FRDM-KL25Z based ARM Cortex™ M0+ core microcontroller along with sensing and signal conditioning capabilities are used. Moreover, the sensed and processed signal is transmitted towards supervisory computer through RS232. On other hand, the pH of the water is recorded on the supervisory computer of Supervisory Control and Data Acquisition (SCADA) system. The RTU is calibrated to demonstrate the pH in standard unit. The developed system works successfully for monitoring the pH of water under experimental conditions.

Keyword: pH Sensor, FRDM-KL25Z, MAX232, Operational Amplifier (TLC272), Power Supply.

INTRODUCTION

The field of embedded technology is ubiquitous and exhibits great pervasiveness in the field of electronic instrumentation design. The smart embedded devices, wherein 8 bits, 16 bits, or 32 bits microcontroller philosophy

physical parameter, the authors have visited the sugar industry and water treatment plant of the sugar industry (Dalgavane & Galkwad, 2017). On survey the authors have found the parameters such as Electrical Conductivity (EC), Dissolved Oxygen (DO), temperature,



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RESEARCH PAPERS

INVESTIGATION OF WSN PARAMETERS FOR REALIZATION OF QUALITY OF SERVICE

By

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ABSTRACT

In this paper, emphasizing on the Quality of Service (QoS), the parameters of the Industrial Wireless Sensor Network have been investigated. Deploying an ubiquitous embedded technology, the smart sensor motes have been designed in which the standards of IEEE 1451 are realized. According to these standards, the Network Capable Application Processor (NCAP) plays a vital role on establishment of wireless communication, along with transduction and intelligent computing. The ZigBee device has been used to facilitate the sensor motes with smart communication module. The ZigBee devices are operating according to IEEE 802.15.4 with amended PHY and MAC layers. Thus, the sensor motes have been designed, wherein two standards IEEE 1451 and IEEE 802.15.4 are suitably confluenced. The base station, which is inherent part of WSN, is developed and utilized for the establishment of WSN in desired protocol. The parameters, such as Receiver Signal Strength Indicator (RSSI), Link Quality Indicator (LQI), Packet Reception Rate (PRR), Delay Time (DT)



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A Study of Marketing factors influencing on Consumers Buying Behavior : With special reference to shopping Malls in Pune city

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Abstract :

To understand the various aspects of marketing, it is essential to understand buying behavior of consumer. Consumer behavior is the study of when, why, how and where consumer do or do not buy a product. It includes psychological, sociological, and social anthropology and economic elements. Through the present study, an attempt has been made to understand consumers interest to visit shopping mall, influencing marketing and personal factor concerned with their buying decision. It also tries to find out the various departments to which consumers are more satisfied.

Key words : Consumers buying behavior, Shopping Malls, Influencible Marketing and Personel factors.

I) Introduction :

To understand the buyer and to create a consumer through this understanding is the main purpose



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A Review on Conceptual perspective of Talent Management and Management Responsibility towards talent of Employee

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I] Introduction:

Over the years, talent management has evolved, along with expanding responsibilities and sophistication of the HR profession to be incorporated into the goals and strategy of an organization. Talent management has moved away from being an administrative process to a continuous organizational practice with a strategic focal point that drives organizational outcomes. The treasure of talent is now hunted in the famous talent wars. It is the top business priority for leaders, surpassing the growth as a commercial objective, according to a new international study.

Talent management is the key to organizational success to achieve organizational



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Review On Industry 4.0 And Status Of It's Adoption In India

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Abstract

Today's industry needs digitization of manufacturing process. The concept of mass production is changing to customized production in manufacturing processes.. It has been observed that increased productivity is due to rapid advancements in manufacturing technologies. The term Industry 4.0 implies fourth industrial revolution. It is a new level of organization as well as control over the entire value chain of the life cycle of products. The emphasis is given to increasingly individualized customer requirements and taste. Industry 4.0 is strictly related to incorporation of human in the manufacturing process results into



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Review Study on Current Status, Opportunity and Threats in the Use of Electric Vehicles.

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Abstract:

Over the past decade there is increasing interest in bordering on enthusiasm, for electric vehicles. The car manufacturers were initially skeptical about electric vehicles are now committing billions of dollars to their production. There are several unresolved questions remain regarding battery powered electric vehicles be competitive with conventional gasoline-



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Internet: A Treasure Box for Teachers and Students

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Internet, resource, technological growth, teaching-learning, etc.

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ABSTRACT

In the past there were limited resources for learning. Books were the prominent resources and they could be borrowed and studied. Definitely books are also the best source in the present era. Meanwhile the technological growth increased rapidly and the world has become globally interconnected. In this digital world one should be able to use technical inventions properly. Digital literacy has become inseparable part of everyone's life. Traditional methods of teaching-learning can be assisted with the help of ICT (Information and Communication Technology). Internet, interconnected network of computer servers, can be brought into play as the teaching-learning tool by the teachers as well as students constructively. With the minimum technological knowhow as well as basic technical equipment one can access internet. Internet can be a great assistance as well as resource to both teachers and students. It is the fact that Internet has brought a tremendous change in the teaching-learning process. Thus, this paper is an endeavor to create awareness among the teachers and the students regarding the effective use of internet in teaching-learning process.

1. Introduction

Bill Gates states that "The internet is becoming the town square for the global village of tomorrow." Technological

1) MOOCs (Massive Open Online Courses)

MOOC stands for 'Massive Open Online Courses'. These are the free courses developed by experts from various



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AI based banking system: A strategic customer centric approach

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Abstract

The present paper is an attempt to focus on the implementation of Artificial Intelligence (AI) in the banking sector. Banking sector has achieved tremendous significance in the economy of the nation as well as the world. It works on the basis of financial transactions of various types. Due to its emergence as the part and parcel of everyone's life, it has been facing many security issues. Compliance, Fraud, Cyber security, integrating new technologies and Identity Theft are some issues before banking sector. The solution for making the banking sector customer centric and customer friendly is Artificial Intelligence. AI is a computer based machines replication of human intellect. It is the gifted innovation of technology. It includes the theory and development of computer systems able to carry out tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Keywords: artificial intelligence, security, customer centric, technology, computer system, etc

1. Introduction

Digitization has become inevitable in all the sectors. It makes our life easy as well as smooth. Technology has gifted many innovations that can ease our lives. Banking sector has also been modified and influenced by digitization.

years — a higher than the global average of 79%. “93% bankers in India said they increasingly use data to drive critical and automated decision-making...”

Activate
Go to Set

3. Areas where AI works effectively



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ARTIFICIAL INTELLIGENCE (AI) BASED INSTRUCTIONAL PROGRAMS IN TEACHING- LEARNING OF ENGLISH LANGUAGE

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ABSTRACT

The endeavor of this paper is to demonstrate effectiveness of AI based instructional programs in English language teaching-learning. Effectiveness of any strategy, electronic/technical gadgets and theories cannot be verified without practical experimentation of it. Digitization has become the crucial part of our life. Indeed, it is considered the inevitable aspect and the driving force of the world. The world has made tremendous progress in a variety of sectors due to technological innovations and its applications. Education, being one of the prominent sectors, has been adopting various methodologies all the time. Trial and error are always observable factors in teaching and learning. Education has already adopted ICT (Information and Communications Technology) based technologies and gadgets. All such gadgets, applications as well as instruments help to enhance effectiveness of English language teaching-learning. The researcher is trying to incorporate AI based virtual reality in association with physical reality to learn English language. The most significant and user friendly AI based techniques can be a great aid to teachers to make the teaching



Smartphones: An Effective Aid in Teaching-Learning of English Language

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Abstract— This research paper covers the utilization of smart phones effectively in the teaching-learning process of English at a variety of levels. In this world of technology use of technological innovations and electronic gadgets have become the inseparable parts of our life. These technological innovations have brought enormous change in everybody's life. Smart phone is, being the handy electronic gadget, one of the outstanding inventions of technology. The concept of ICT based education has changed entire teaching-learning process. Teachers as well as students are techno-savvy and believe in learning through the electronic gadgets. As the students have knowhow of the electronic gadgets, the teachers also need to employ such devices in their teaching process. Day by day the sacred field of education is being developed and modified with the help of technological progress all over the world. It also saves time of both the teachers and the students. This paper specifically covers the ways of smartphones implementation in the teaching-learning process. Thus, the present paper is a modest attempt and the result of the continual research and use of smartphones in teaching-learning process of English language.

Keywords— technology, Smartphones, ICT based education, electronic gadgets, teaching-learning.

I. INTRODUCTION

Technological growth is inevitable for every nation to become developed. Such growth is essential in all the major and minor sectors also. The concept of 'Digital Literacy' denotes the practical knowledge of the electronic gadgets. Without 'digital literacy' one cannot become a successful teacher as well as student. A Smartphone is one of the crucial technical inventions. It must be utilized in all the sectors and specifically in the field of education constructively. The researcher, being in the field of teaching more than a decade, has been using smartphone

II. USAGES OF SMARTPHONES IN TEACHING-LEARNING PROCESS OF ENGLISH

The below-given are some of the prominent usages of the smartphones in teaching-learning process of English. They are beneficial in learning and improving listening, speaking, reading, and writing skills (LSRW) of English.

1. Enriching Vocabulary

Vocabulary is the base of every language and the English language learners have to learn the vocabulary of the target



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ISOLATION OF DNA FROM ONION

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ABSTRACT

This has been proven experimentally that DNA is the molecule of heredity. The importance of nucleus which contain DNA will be identifying by the observation, that there exists thread like objective inside the nucleus, called as chromosomes. Gel electrophoresis is a method that separate macromolecules such as nucleic acids or proteins. The electrophoresis term is used to describe the migration of charged particle under the influence of an electric field. Thus, gel electrophoresis refers is the technique in which molecule are forced across a span of gel, motivated by an electric current. On either end of the gel there are activated electrodes that provide the driving force. Therefore, a molecule's properties especially the possession of ionisable groups, determine how rapidly an electric field can move the molecule through a gelatinous medium. One very important application for gel electrophoresis is in DNA Technology. We are now using biotechnology to study the basic processes of life, diagnose illnesses, and develop new treatments for diseases. For example, isolation of DNA from animals, vegetables and microorganisms. Isolated molecule from Onion for enhancing gene expression of a coding sequence, fragment, genetic variant, cassette, vector, cell, plant and seed.

KEY WORDS



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A STUDY OF CUSTOMER SATISFACTION LEVEL-WITH SPECIAL REFERENCE TO NATIONALISE BANKS IN PUNE CITY

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ABSTRACT

In today's era of liberalization and globalization, banking sector in India has been undergoing a rapid change. Now, customers demand higher quality of service from banks, which if fulfilled, could result in significantly improved customer satisfaction levels. Therefore, nationalised banks are more interested in implementing modern technology facilitating and differentiating them in today's liberalised market of how services rendered by banks to meet or surpass customer expectations. Through the present study, efforts have been made to focused on the satisfaction level of customers towards various financial services and also non-financial services rendered by selected nationalised banks. Apart from this, efforts have been made to focused on the customer's level of expectations towards various services rendered by the selected nationalised banks. This study also throws a light on the various determinants of customer



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RESEARCH PAPERS

DESIGNING OF AN EMBEDDED SYSTEM FOR WIRELESS SENSOR NETWORK FOR HAZARDOUS GAS LEAKAGE CONTROL FOR INDUSTRIAL APPLICATION

By

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ABSTRACT

The environmental pollution is a serious problem, which is caused due to the leakage of toxic gasses at the time of transportation, storage, and during industrial processes of these gases. In industry, different types of hazardous gases are processed, stored, and transported through pipeline. The leakage of such pipeline occurs at any catastrophic accident, which may cause danger to the society as well as the environment. The gas pipeline may spread wide within the industry. Considering such facts, it is proposed to develop Wireless Sensor Network to detect, monitor, and control the leakage of gases. The Wireless Sensor Network (WSN) is a challenging technology in the field of Industrial sectors. Recently, it is used to monitor agricultural, industrial, environmental, and medical parameters. WSN is the network of systematically distributed sensor nodes to collaboratively collect information from physical world. The present research work is carried out to



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Smart Graphical User Interface for Wireless Sensor Network

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Abstract

The Wireless Sensor Network is widely utilized technology in different sectors for collection of process field data and to control same. In a wireless sensor network the data acquisition and presentation play an important role in the signal monitoring and control system. Considering such facts, The Smart Graphical User Interface (GUI) is designed to demonstrate collected data at the base station from distributed sensor nodes, in a user friendly format and preserve the data of collected by, the sensor network for industrial application. Moreover, the smart GUI is developed to indicate faulty nodes and localize the sensor nodes from base station. Furthermore, the GUI is designed to achieve the goals such as like energy efficiency and database security. The details regarding the design and implementation of the GUI are discussed in this paper.

Keywords

LabVIEW, GUI, Wireless Sensor Network, Industrial Parameter Monitoring.

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RESEARCH PAPERS

DESIGNING OF WIRELESS SENSOR NETWORK TO PROTECT AGRICULTURAL FARM FROM WILD ANIMALS

By

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Date Received: 30/04/2018

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ABSTRACT

Nowadays, the agricultural sector demands innovative technology to enhance the quality of agricultural products as well as to protect the same. New technologies such as Wireless Sensor Network are widely utilized in this sector for drip irrigation, soil parameter monitoring, green house control, etc. However, on a survey it is found that the agricultural land protection is one of the challenging tasks. Considering such fact it is proposed to design a wireless sensor network to protect agricultural land. The wireless sensor network is the most suitable technology to overcome traditional systems, save time of human being. The wireless network is designed to ensure real time patrolling at the border of agricultural farm and presented in this paper. For present research work, embedded technology based on sensor node have been designed by deploying advance microcontroller PIC 18F4550. The nodes are used to identify the movement of the wild animals crossing in to the border and monitor the activity occurred at border of agricultural land. Moreover, the sensor node is equipped with the IEEE 802.15.4 standard based RF module for wireless communication. The WSN collects

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Development of AVR Based Embedded System to Precise Monitor and Control the Humidity of Polyhouse

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ABSTRACT

For proper crop growth and hence yields, humidity is one of the most important parameter at polyhouse. On literature survey it is found that, an optimum Humidity range of 50% to 80% is necessary for most of the crop species for proper growth. Holistically it is also found that, for most of the crops humidity requirement at day time may differ from that of night time. Therefore, every crop should get sufficient humidity level as per its requirement. Hence, AVR ATmega32 based embedded system is developed to cater the precise controlled humidity environment in polyhouse. A smart Humidity sensor SY-HS-220 is interfaced with AVR ATmega32 microcontroller to measure the humidity of polyhouse. The humidity dependent analog signal at the output of sensor is digitized by implementing on chip ADC of AVR Microcontroller. The digital readout is ensured by interfacing the LCD module to the microcontroller. The fogger and fan are wired with microcontroller using optocouplers and TRIACs to maintain the humidity in required range. The firmware is developed in embedded C using Code Vision IDE. The system is calibrated and standardized to the Relative



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