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3.3.1 Number of research papers published per teacher in the Journals notified on UGC CARE list during the year 2023

Sr. No.	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number
1	Performance analysis of biofuel- ethanol blends in diesel engine and its validation with computational fluid dynamics	Prof. Yashraj Chopkar,	ASH	Springer Nature	2023	https://doi.org/10.1186/s42834-022-00151-w
2	Optical and Thermal proprties of rare earth doped K4Ca(po4)	Prof Sadaf Gauhar	ASH	LUMINESCENCE WILEY	2023	https://doi.org/10.1002/bio.4470
3	Optical Properties of RE (RE = Eu^{3+}, Dy^{3+}, Sm^{3+}, Ce^{3+}) – doped $BaSr_2(PO_4)_2$ phosphor.	Prof Sadaf Gauhar	ASH	Indian Journal of Physics	2023	https://doi.org/10.1007/s12648-022-02578-8
4	Review on Ovarian Cancer Detection Using Artificial Intelligence & Machine Learning	Dr.SushamaTelrandhe	ETC	JETIR February 2023, Volume 10, Issue 2 ,Pp 428-433	2023	ISSN-2349-5162
5	IOT BASED VEHICLE ACCIDENT PREVENTION AND DETECTION SYSTEM	Dr.SushamaTelrandhe	ETC	International Journal of Creative Research Thoughts (IJCRT), Volume.11, Issue 5, pp.a969-a975, May 2023	2023	ISSN:2320-2882

6	Iot Based Vehicle Accident Prevention and Detection	Dr.SushamaTelrandhe	ETC	International Journal of Emerging Technologies and Innovative Research , Vol.10, Issue 3, page no. ppb367-b372, March-2023	2023	ISSN:2349-5162
7	IoT-Based DC Motor Controlling and Monitoring	Prof. NehaChourasia	ETC	International Journal of Innovative Research in Technology, IJIRT , 9 Feb 2024	2023	ISSN: 2349-6002
8	IoT-Based DC Motor Controlling and Monitoring	Prof. NehaChourasia	ETC	International Journal of Innovative Research in Technology, IJIRT , 9 Feb 2023	2023	ISSN: 2349-6002
9	IoT-Based DC Motor Controlling and Monitoring	Prof. Sandeep Buradkar	ETC	International Journal of Innovative Research in Technology, IJIRT , 9 Feb 2023	2023	ISSN: 2349-6002
10	IoT-Based DC Motor Controlling and Monitoring	Prof. Kajal Dhawale	ETC	International Journal of Innovative Research in Technology, IJIRT , 9 Feb 2023	2023	ISSN: 2349-6002
	Automatic Floor Cleaning System	Prof. Soniya Milmile	ETC	Journal of Emerging Technologies and Innovative Research, JETIR ISSN-2349-5162, Volume 10, Issue 4, 22 April 2023	2023	ISSN-2349-5162
12	Automatic Floor Cleaning System	Prof. Deepak Deshpande	ETC	Journal of Emerging Technologies and Innovative Research, JETIR ISSN-2349-5162, Volume 10, Issue 4, 22 April 2023	2023	ISSN-2349-5162
13	Microcontroller-Based Portable Webserver	Prof. Deepak Deshpande	ETC	International Journal of Innovative Research in Technology, IJIRT , Volume Issue 8 Jan 2023	2023	ISSN: 2349-6002

14	Home Appliances Automation System Using Bluetooth and Voice Operated Technology	Prof. MinakshiDhage	ETC	Journal of Emerging Technologies and Innovative Research, JETIR ISSN-2349-5162, Volume 10, Issue 3, March 2023	2023	ISSN NO : 2349-5162
15	IoT Based DC Motor Controlling and Monitoring	Prof. Soniya Milmile	ETC	International Journal of Innovative Research in Technology, IJIRT , 9 Feb 2023	2023	ISSN: 2349-6002
16	Design of 3 Phase Z-Source Inverter for Solar Photovoltaic Application	Prof. Minakshi Dhage	ETC	Journal of Basic Science, JBS Volume 23, Issue 2, February 2023	2023	ISSN NO : 1006-8341
17	Design of 3 Phase Z-Source Inverter for Solar Photovoltaic Application	Prof. Diksha Khare	ETC	Journal of Basic Science, JBS Volume 23, Issue 2, February 2023	2023	ISSN NO : 1006-8341
18	Design of 3 Phase Z-Source Inverter for Solar Photovoltaic Application	Prof. Manish Agarwal	ETC	Journal of Basic Science, JBS Volume 23, Issue 2, February 2023	2023	ISSN NO : 1006-8341
19	Design of 3 Phase Z-Source Inverter for Solar Photovoltaic Application	Prof. Satish Ragit	ASh	Journal of Basic Science, JBS Volume 23, Issue 2, February 2023	2023	ISSN NO : 1006-8341
20	Design of 3 Phase Z-Source Inverter for Solar Photovoltaic Application	Dr.Hemant Hajare	ASH	Journal of Basic Science, JBS Volume 23, Issue 2, February 2023	2023	ISSN NO : 1006-8341
21	A Two-input z-source indirect matrix converter for grid connected hybrid renewable energy system	Prof. Diksha Khare	EE	IJAEMA, volume 15,isssue4,april 2023	2023	ISSN:0377-9254
22	Automatic solar street light	Prof. Swati Gajbhiye	EE	IJARIIE, volume-9,issue-1, 2023	2023	ISSN-2395-4396
23	Neutral network based MPPT controller with boost converter fuel cell based electrical vehicle	Prof. Diksha Khare	EE	IJPREMS, volume03, issue 05, may 2023	2023	ISSN : 2583-1062

24	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Swati Gajbhiye	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
25	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Manish Agarwal	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
26	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Yogesh Likhar	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
27	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Akshai Pilewan	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
28	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Diksha Khare	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
29	Design & analysis of range extension kit for Mk-80 Bomb	Prof.Minakshi Dhage	ETC	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
30	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Nayan Shambharkar	CSE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
	Design & analysis of range extension kit for Mk-80 Bomb	Prof. Harshal Ghatole	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
32	Design & analysis of range extension kit for Mk-80 Bomb	Prof.Rajendra Bhombe	EE	IJIRT, Volume 9, issue-8, January-2023 paper id- 158108	2023	ISSN: 2349-6002
33	Evaluation of Academic Performance Of Students Using Fuzzy Logic	Prof.Kalpana Malpe	CSE	TIJER - INTERNATIONAL RESEARCH JOURNAL www.tijer.org	2023	ISSN 2349-9249

34	Enrichment of Geoportal Interoperable Platform and Development of Thematic Applications for Land Use Management and Agricultural Land Use Planning	Mayuri Vivek Padhye	CSE	International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 10 Issue: 01 | Jan 2023	2023	e-ISSN: 2395-0056 p-ISSN: 2395-0072
35	Enrichment of Geoportal Interoperable Platform and Development of Thematic Applications for Land Use Management and Agricultural Land Use Planning	Vijaya Kamble	CSE	International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 10 Issue: 01 | Jan 2023	2023	e-ISSN: 2395-0056 p-ISSN: 2395-0072
36	LOW COST IOT BASED IRRIGATION STSTEM	Vijaya Kamble	CSE	International Research Journal of Modernization in Engineering Technology and Science	2023	e-ISSN: 2582-5208
37	LOW COST IOT BASED IRRIGATION STSTEM	Harshal Ghatole	EE	International Research Journal of Modernization in Engineering Technology and Science	2023	e-ISSN: 2582-5208
38	"Voice Controlled Home Automation System"	Prof. Shubhangi Ghadinkar	CSE	TIJER, International Research Journal	2023	ISSN: 2349-9249
40	Human Resources and sustainable Development	Dr.J. Joseph	MBA	A Journal for New Zealand Herpetology	2023	2230-5807

Performance analysis of biofuel–ethanol blends in diesel engine and its validation with computational fluid dynamics

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Abstract

The engine tests aimed to produce comparable data for fuel consumption, exhaust emissions, and thermal efficiency. The computational fluid dynamics (CFD) program FLUENT was used to simulate the combustion parameters of a direct injection diesel engine. In-cylinder turbulence is controlled using the RNG k-model. The model's conclusions are validated when the projected p-curve is compared to the observed p-curve. The thermal efficiency of the 50E50B blend (50% ethanol, 50% bio-fuel) is higher than the other blends as well as diesel. Diesel has lower brake thermal efficiency among the other fuel blends used. The 10E90B mix (10% ethanol, 90% biofuel) has a lower brake-specific fuel consumption (BSFC) than other blends but is slightly higher than diesel. The temperature of the exhaust gas rises for all mixtures as the brake power is increased. CO emissions from 50E50B are lower than diesel at low loads but slightly greater at heavy loads. According to the emission graphs, the 50E50B blend produces less HC than diesel. NOx emission rises with increasing load in the exhaust parameter for all mixes. A 50E50B biofuel–ethanol combination achieves the highest brake thermal efficiency, 33.59%. The BSFC for diesel is 0.254 kg/kW-hr at maximum load, while the BSFC for the 10E90B mix is 0.269 kg/kW-hr, higher than diesel. In comparison to diesel, BSFC has increased by 5.90%.

Keywords Biofuel–ethanol blends · Diesel engine · Performance analysis · Computational fluid dynamics

Nomenclature

CO_2	carbon dioxide	PM	particulate matter
NFT	nitrogen-fixing trees	GGF	gasoline gallon equivalency
		HC	hydrocarbon emission
		SCA	spray cone angle
		SVD	size volume distribution

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RESEARCH ARTICLE

LUMINESCENCE WILEY

The Journal of Biological and Chemical Luminescence

Optical and thermal properties of rare earth–doped K$_4$Ca(PO$_4$)$_2$ phosphor

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Abstract

The luminescent properties and energy transfer (ET) mechanism in the Ln^{3+} pair of the RE^{3+} (RE = Eu^{3+}, Ce^{3+}, Dy^{3+} and Sm^{3+}) doped K$_4$Ca(PO$_4$)$_2$ phosphor were successfully investigated using a conventional high-temperature solid-state reaction. In the near infrared (NIR) range, Ce^{3+}-doped K$_4$Ca(PO$_4$)$_2$ phosphor exhibited a UV–Vis. emission band, whereas K$_4$Ca(PO$_4$)$_2$:Dy^{3+} exhibited characteristic emission bands centred at 481 and 576 nm in the near-ultraviolet excitation range. The possibility of ET from Ce^{3+} to Dy^{3+} in K$_4$Ca(PO$_4$)$_2$ phosphor was confirmed by a significant increase in the photoluminescence intensity of the Dy^{3+} ion based on the spectral overlap of acceptor and donor ions. X-ray diffraction, Fourier-transform infrared and thermogravimetric analysis/differential thermal analysis TGA/DTA were carried out to study phase purity, presence of functional groups and amount of weight loss under different temperature regimes. Therefore, the RE^{3+}-doped K$_4$Ca(PO$_4$)$_2$ phosphor may be a stable phosphor host for light-emitting diode applications.

KEYWORDS

Fourier-transform infrared, phosphate, photoluminescence RE, thermogravimetric analysis/differential thermal analysis, X-ray diffraction

1 | INTRODUCTION

In the past few years, white light emitting diodes (WLED) have been considered 'green' full-solid-state lighting sources due to their promising features like high luminous efficiency, good colour rendering index (CRI), excellent stability and environmental friendliness, and therefore, they are widely used in lighting and display technologies.[1-5] Essentially, WLEDs are manufactured using two different approaches, with one of the most promising involving the combination of NUV (near-ultraviolet) chips coupled with RGB phosphors (red, green and blue-emitting phosphors) that provide an excellent CRI index and also have a better correlated colour temperature.[6] However, developing a pure red phosphor component is quite difficult and remains a challenge for researchers.[7-9] Tuneable emission in a single-host phosphor compound can also be achieved by co-doping different lanthanide ions. Of the different phosphor hosts, orthophosphates are more stable inorganic phosphor hosts and have received a lot of interest in luminescence studies and find potential scope in optoelectronics devices when doped with preferred rare-earth ions. YPO$_4$,[10] LaPO$_4$,[11,12] or LuPO$_4$,[13] Sr$_3$(PO$_4$)$_2$,[14] or M$_3$Ln(PO$_4$)$_3$ (M = Sr^{2+}, Ca^{2+}; Ln = Y^{3+}, La^{3+} and Gd^{3+})[15] are some well-known orthophosphate compounds. Doping divalent or trivalent lanthanide ions such as Mn^{2+}, Eu^{2+}, Cr^{3+}, Ce^{3+}, Tb^{3+}, Dy^{3+} and Eu^{3+} in orthophosphate compounds has thus been extensively researched to develop an energy-efficient inorganic phosphorus component. Of the different trivalent rare-earth ions, Dy^{3+} ions are considered as efficient activators due to their 4f9 electronic configuration, which shows two prominent emission bands in the blue and yellow spectral regions, which are the desirable wavelength range for the production of white light.[16-18] Doping Dy^{3+} activators with a suitable sensitiser can cause energy transfer (ET), which is important in tuning the emission colour of phosphors converted to WLEDs. Because the spin-forbidden

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ORIGINAL SCIENTIFIC RESEARCH

Optical properties of RE (RE = Eu^{3+}, Dy^{3+}, Sm^{3+}, Ce^{3+})-doped $BaSr_2(PO_4)_2$ phosphor

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Abstract: This article reported the photoluminescence properties of a rare-earth (RE; Eu^{3+}, Dy^{3+}, Sm^{3+}, Ce^{3+})-doped $BaSr_2(PO_4)_2$ phosphor. A series of rare-earth (RE; Eu^{3+}, Dy^{3+}, Sm^{3+}, Ce^{3+})-doped $BaSr_2(PO_4)_2$ has been synthesized by a wet chemical method. The SEM images indicated that the rare-earth-doped phosphate-based phosphor was well crystallized, with a homogeneous particle size distribution. Rare-earth (RE; Eu^{3+}, Dy^{3+}, Sm^{3+}, Ce^{3+})-doped $BaSr_2(PO_4)_2$ phosphor shows the characteristics optical spectra that measured under near UV and visible range. Here, PL emission spectra for Eu^{3+} is located at 590 and 613 nm; Dy^{3+} band centred at 480 and 574 nm, while Sm^{3+} located at 563, 601 and 642 nm, respectively, and Ce^{3+} also showed at 329 nm and 343 nm. All these bands were assigned due to tod-f and f-f transitions of RE ions. So, based on the properties of these reported phosphors, they may be a promising host for display applications.

Keywords: XRD; PL; Wet chemical; Application

1. Introduction

In the area of smart technologies, luminescence, sometimes known as "cold light", refers to light emitted by various energy sources at low temperatures. Among the most important issues in the twenty-first century are those associated with energy conservation research. Inorganic phosphors have received a lot of interest in recent years because of their wide range of applications in lighting, electronic display, solid-state lasers, biological labelling, and so on [1–5]. Due to their material stability and good low voltage and high conversion efficiency, including excellent colour rendering index, high colour tolerance, high brightness, long product life, compactness, energy conservation, and environmental friendliness, w-LEDs are a good potential novel and attractive alternative light source to incandescent bulbs and fluorescent lamps. As a result, w-LEDs are viewed as novel solid-state light sources that can replace traditional light sources [6–8]. Phosphors are materials that show the luminescence

phenomena. The excited electron in phosphorus releases energy as light, making it luminous. The absorption of energy from an external source, such as a photon, causes electron excitation [9–12]. In general, white light can be produced by the addition of RGB and BYR colours. One of the approaches that has been used in the development of white light is the combination of a blue Ga(In)N LED chip coupled with a yellow-emitting $Y_3Al_5O_{12}:Ce^{3+}$ (YAG:Ce) phosphor and covers three main red, green, and blue-emitting (RGB LED chips) phosphors coupled with a near-UV (NUV) chip. Furthermore, throughout the first technique, the lack of red emission results in cool-white light emission, resulting in high efficiency and low cost w-LEDs that are not suited for interior lighting, while in the second way, energy re-absorption between phosphors results in decreased luminescence efficiency. To address the aforementioned problem, w-LEDs made from near-ultraviolet (NUV) LEDs with trichromatic phosphors had been extensively studied. As a result, high-efficiency novel phosphors activated by near-ultraviolet light in warm white light are urgently needed. Many $ABPO_4$ systems, in which A is a monovalent cation (Li^+, Na^+, K^+, Rb^+, Cs^+) and B is a divalent cation (Mg^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}), had been

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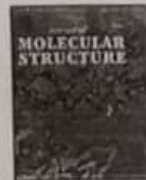
High color purity and color tunability in Sm^{3+}/ Eu^{3+} activated/ co-activated $Sr_6Ca_4(PO_4)_6F_2$ phosphor for WLED and display devices application

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ABSTRACT

Fluoride based phosphors are proving their worth in the field of luminescence especially in display devices and WLED application. In the present investigation a series of Sm^{3+}, Eu^{3+} activated/ co-activated $Sr_6Ca_4(PO_4)F_2$ phosphors has been prepared by simple combustion method using citric acid as a fuel. Crystalline nature of the sample is confirmed by XRD characterization technique. Morphological and elemental analysis of prepared phosphor has been done by scanning electron microscopy (SEM) and energy dispersive x-ray spectroscopy (EDS) analysis. Vibrational features of prepared phosphor have been confirmed by fourier transform infrared spectroscopy (FTIR) analysis. Moreover, photoluminescence properties of prepared phosphor shows the sample showing color tunability from orange to red with co-doping of Sm^{3+}/Eu^{3+} ions. Color purity of prepared phosphor is observed 99.15%. These all results confirms the Sm^{3+}, Eu^{3+} activated/ co-activated $Sr_6Ca_4(PO_4)_6F_2$ phosphors are the potential candidate for the WLED and display devices applications.

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1. Introduction

As of late, white light emitting diodes (WLEDs) definitely stand out as the cutting edge lighting technology for solid state lighting applications contrasted with common incandescent and fluorescent lights because of their benefits like low power utilization, high brightness, dependability, longer lifetime, compactness and ecological agreeable nature [1–5]. These days, WLEDs are made by covering YAG:Ce yellow phosphors on GaN blue LED chip. In any case, these WLEDs show disadvantages like correlated color temperature (CCT≈7750 K) and poor color-rendering index (Ra<80) because of the absence of red emission which limits their adaptability in numerous applications. Thus, numerous scientists gave a lot of consideration on single component white light emitting phosphors to fabricate efficient white light sources over the ordinary WLEDs a direct result of their advantages [6,7]. Photochromism is a revocable color change when ultraviolet and visible light are alternately used. Photochromic materials have been of great interest due to their wide range of applications, including photo switches, sensors, 3D homographic memories, and smart windows [8–11]. Photochromic devices made with solid-state photochromic technology have many advantages over solutions or thin-film, like larger stor-

age capacity and larger size suitable for reflective readings in ambient light and large-area displays. Consequently, their high-density optical data storage devices has been extensively investigated, in which information "write" and "erase" can be detected by measuring the luminescence intensity, electronic conductivity, electrochemical reaction or magnetic interaction after light illumination have been widely studied [12,13].

Color tuning properties of Sm^{3+} to Eu^{3+} activated phosphors have been investigated by few researchers in past few years. Liu et al. [14] reported the $Sr_9La_2W_4O_{24}$:0.15 Sm^{3+}, y Eu^{3+} orange-red phosphors with double perovskite tungsten structure are synthesized by high-temperature solid-phase reaction method. Sm-Eu co-doping simultaneously exhibits orange-red light emissions at 602 and 617 nm, which also demonstrates the existence of energy transfer from Sm^{3+} to Eu^{3+}. Again Huang et al. [15] reported the Sm^{3+}/Eu^{3+} co-doped $Ba_3Bi(PO_4)_3$ (BBP) phosphors were successfully synthesized through a high temperature solid-state reaction. $Y_2Zr_2O_7$:Sm^{3+}, Eu^{3+} phosphors were investigated for WLED applications as well as display devices reported by Bansod et al. [16]. As all these phosphors were investigated via solid state reaction method and the concentration of rare earth ions used in the synthesis is very high. Moreover, $Sr_6Ca_4(PO_4)F_2$ phosphor co-activated with Sm^{3+}, Eu^{3+} ions are not reported till date.

In the present work Sm^{3+}/Eu^{3+} co-activated $Sr_6Ca_4(PO_4)_6F_2$ phosphors has been prepared by simple combustion method us-

Review on Ovarian Cancer Detection Using Artificial Intelligence & Machine Learning.

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Abstract: Science and technology have changed almost everything. There is nothing left that we can say that is unachievable by making use of science technology. The imaging process is showed in this paper is the reviewed work that describes ovarian cancer. Right now ovarian cancer is very much spread and become the common disease that is used to be seen in most people women who needed early diagnosis.

Artificial intelligence is a different kind of technical science that can pretend, lengthen and develop human intelligence by developing respective theories, methods and application systems.

In the past five years, the utilization of AI based tools in medical research is considered to be the high lightened topic in modern science and technology. AI plays a great role in Gynecological malignant tumors. This includes medical image recognition, auxiliary diagnosis, drug research and development, formulation of treatment schemes, and other fields.

The main aim of this paper is to give essential knowledge of the AI implementation in ovarian cancer detection. AI is believed to improve diagnostic efficiency, reduce the burden on the doctor, and then improve the effect of treatment and prognosis.

Ovarian cancer is often describe as most common type of gynecological cancers. Correct classification of ovarian carcinoma is an important element in various diagnoses. Computer-aided diagnosis (CAD) can provide the pathologist with useful guidance in making the correct diagnosis. The presented paper gives idea about various types of ovarian cancer and tools used to diagnose ovarian cancer.

The proposed method uses ovarian cancer detection with machine learning algorithms.

Keywords: Artificial Intelligence, Gynecological Malignant Tumor, Diagnosis, Treatment, Prognosis

Introduction

Ovarian Cancer may affect body in various ways. It may also affect all the body parts that are closest to the ovaries, most likely the uterus & ovaries fallopian tube.

Artificial intelligence is having considerable ability to make desired changes in the healthcare system by offering automatic tools implementation [1]. As the world's population is increasing, the pressure on the health care system will also increase and so far the workload will also increase. New technologies which are most implemented by using artificial intelligence have the potential to disrupt existing practices, primarily by enhancing rather than replacing the skills of professionals [4,5].

Artificial intelligence may be considered as the ability of systems to "copy" human intelligence by executing code using number of algorithms. Machine learning is also a big portion of Artificial intelligence, where the statistical methods has been used to develop and implement algorithms. Also, Deep learning, is also considered as a subset of Machine learning depending on a neural network layer that allows computers to train specific tasks. Although AI has generated eagerness in life sciences and healthcare, therefore, key challenges remain related to data availability, quality, and modeling. Conveying these issues, as well as other limitations, will be critical to reaping the benefits of these technologies to advance health. Important applications of AI will be in the area of cancer biomarker discovery. Artificial intelligence is used to be defined as the ability of systems to "copy" human intelligence by running code that includes in large number of algorithms. Machine learning is considered to be large portion of AI, in which statistical methods are used for developing and improving algorithms. Whereas, Deep learning, is a major part of ML based on a neural network layer which allows computer systems to train specific tasks.

Ovarian cancer is considered to be the most common and dangerous gynecological cancer [6]. Primary epithelial ovarian carcinoma can be divided into serous, endometriosis, mucinous and clear cell subtypes [7]. The four subtypes of cytological images are often difficult to distinguish accurately by the pathologist's eye and mind, especially when a large number of images need to be analyzed and diagnosed, and errors can easily occur. To improve diagnostic accuracy and reduce the burden on pathologists, we tried to use computer technology in pathological diagnosis. Computer-aided diagnosis (CAD) makes differential diagnosis more accurate and less dependent on the skills of the

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IOT BASED VEHICAL ACCIDENT PREVENTION AND DETECTION SYSTEM

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Abstract : In the developing countries there are many dangerous roads where accidents and causes very lethal effects now a day. If we talk about dangerous roads in the world then all of them are mountain roads, T roads, narrow roads. Some mountain roads are narrow, having many curves and very tight, this cause of the most hazards. Vehicle accident prevention system can be crucial step in accident safety on hilly and mountain roads. We have recognized our past, thousands of accidents and death on mountain road, some even fall of the cliff and after that can not view even be traced. Such accidents not only destroy human life butlso major loss financially to the individual and government also. To avoid such problems in curve roads mountain areas, we have proposed this vehicle accident prevention system. The main objective of this model is to diminish the accident in hairpin bends an U turnings.Sometimes it observes that the vehicle driver unable to see the vehicle reaching form opposite side due to lack of vision and the serious accidents are happened. Though this type of project ideas can help to decrease these type of peoblems.

IndexTerms - Arduino , Cables & Connector, IR Sensors, Power Supply

INTRODUCTION

According to ASIRT (Association for Safe International Road Travel), approximately 1.3 million people die each year from road accidents and 20 to 50 million are injured on the roads. Nearly 2% of each country's annual GDP (Gross Domestic Product) is dedicated to road accidents. Road accidents are the ninth leading cause of death in the world and almost 2.2% of the world's deaths are due to road accidents, and other organizations, such as the World Health Organization, have reported similar statistics, too.

On the other hand, road traffic is one of the biggest problems that has a negative impact on the daily lives of people around the world, and puts pressure on people in different ways. One of the biggest causes of heavy traffic is road accidents . For reducing accidents, the reasons behind it must be understood. According to the records it is found that many accidents take place due to rash driving caused by the alcoholic state of drunken drivers. The second type of accident occurs due to the fatigue condition of the driver while driving a long distance at a stretch or driving at night without taking proper sleep. Car accidents are major concerns across the globe. It causes large number of fatalities and also responsible for lots of money waste directly or indirectly. Therefore, studies on active safety systems and advanced driver assistance systems (ADASs) have been actively taken up with the aim of ensuring safety, including vehicle control for collision avoidance and mitigation; such features are in contrast with those of conventional passive systems, which gives safety through simple warnings.

According to million death study (MDS) about 2.3 million people die in India per year. In that 13% is because of road accidents.

Certificate of Publication

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IOT BASED VEHICAL ACCIDENT PREVENTION AND DETECTION SYSTEM

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Abstract : In the developing countries there are many dangerous roads where accidents and causes very lethal effects now a day. If we talk about dangerous roads in the world then all of them are mountain roads, T roads, narrow roads. Some mountain roads are narrow, having many curves and very tight, this cause of the most hazards. Vehicle accident prevention system can be crucial step in accident safety on hilly and mountain roads. We have recognized our past, thousands of accidents and death on mountain road, some even fall of the cliff and after that can not view even be traced. Such accidents not only destroy human life butlso major loss financially to the individual and government also. To avoid such problems in curve roads mountain areas, we have proposed this vehicle accident prevention system. The main objective of this model is to diminish the accident in hairpin bends an U turnings.Sometimes it observes that the vehicle driver unable to see the vehicle reaching form opposite side due to lack of vision and the serious accidents are happened. Though this type of project ideas can help to decrease these type of peoblems.

IndexTerms - Arduino , Cables & Connector, IR Sensors, Power Supply

INTRODUCTION

According to ASIRT (Association for Safe International Road Travel), approximately 1.3 million people die each year from road accidents and 20 to 50 million are injured on the roads. Nearly 2% of each country's annual GDP (Gross Domestic Product) is dedicated to road accidents. Road accidents are the ninth leading cause of death in the world and almost 2.2% of the world's deaths are due to road accidents, and other organizations, such as the World Health Organization, have reported similar statistics, too.

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According to million death study (MDS) about 2.3 million people die in India per year. In that 137K is because of road accidents.

That about 377 peoples per day. In that 3.7% because of unexpected obstacles.There are many risky roads and bends in the world like mountain roads, narrow curve roads and hair pin bends for ex. Kolli hill roads, Gata Loops,3-Level Zig-zag roads in Sikkim, LehManaliHighway.According to ASIRT (Association for Safe International Road Travel), approximately 1.3 million people die each year from road accidents and 20 to 50 million are injured on the roads. Nearly 2% of each country's annual GDP (Gross Domestic Product) is dedicated to road accidents. Road accidents are the ninth leading cause of death in the world and almost 2.2% of the world's

IMPLEMENTATION PAPER ON IOT BASED VEHICLE ACCIDENT PREVENTION AND DETECTION SYSTEM

1 SUSHMA TELRANDHE ,2 ADIBA SADAF, 3 RAFAT TASNEEM, 4 SHIFFA TAHA,

5 NILIMA JARAD

GURU NANAK INSTITUTE OF ENGINEERING AND TECHNOLGY NAGPUR

INTRODUCTION

- The main purpose behind the implementation of the accident prevention is to minimize the roads accidents which causes the loss of valuable human life another valuable goods.

- Accident prevention and detection system (APDS) save lives by reducing the time require for emergency responders to arrive.

- We are developing one IoT application which will help to reduces percentage of accident.

- According to the statistics, reducing accident delay time by even 1 minute can save 6 % of lives.

BLOCK DIAGRAM

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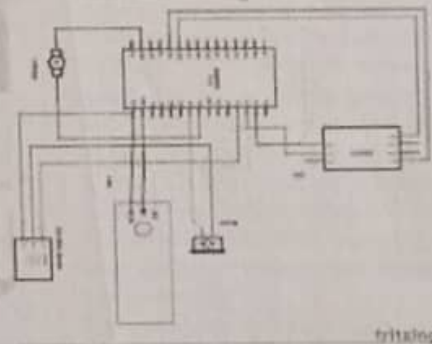
CIRCUIT DIAGRAM
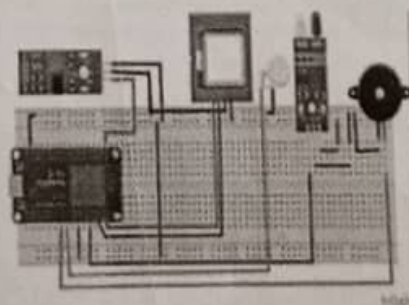
WORKING

1.For accident prevention, we have incorporated an IR proximity sensor that detects drowsiness in the driver. Whenever the sensor

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IOT based DC Motor Controlling & Monitoring System

Kajal Dhawale[1], Neha Chourasia[2], Sandip Buradkar[3] Soniya Milmile[4]

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Abstract:- DC motor plays a very important role in different industrial applications. This project deals with a system that protects the DC motor as well as helps in controlling and monitoring various parameters like temperature, speed, etc with the help Internet of Things (IoT). This project makes use of NodeMCU-ESP8266 Wi-Fi modules, a DC motor, temperature sensor (NTC thermistor), relay, etc. We are using the IoT for the process monitoring and control which allows us to control various operations from a very long distance and web server to store real time values. Here the whole system is going to be controlled by using a user interface (pc or smartphone). The signals can be transmitted and received by using the IoT cloud interface with the help of the Wi-Fi module ESP8266 (NodeMCU). This system is design to control DC motor without shuting off whole system i.e. without break in work. It helps to monitor the system and if temperature goes high, it will reduces its temperature by rotating a DC motor in anticlock wise direction and without causing any damage to the system.

Keywords- DC motor, IoT, Node MCU wi-fi, Sensors, etc

I. INTRODUCTION

IoT based embedded systems are used in various fields to grown up with the latest technology. So we have decided to implement this system for protecting, controling and monitoring of DC motors in the industry. In various industries numbers of DC motors are used for various applications so maintenance of those motors were a difficult task for the operators in the industry. But by the use of IoT based system any operator can check any motor's present status from the control room. He can record real time readings of various parameters like voltage, current and temperature by using IoT based system on a single computer screen. Also if he find any abnormal condition in any motor of the plant he can stop the motor from the control room by the use of IoT based system.

II. LITERATURE SURVEY

1] In their paper, Tan, Lee and Soh (2002) proposed the development of an Internet-based system to allow monitoring of important process variables from a distributed control system (DCS). This paper proposes hardware and software design considerations which enable the user to access the process variables on the DCS, remotely and effectively.

2] Potamitis, Georgila, Fakotakis, and Kokkinakis, G. (2003) suggested the use of speech to interact remotely with the home appliances to perform a particular action on behalf of the user. The approach is inclined for people with disability to perform real-life operations at home by directing appliances through speech. Voice separation strategy is selected to take appropriate decision by speech recognition.

3] Prof. Era Johri Dept. Of Information And Technology K.J.Somaiya College Of Engineering VIDYAVIHAR, MUMBAI "Remote Controlled Home Automation Using Android Application via WiFi Connectivity".

4] Prakash, Chetna, and Sanjeev Thakur. "Smart Shut-Down and Recovery Mechanism for Industrial Machines Using Internet of Things." 2018 8th International Conference on Cloud Computing, Data Science & Engineering (Confluence). IEEE, for predictive maintenance of motors in the industries, monitoring needs to be performed continuously so as to determine any degradation in performance or failure of the motors. The recovery mechanism provides a back-up machine which is started when the main motor is shut down. This helps in decreasing the loss that would occur during the downtime. This increases the reliability.

6] Şen, Mehmet, and Basri Kul. "IoT-based wireless induction motor monitoring." Scientific Conference Electronics (ET), 2017 XXVI International. IEEE, 2017. In this way, the production process is not impeded and the required maintenance or replacement

Automatic Floor Cleaning System

Prof. Deepak Deshpande[1], Prof. Soniya Milmile[2], Bhavika Tandekar[3], Darshana Vaidhya[4], Vaibhav Giradkar[5], Pooja Sayyam[6]

[1, 2, 3,4,5,6] *Department of Electronics & Telecommunication Engineering GNIET, RTMNU, Nagpur*

Abstract— Robots have become an integral part of today's Life and due to their excessive use in house, hotels, offices etc. Cleaning is an important for healthy living which is being neglected due to lack of time and busy lifestyle. By taking this in consideration we are proposing an Automatic Floor Cleaning System, Who can perform all the cleaning activities without any help from human. Even though there are various cleaner robots that are available today but their high costs and low versatility are the major reasons. Therefore the aim of this project is to design a cost efficient Automatic Floor Cleaning System which also gives easy control, time saving, Reliable System.

Keywords— Robot, Cleaning, Vacuum, Dry, Wet, Floor mapping, Lifestyle.

I. INTRODUCTION

Robot is an intelligent device having its own brain fed with computer logic so that it can do the work according to the algorithm designed. Autonomous movement of vehicle is guided by the logic controller designed. A Robot plays an important role in each every field of life. It is used in industries, in households and in institutes. The robots are just becoming as intelligent as human now days. Mostly an average human uses 2-3 robots per day in his day to day life.

Even though there is considerable work done in this application of robotics, none of it concerns with the cleaning of both dry and wet floors by respective detection. The conventional vacuum cleaner consists of large mechanical and electrical parts which are more costly and consume more power whereas the autonomous cleaner robots consists of low power consumer electronics and mechanical parts and it can operate during power outage period and does not need any human guidance. Robotic cleaners are basically distinguished on their cleaning expertise like floor mapping, dry vacuum cleaning etc. The motto of this project is to evaluate cost efficient, light weight, less noisy and low maintenance robotic system. Simultaneously having the facility of automatic maintenance and versatile robot that can perform floor mapping, dry vacuum as well as wet cleaning. It operates in an autonomous mode along with some additional features like scheduling for a specific time and dirt container with auto dumping mechanism. This robot is basically designed for the handicapped people having mobility issues to clean the house without any external help. In addition to it, for commercial purpose it will save the time and enhance the lifestyle of individual, avoidance of any obstacles and capable of finding its way around after fall from a height. A couple of spinning brushes are attached to the underneath of the cleaning machine to accumulate dirt, debris during the move along the way. Robot can clean along edges and into other hardtop-reach places. They are guided by certain algorithms for path planning and navigation, accordingly robot cleans the surface. Sensors present in it are used for obstacle detection. The robot's bumper prevents it from bumping into walls and furniture by reversing or changing path accordingly.

The robot will remember its path to docking station as it starts mapping area and path of motion right from when it unlocks from the station. When the battery charge is below a certain percentage, the robot shall start finding its way back to the docking station and get charged before resuming cleaning

II. LITERATURE REVIEW

Traditionally floor is cleaned with the help of dry mop or wet mop using the hand as a potential tool. They have to scrub hard on the surface [8]. The cleaning includes cleaning of various surfaces basically cement floors, highly polished wooden or marble floors. Among these floors the rough surface floor such as cement floor, mostly present in semi urban areas are covered with so much dust. From early human civilization human is increasingly dependent on the machines [1] . Human is trying to reduce the workload upon himself. By the help of machines also we can get huge efficiency because there is no chance of human error there [3]. Now -a -days from 30 years intelligence and robotics growing with a vast pace. Every human is using 2-3 robot at least per day. If we look at past 30 years we will see robotics from large structure going to small and smaller in Nano range. Very complicated sensors have been designed to help the robot in various works. One of the best examples is the mobile phone. If we look at the floor cleaning system we can see Robot is dominating the market with its 90 sq. cm robot

HOME APPLIANCES AUTOMATION SYSTEM USING BLUETOOTH AND VOICE OPERATED TECHNOLOGY

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Abstract— Now-a-days we are expected to achieve a lot more in a limited amount of time. Thus, our project aims to help by using Home Automation System which can be controlled via human voice. We will be using android software for the voice recognition. The software will recognize the voice command given at the microphoneand will generate according data.

Keywords— Liquid Crystal Display (LCD), Operating System (OS), User Interface (UI), Personal Computer (PC), Gesture Human Machine Interface (GHMI), Electro-Oculography Signal (EOG)

I. INTRODUCTION

This project is designed to control home appliances using a voice-controlled Android application. The concept of controlling home appliances using human voice is an interesting. A Bluetooth device is interfaced to the control unit for sensing signals transmitted by the Android application. This data is conveyed to the control unit which switches on loads ON/OFF as desired. An 8051 series microcontroller 89s51 is used in this project as a controlling device. Remote operation is achieved by any smart-phone or Tablet with Android OS, upon an App voice operation. The transmitting end uses an Android application for the voice commands that are transmitted to digital bits. At the receiver end, these commands are used for controlling the home appliances on and off. At the receiving end, the appliances are driven by Relay that are interfaced to the microcontroller. Serial communication data sent from the Android application is received by a Bluetooth receiver interfaced to the microcontroller. The program on the microcontroller refers to theserial data to generate respective output based on the input data to operate the Relay.

This project has integration of Android mobile technology and embedded system. Android mobile user has to install an application on his mobile handset to control the devices. Then

he/she can give command using the voice on that application. Forthis you have to turn on the Bluetooth on mobile, so the main wireless controlling technique used in this project is Bluetooth technology. Bluetooth receiver will be connected to the project. This Bluetooth device is connected to the circuit which has a decoder. It sends out a code for respective command sent by user. Then the respective device connected to the circuit will be turnedon or off depending on the command given. For example: Turn on motor, Turn off motor. Turn on buzzer etc. Such that by giving commands from mobile you can control home appliances.

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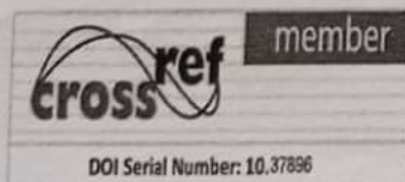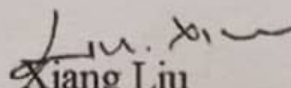
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Design of Three Phase Z-Source Inverter for Solar Photovoltaic Application

Author by

Minakshi Dhage

From

GNIET Nagpur, India.

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Design of Three Phase Z-Source Inverter for Solar Photovoltaic Application

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Abstract— This paper presents the design structure of three phase z-source inverter (ZSI) for solar photovoltaic (PV) application. The impedance source inverter is special form of inverter that provides the voltage boost capability. Conventional inverters have various limitations. The defects of conventional inverters are conquer in the z-source inverter. The impedance network is injected between the input DC source and inverter six switches. This middle stage offers the advantage of boosting the DC input voltage which is highly attractive solution for non-conventional energy interface such as Photovoltaic system.

Index Terms— Voltage source inverter (VSI), current source inverter (CSI), Z-source inverter (ZSI), photovoltaic (PV), pulse width modulation (PWM).

I.INTRODUCTION

The photovoltaic technology is more popular due to their low maintenance, pollution free and clean source of energy. This technology gives the source of consistent DC power generation. Photovoltaic cell made of semiconductor materials, such as silicon. The characteristic of PV cell is feasible to play a vital role in power generation. In modern era, there are many environmental problems caused by the conventional power generation. These shortcomings overcome by the renewable energy resources. These solar photovoltaic technologies are used in several system such as battery charging, satellite power scheme, etc. [1], [2].

The power inverters can be categorized as a voltage source inverter (VSI) and current source inverter (CSI). A VSI has a dc voltage source at its input terminal and CSI has a dc current source at its input terminal. Figure 2 and 3 shows the conventional VSI and CSI. In traditional inverter topologies, the two switches of equivalent leg cannot be turn on simultaneously, otherwise the dc source will be short circuit which will destroy the inverter. The ZSI exploits the shoot through states to improve the dc voltage by turning on both the superior and inferior switches of a same leg. Power electronics inverter for solar energy utilization would require
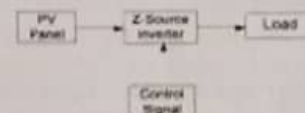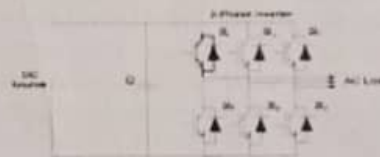

Fig. 1. System configuration.
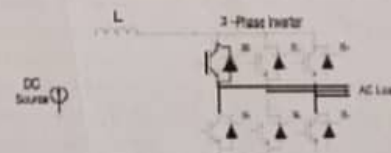

Fig. 2. V-source inverter.

Fig. 3. I-source inverter

both buck and boost capability. Therefore, ZSI can buck or boost voltage. Thus, ZSI provides low cost, reliable, highly Proficient single stage configuration designed for buck and boost power conversion [3], [7].

II. INVERTER COMPARISON (VSI/CSI AND ZSI)

The traditional inverters operate in either boost mode or buck mode not in buck-boost mode. The two switches of same leg cannot conduct at the similar time. Hence a deadband is provided between the turning on and turning off of the complimentary power switches of the same leg. This dead band causes distortion in the output current. The limitations of VSI or CSI can be eliminated by adding a DC-DC boos

Microcontroller Based Portable Webserver

Prof.Deepak Deshpande[1], Mr. Sachin S. Rindhe[2], Mr. Vijay Thokal[3], Mrs. Ashwini S Rindhe[4]

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[2]Principal Program Manager, MathWorks India Private Limited, Bangalore, India

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Abstract- : In this paper, study is carried out to explore use a microcontroller to develop portable web server. This portable webserver can be used for webpage hosting over intranet and also can be used for remote data monitoring. Microcontroller used to make cost effective, maintainable and portable solution. The innovation is in the technology to support webserver application by microcontroller.

Webpages that need to brows are stored in memory of microcontroller and dedicated IP address is assigned to each device. To access webpages which are stored in memory of microcontroller, open internet explorer (IE) and type IP address of devices. Home page, which is stored in the device, will be open from where user can access all webpages and this device act as webserver.

Keywords- Microcontroller, Webserver, portable.

I.INTRODUCTION

The main objective is to design "Microcontroller based Portable webserver" which can be used in multiple application and for remote data monitoring on web pages [1] The term webserver, can refer to either the hardware (the computer) or the software (the computer application) that helps to deliver web content that can be accessed through the Internet.

The most common use of web servers is to host websites, but there are other uses such as gaming, data storage, running enterprise applications, handling email, FTP, or other web uses. The primary function of a web server is to store, process and deliver web pages to clients. The communication between client and server takes place using the Hypertext Transfer Protocol (HTTP). Pages delivered are most frequently HTML documents, which may include images, style sheets and scripts in addition to text content.

A user agent, commonly a web browser or web crawler, initiates communication by making a request for a specific resource using HTTP and the server responds with the content of that resource or an error message if unable to do so. The resource is typically a real file on the server's secondary storage, but this is not necessarily the case and depends on how the web server is implemented. While the primary function is to serve content, a full implementation of HTTP also includes ways of receiving content from clients. This feature is used for submitting web forms, including uploading of files.

Presently website hosing needs big servers and have regular maintenance and not portable.

For data communication in industries, many communication protocols are used in industries such as RS485, DNP3, Serial, CAN, LIN which have specified wiring requirement and need initial installation cost and maintenance cost.

Proposed microcontroller based portable webserver in which web pages stored in microcontroller and can be hosted to form portable webserver. We have two method of storing web pages in microcontroller memory, first is store web pages in flash file system and second store web pages in hex array format in code. In order to make a webserver in your local network through the DSL router, internal IP address need to enter in bower.

Microcontroller based webserver can also be used for remote data monitoring purpose. Process data or parameter can be monitored on web pages. Microcontroller will read data from sensor and will process raw data and final data will be sent to HTTP server and HTTP sever will send data to webpages over TCP protocol, by microcontroller. As HTTP server are simplify protocol specific setting no additional wiring needed like CAN, LIN, Serial thus webserver can be used to monitor remote data.

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Automatic Floor Cleaning System

Prof. Deepak Deshpande[1], Prof. Soniya Milmile[2], Bhavika Tandekar[3], Darshana Vaidhya[4], Vaibhav Giradkar[5], Pooja Sayyam[6]

[1,2,3,4,5,6] *Department of Electronics & Telecommunication Engineering GNIET, RTMNU, Nagpur*

Abstract— Robots have become an integral part of today's Life and due to their excessive use in house, hotels, offices etc. Cleaning is an important for healthy living which is being neglected due to lack of time and busy lifestyle. By taking this in consideration we are proposing an Automatic Floor Cleaning System, Who can perform all the cleaning activities without any help from human. Even though there are various cleaner robots that are available today but their high costs and low versatility are the major reasons. Therefore the aim of this project is to design a cost efficient Automatic Floor Cleaning System which also gives easy control, time saving, Reliable System.

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The robot will remember its path to docking station as it starts mapping area and path of motion right from when it unlocks from the station. When the battery charge is below a certain percentage, the robot shall start finding its way back to the docking station and get charged before resuming cleaning

II. LITERATURE REVIEW

Traditionally floor is cleaned with the help of dry mop or wet mop using the hand as a potential tool. They have to scrub hard on the surface [8]. The cleaning includes cleaning of various surfaces basically cement floors, highly polished wooden or marble floors. Among these floors the rough surface floor such as cement floor, mostly present in semi urban areas are covered with so much dust. From early human civilization human is increasingly dependent on the machines [1]. Human is trying to reduce the workload upon himself. By the help of machines also we can get huge efficiency because there is no chance of human error there [3]. Now -a -days from 30 years intelligence and robotics growing with a vast pace. Every human is using 2-3 robot at least per day. If we look at past 30 years we will see robotics from large structure going to small and smaller in Nano range. Very complicated sensors have been designed to help the robot in various works. One of the best examples is the mobile phone. If we look at the floor cleaning system we can see Robot is dominating the market with its 90 sq. cm robot

Design of Three Phase Z-Source Inverter for Solar Photovoltaic Application

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Abstract— This paper presents the design structure of three phase z-source inverter (ZSI) for solar photovoltaic (PV) application. The impedance source inverter is special form of inverter that provides the voltage boost capability. Conventional inverters have various limitations. The defects of conventional inverters are conquer in the z-source inverter. The impedance network is injected between the input DC source and inverter six switches. This middle stage offers the advantage of boosting the DC input voltage which is highly attractive solution for non-conventional energy interface such as Photovoltaic system.

Index Terms— Voltage source inverter (VSI), current source inverter (CSI), Z-source inverter (ZSI), photovoltaic (PV), pulse width modulation (PWM).

I.INTRODUCTION

The photovoltaic technology is more popular due to their low maintenance, pollution free and clean source of energy. This technology gives the source of consistent DC power generation. Photovoltaic cell made of semiconductor materials, such as silicon. The characteristic of PV cell is feasible to play a vital role in power generation. In modern era, there are many environmental problems caused by the conventional power generation. These shortcomings overcome by the renewable energy resources. These solar photovoltaic technologies are used in several system such as battery charging, satellite power scheme, etc. [1], [2].

The power inverters can be categorized as a voltage source inverter (VSI) and current source inverter (CSI). A VSI has a dc voltage source at its input terminal and CSI has a dc current source at its input terminal. Figure 2 and 3 shows the conventional VSI and CSI. In traditional inverter topologies, the two switches of equivalent leg cannot be turn on simultaneously, otherwise the dc source will be short circuit which will destroy the inverter. The ZSI exploits the shoot through states to improve the dc voltage by turning on both the superior and inferior switches of a same leg. Power electronics inverter for solar energy utilization would require

Fig. 1. System configuration.

Fig. 2. V source inverter.

Fig. 3. I source inverter.

both buck and boost capability. Therefore, ZSI can buck or boost voltage. Thus, ZSI provides low cost, reliable, highly Proficient single stage configuration designed for buck and boost power conversion [3], [7].

II. INVERTER COMPARISON (VSI/CSI AND ZSI)

The traditional inverters operate in either boost mode or buck mode not in buck-boost mode. The two switches of same leg cannot conduct at the similar time. Hence a deadband is provided between the turning on and turning off of the complementary power switches of the same leg. This dead band causes distortion in the output current. The limitations of VSI or CSI can be eliminated by adding a DC-DC boos
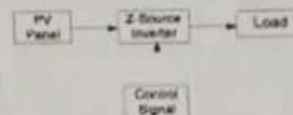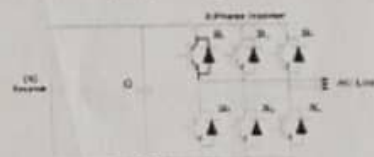
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AUTOMATIC SOLAR STREET LIGHT

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Abstract

The demand of energy has increased in the world now. So, to fulfil the demands of energy more and more fossil fuels are used, as a result fossil fuels will extinguish in future if they are used at such a rate. To replace the loss of fossil fuels we can use renewable energy as they are freely available and adequate. Today, LED (light emitting diode) lamps have replaced the HID (high intensity discharge) lamps that were used in urban street lights. Solar street lights work on the principle of photovoltaic cell or solar cell. In short, this paper is based on the idea of maintaining the maximum utilization and minimum loss of available energy.

Keywords— Demand Energy, Fossil Fuels, LED

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1. Introduction

Solar energy is the radiant energy emitted by sun. Solar energy can be converted into electricity in two ways:
1. Using photovoltaic, or
2. Indirectly using concentrated solar power.

a. Objective

1. To replace the growing energy demand by using renewable energy source as solar.
2. To light up the areas where there are many power cuts.
3. Solar lights use low power consumption.
4. Solar energy can be used for long term.
5. Solar energy is reliable in nature.
6. Solar energy requires low maintenance.

2. Components if Solar Street Light

1. Solar Panel

This is the prerequisite part of solar street lights, as solar panel will convert solar energy into electrical energy. Solar panels are of two types:

- Mono-crystalline, and
- Poly-crystalline.

Note: conversion of mono-crystalline solar panel is much higher than poly-crystalline.

2. Lighting Fixture

LED is used as lighting source of modern solar street light as it provides much higher Lumens with lower energy consumption which is around 50% lower than HPS fixture.
Note: **HPS fixture is high pressure sodium vapour lights**. It is a specific type of gas discharge light and is also known as **High Intensity Discharge (HID)** or **Arc Light.**

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NEURAL NETWORK BASED MPPT CONTROLLER WITH BOOST CONVERTER FOR FUEL CELL BASED ELECTRIC VEHICLE

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ABSTRACT

Due to the strict guidelines on carbon emissions and the gas financial system, fuel cell electric motors (FCEV) motors are becoming an increasing number of famous inside the car enterprise. This paper offers the neural network most electricity point monitoring (MPPT) controller of the 1.26 kw proton change membrane gas mobile (PEMFC), which affords electric car powertrain theusage of dc-dc strength converters. The proposed neural network controls the MPPT radial basis feature community (RBFN) the usage of the PEMFC maximum power point (MPP) tracking algoritham. High frequency switching and high dc-dc converted energy are vital for FCEV continuity. For maximum energy benefit, a 3-phase power deliver interleaved boost converter (IBC) is also designed for FCEV systems. The interleaving technique reduces the contemporary enter stress and electrical strain within the semiconductor electric tool. FCEV gadget overall performance analysis with RBFN based totally MPPT manage in comparison to fuzzy Logic controllers (FLC) on the MATLAB / Simulink platform.

Keywords: Fuel cell electric vehicle, high voltage gain IIBC, PEMFC, MPPT, RBFN etc.

1. INTRODUCTION

Due to The Environmental Pollution and Finite Reserves of Fossil Fuels, Automobile Industries Are Showing More Interest In electric cell Electric Vehicles (FCEV). The Rapid Advancements in Power Electronics And electric cell Technologies Have Empowered the numerous Developmentin FCEV. Fuel Cells Have the advantages of fresh Energy Production, High Reliability, High Performance and Low Sound. counting on the kind Of Electrolyte Substance Cells Are Categorized Into differing types like Proton Exchange Membrane Fuel Cell (PEMFC), Alkaline cell (AFC), oxyacid electric cell (PAFC), Solid oxide cell (SOFC) and Molten Carbonate electric cell (MCFC). within the midst of all of this, PEMFCS controls the automotive industry because of its cold and fast start.

- **FUEL CELLS**

Thanks to Environmental Pollution and also the End of Natural Oil Depot, the AutomotiveIndustry Shows More Interest in Electric Vehicles.

Fuel Cells Have the advantages of unpolluted Power Generation, High Reliability, HighEfficiency and Low Noise.

PEMFCs Are Dominating the car Industry due to Their Low Operating Temperature and alsothe fast Start-up.

- **MPPT**

MPPT Algorithms, P&O is easy, popular and straightforward to use. P&O And Incremental Conduction Methods Produces Oscillations at Steady State which is able to Reduce Efficiency of Cell System.

To overcome this problem, symbolic logic controllers and neural network algorithms were introduced to detect MPPT with increased efficiency and accuracy.

Radial Basis Function Network (RBFN) MPPT Base Control Suggested PEMFC MPPT Tracking.

A high voltage gains three-phase non-isolated interleaved boost converter (IBC) for electric cell applications to achieve low switching stress and high voltage gain. The fraudulent measure measures the reliability of the cell and provides greater power. The output voltage of the proposed converter is given to the electrical motor through an inverter for propulsion of the vehicle. the electrical motor plays a vital role in FCEVs. An adequate motor considerably reduces the price and size of the cell.

2. Objectives

The primary objectives of this study are often summarized as follows:

1) To study the Neural Network Based MPPT Controller.

2) To understand the Boost Converter concept deeply.

3) To study MPPT topology, modulation strategy and operating principlesWidely.

4) To study simulation validations of the proposed system.

A TWO-INPUT Z-SOURCE INDIRECT MATRIX CONVERTER FOR GRID-COUPLED RENEWABLE HYBRID SYSTEMS

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Abstract: Here a new converter topology for grid connected Hybrid Renewable Energy System (HRES). The proposed topology named Dual Input Z-source Indirect Matrix Converter (DIZIMC) consists of an Ultra Sparse Z-source Matrix Converter (USZMC) interfacing PV and Wind Turbine (WT) to the grid. The DC link of the proposed converter is replaced by Interconnection Sources System (ISS). The ISS operates according to whether the sources produce energy or not. It allows connecting the sources individually or simultaneously and even isolates them if necessary. In the other hand, the DIZIMC provides several advantages such as reduced number of IGBTs and compact size inherited from USZMC, the use of Z-sources instead of conventional DC/DC converters keep the matrix configuration of the global structure. The global model of the proposed system was tested by simulation under Matlab/Simpowersys environment. The obtained results show clearly freedom in connecting the operational sources, also a better quality of energy injected to the grid.

Keywords: dual input converter; ultra sparse matrix converter; z-source matrix converter; hybrid renewable energy system

I. INTRODUCTION

Generally transformers are used as isolation device between two different voltage level systems and to provide galvanic isolation which is necessary for safety purpose. Line frequency transformers are often used at high power system which is a most expensive component. Replacement of the low frequency transformer with its high or medium frequency counterpart along with power electronic converter leads to dramatic increase in power density. The increase in availability high frequency and low density magnetic materials and reduction in the cost of semi conductor devices leads to design various structure having comparable efficiency and economic viability. Also due to addition in feature like reactive power support, voltage and frequency regulation these semiconductor devices has an enabling technology for modernization of electric power distribution system. High power density electric motor drives for example, electric traction, wind power, medium voltage ASD are the major area of application of these semiconductor devices. In case of wind turbines in replacement of low frequency transformers, power electronic transformers are located at bottom of tower and eliminate the quantity of copper loss occurred in carrying the generated power at low voltage. But the high current still remains throughout the system. These devices

or topologies can be used either in series or parallel say modular units or multilevel structures to match with the grid voltage and rated power. Reduction in efficiency, power density, reliability is also some of the additional features that can be experienced by using these topologies.
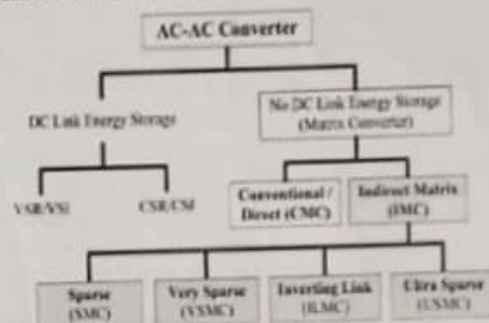

Fig. 1 Classification of AC to AC converters

II. LITERATURE SURVEY

P.C.Krause [1]: This book gives overview about the mathematical modelling of various machines including induction machine. This book also discuss in detail about the various reference frames and necessary transformations required for transferring the quantities from one reference frame to another. This book also incorporates the overview about the computer simulations of various electrical machines.

Rubén Peña, Roberto Cárdenas, Eduardo Reyes, Jon Clare, Patrick Wheeler [1]: This paper presents a control strategy for a doubly fed induction generator (DFIG) using an indirect matrix converter. "Virtual dc link" voltage levels are exploited between the rotor side converter and grid side converter. The presented method leads to a reduction in the commutation losses in the output converter and reduced common mode voltage. Soft switching commutation is obtained by synchronizing the input and output converter pulse width modulation patterns. This presented modulation strategy is particularly applicable in DFIG applications because the required rotor voltage decreases when the DFIG speed is close to the synchronous speed. The complete control strategy is experimentally validated using a 2-kW rig.

Rubén Peña, Roberto Cárdenas, Eduardo Reyes, Jon Clare, Patrick Wheeler [10]: In this paper, a topology for a grid-connected generation system, based on two doubly fed induction machines, is presented. The proposed scheme is

Design & Analysis of Range Extension Kit For MK-80 Bomb

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Abstract – In this paper we shall look into different nose, wing, tailfin designs primarily for high performance store, what are the factors that a designer has to keep in mind in order to aerodynamically optimize them and what criteria has to be kept in mind so as to choose an appropriate geometry for the defined mission profile. A bomb fitted with wings to provide lift, and which is carried and released in the direction of a target by an aircraft.

Key Words:
C_P - Centre of pressure
C_D - drag coefficient
γ - Ratio of specific heats
L - Length
V - Volume
M - Mach number
S_w - wetted area
C_{Dsf} - Skin friction coefficient
C_{wv} - Wave drag coefficient
C_{DB} - Base drag coefficient
P_b - Static pressure of base
P_∞ - Free stream static pressure

1. INTRODUCTION

Modern flight vehicles such rocket, missiles and airplanes due to their mission profiles experience performance degrading effects which need to be curbed. It is very important as designers that we figure out what could be the reasons for performance inhibition, and must find suitable methods or optimization techniques, so as to eliminate or minimize these effects. Also optimized aerodynamic variables lead to optimized trajectories, which play a vital role in payload delivery to the target.

In this survey we would be looking different nose cone geometries and study the various performance deterioration factors and their causes in different flow regimes, so that suitable nose cone geometries can be chosen in accordance to the mission profile.

The first problem that we would be addressing in this survey is to select the appropriate nose cone geometry which is best suited for specific flow and operating conditions. The selected nose cone geometry must have desirable drag, CP and heat transfer characteristics. For this we would be using analytical & computational techniques to draw reasonable conclusions and results.

2. NOSE CONE GEOMETRIES

In designing a missile system there various configurations and designs that can be considered. Normally the shape and geometry of the nose cone is selected in the basis of combined considerations of aerodynamic, guidance and structure. In this section we would be briefly looking into various nose cone geometries used for vehicle design.

For an engineering problem statement we would be defining sections which are meant to travel through a compressible C_{D0}- zero lift drag flow medium creating a solid of revolution shape which experiences minimal resistance through rapid motion in the fluid medium, as nose cone geometric shape greatly influences performance.

Conic, spherically blunted conic, bi-conic, tangent ogive, spherically blunted tangent ogive, secant ogive, elliptic, parabolic, power series and Haack series are the cone designs generally used for aerospace applications. The Von-Karman nose cone is a special case of the Haack series.

Enrichment of Geoportal Interoperable Platform and Development of Thematic Applications for Land Use Management and Agricultural Land Use Planning

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Abstract - *Geoportals is a modest way to share online open Geo-spatial data and to develop Geo-Information Management System. The role of Geoportals is to provide possible advancements in Digitizing Agricultural or any other spatial data. This paper presents a review of the literature concerning Geoportals and serves many primary and secondary purposes. The paper will mainly focus on developing a hybrid-based Geoportal model. The strength of this Geoportals will lead to a full-fledged online Geoportal Interoperable Platform that could provide better data sharing and dissemination solutions to the challenges. The main focus of this project will be on sharing the data in the form of service but not actual data. Actual sharing of data might cause tampering with the data so it might affect the confidentiality of the data of a specific organization. So this project will fully be concentrated on service-oriented architecture. The proposed system will be able to view, analyze, and read data in the form of a map. Users will also get the facility to view data diagrammatically with the help of charts. This data will include vector data such as points, lines, polygons, and also raster data. All the data will be uploaded on GeoServer present in the specific organization. This data will be shared by developing a user-friendly User Interface and will be hosted on a special Server within the organization. An end user will be able to provide feedback and give any suggestions. It will be helpful to strengthen the Geoportal.*

Key Words: *GeoServer, Geoportal, Geo-spatial data, Geo-Information, Agriculture, Data Analysis, GIS.*

1.INTRODUCTION

Spatial data analysis has become increasingly popular in most disciplines including public health, economics, crime, population, social science, agriculture, etc. Geoportals are the standardized way to find and access geospatial information and associated geographic services for researchers and users. Typically, these Geoportals also provide various functions for users to explore and analyze the data online. Geoportals are a consolidated web-based solution to provide open spatial data sharing and online geo-information management. The Geoportals share information in the form of maps. A Map is an important and major source of geographic information. It is a symbolic representation of selected characteristics of a place, usually drawn on a flat surface. The map presents information about the world in a symbolic, simple, visualizing way depicting important geographic facts for a certain place which is used extensively, for planning, analysis for decision-making by scientists, planners, administrators, policymakers, engineers, natural resources mapping, and monitoring institutes or agencies, academicians, ministries, social group sand, etc.

Geoportals are successful in linking multi-source data, but it is unrealistic to integrate the growing list of open-source tools in one place. A Geoportal has to be flexible in integrating user's data and third-party analytical functions to become a workbench, where users could process and model the data simultaneously. Compared with desktop GIS software which is often prepared for professional GIS users, Geoportals that links with open-source tools could provide a very useful and lightweight workspace for researchers that don't have adequate knowledge in GIS, especially in the area of spatial social science. The integration of open-source tools allows easier integration of big data sources. Geoportals normally include baseline data such as censuses and surveys. The purpose of this paper is to elaborate on the concepts of Geoportals in a wider and more informative way. This paper will show how Geoportal is developed and integrated using different open-source tools. This Geoportal will be able to visualize vector and raster data. This Geoportal will be interlinked with GeoServer. Along with sharing and visualizing data, this portal will show how to do a query on vector files. This portal will also be able to show data diagrammatically i.e., pie chart, line chart, bar chart, etc. This Geoportal will be able to integrate with different GeoServers from different locations, which means this portal will work on an Interoperable platform. This proposed scenario will be very much useful to many users and researchers to go out in one place i.e. Geoportal and collects different information such as horticulture, animal, fishery, soils, crop, etc according to their requirement.

Evaluation Of Academic Performance Of Students Using Fuzzy Logic

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Abstract - This paper proposes a method for evaluating the academic performance of students based on a fuzzy logic approach. The proposed method takes into account different factors that influence students' performance, such as attendance, homework completion, exam scores, and participation in class. Fuzzy logic is used to handle the imprecision and uncertainty of these factors and to provide a more accurate and flexible evaluation system. The results of applying the proposed method to a dataset of students' performance show the effectiveness of the approach in providing fair and comprehensive evaluations.

Index Terms - Academic performance, Fuzzy logic, Fuzzy sets, Membership function, Linguistic variables, Rule-based System, Mamdani Method, Defuzzification, Precision, Uncertainty

I. INTRODUCTION

The evaluation of students' academic performance is a critical issue in education systems worldwide. Traditional evaluation methods are based solely on numerical scores and grades, which may not accurately reflect the students' abilities and efforts. Moreover, these methods often neglect other factors that can significantly affect students' performance, such as attendance, homework completion, and participation in class. Fuzzy logic is a suitable approach to handle these imprecise and uncertain factors and provide a more accurate and flexible evaluation system. This paper proposes a fuzzy logic-based method to evaluate the academic performance of students and compares its results with traditional evaluation methods.

For example, instead of giving a student a letter grade of A, B, C, etc., a fuzzy logic based system could use fuzzy sets to describe the degree to which a student's performance meets the criteria for each grade. This would allow for a more nuanced evaluation of academic performance, taking into account the imprecision and variability that is inherent in this process.

One potential advantage of using fuzzy logic in academic evaluation is that it can provide more personalized feedback to students. By using fuzzy sets to describe the degree to which a student's performance meets the criteria for each grade, the system can provide more specific feedback to students on areas where they need to improve.

In summary, fuzzy logic can provide a useful framework for evaluating academic performance by accommodating the imprecision and uncertainty that is inherent in this process. By using fuzzy sets to describe the degree of membership of a student's performance in a particular category, fuzzy logic can provide a more nuanced evaluation of academic performance that is personalized and objective.

II. LITERATURE SURVEY

This section discusses previous research on evaluating the academic performance of students and the use of fuzzy logic in education. The importance of considering multiple factors in evaluating students' performance is highlighted, as well as the limitations of traditional evaluation methods. The advantages of fuzzy logic in handling uncertainty and imprecision are also presented, along with previous applications of fuzzy logic in educational systems.

Fuzzy logic has been used in various fields for decision-making processes, and its application in education and academic performance evaluation has been gaining attention in recent years. Here are some relevant studies on the topic:

1. "A fuzzy logic approach for academic performance evaluation of students" by B. S. Saini and S. K. Soni (2016). This study proposed a fuzzy logic model for evaluating the academic performance of students based on multiple criteria such as attendance, assignments, projects, and test scores. The model was validated using data from a group of engineering students, and the results showed that it could provide a more accurate and comprehensive evaluation of student performance than traditional methods.

2. "Fuzzy logic approach for evaluating student academic performance in higher education" by S. M. M. Saifuddin and M. S. U. Sarker (2017). This study developed a fuzzy logic model for evaluating the academic performance of students in higher education based on factors such as attendance, class participation, assignments, and exam scores. The model was tested using data from a group of undergraduate students, and the results showed that it could provide a fair and accurate evaluation of student performance.

3. "Application of fuzzy logic for evaluation of academic performance in higher education institutions" by A. H. K. Sheikh and M. N. K. Chowdhury (2019). This study proposed a fuzzy logic model for evaluating the academic performance of students in higher education based on factors such as attendance, class participation, assignments, and exam scores. The model was tested using data from a group of undergraduate students, and the results showed that it could provide a more comprehensive and accurate evaluation of student performance than traditional methods.

4. "A hybrid fuzzy logic and analytic hierarchy process approach for academic performance evaluation of students" by S. M. M. Saifuddin and M. S. U. Sarker (2020). This study proposed a hybrid fuzzy logic and analytic hierarchy process (AHP) approach for evaluating the academic performance of students based on multiple criteria such as attendance, assignments, projects, and test scores. The model was validated using data from a group of undergraduate students, and the results showed that it could provide a more accurate and comprehensive evaluation of student performance than traditional methods. Overall, these

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LOW COST IOT BASED IRRIGATION STSTEM

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ABSTRACT

The low-cost IOT (Internet Of Things) based irrigation system is a project aimed at automating and optimizing the irrigation process for small-scale farmers. The system utilizes IOT sensors to collect data on soil moisture levels, temperature and humidity which is transmitted to a central control unit. The control unit then analyzes the data and activates the irrigation system when necessary ensuring that the crops receive the right amount of water at the right time. The system is designed to be cost-effective and easy to install. This make it accessible to farmers in low-income areas. This project has the potential to increase crop yields and reduce water waste thus contributing to sustainable agriculture practices.

Keywords: Irrigation, IOT sensors, sustainable agriculture, GSM (Global System for mobile), smart watering system.

I.   INTRODUCTION

An IoT based irrigation system is a smart watering system that is designed to automate the process of watering crops, plants or gardens. The low cost IoT irrigation systems are equipped with sensors, controllers and other IoT devices that gather data about the soil moisture level, temperature, humidity and other environmental factors. The collected data is then used to control the water supply to the plants ensuring that they receive the right amount of water at the right time. The requirement of water in irrigation system is very crucial, so the new irrigation methods should implement in such a manner that requires less water consumption when compare to old technologies. Smart irrigation means not only consuming less water it also provide water supply depending on requirement [1].

II.   METHEDOLOGY

In this proposed model, the focus is on the connectivity which is very important due to volatile cellular connectivity. Here, the three modes of connectivity are:

1. **Cloud connectivity (IoT):** This project can be operated from remote places because the farmer can operate it from anywhere in the world.
2. **GSM connectivity:** For cloud connectivity, internet connectivity is a must. In case of failure in cloud connectivity or the internet, one can operate this module remotely through the GSM network from anywhere in the world.
3. **Bluetooth Connectivity:** The integration of the Bluetooth module just for emergency purposes in case of both connectivity fails.

   After successful integration of all these connectivity modules, the farmers will have two operational options:

1. **Time Base Operational Programme:** Here, farmers can operate their irrigation requirements just by entering the operational time for each valve as well as the start time in a 24 hour cycle, and the irrigation pump will operate for the sum of all the time entered for each valve.
2. **Soil Moisture Sensor Base Programme:** Here, the farmer can just enter the irrigation time for each valve, then the soil moisture sensor will detect the requirement for water in the field, and the programme will run automatically.

   By using a solenoid valve with a solenoid coil of 24V AC which is more reliable for agricultural fields.

VOICE-CONTROL HOME AUTOMATION SYSTEM

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6th Prof.Shubhangi Ghadinkar, 7th Rajesh Pawar

6th Professor, 7th Guide
Computer Science and Engineering
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Abstract- In recent years, home automation systems have become increasingly popular, providing users with the ability to remotely control various home appliances, such as lighting, fans, AC, and others. The integration of voice control technology into home automation systems has further enhanced their functionality and convenience. In this research paper, we present a voice-controlled home automation system that can be controlled via a smartphone using Arduino UNO, relay modules, and Bluetooth technology. The system is capable of turning on and off various home appliances, such as lights and fans, by recognizing voice commands given by the user.

Keywords- home automation, electrical appliances, speed recognition, microcontroller, Bluetooth module, mechanical relay, user interface device.

I. INTRODUCTION

Voice control home automation is a popular topic in the world of smart homes. It allows you to control your home appliances and devices with simple voice commands. In this project, we will introduce how to create a voice control home automation system using an Arduino Uno, a relay, Bluetooth module, and a smartphone.

First, let's understand the components we will be using in this project. An Arduino Uno is a microcontroller board that is used to control electronic circuits. It has digital input/output pins, analog inputs, and can communicate with other devices using serial communication. The relay is an electronic switch that can be controlled by the Arduino to turn on/off appliances such as lights or fans. The Bluetooth module is used to communicate between the Arduino and a smartphone.

To get started, you will need to connect the relay to the Arduino Uno. The relay will be used to control the appliances in your home. Connect the VCC pin of the relay module to the 5V pin on the Arduino, and the GND pin to the GND pin on the Arduino. Connect the IN pin of the relay module to a digital pin on the Arduino, such as pin 8.

Next, you will need to connect the Bluetooth module to the Arduino Uno. Connect the VCC pin of the Bluetooth module to the 5V pin on the Arduino, and the GND pin to the GND pin on the Arduino. Connect the RX pin of the Bluetooth module to the TX pin on the Arduino, and the TX pin of the Bluetooth module to the RX pin on the Arduino.

Once the hardware is connected, you can start programming the Arduino Uno. You will need to write a program that can receive voice commands from the smartphone via Bluetooth and turn on/off the relay accordingly. There are various libraries available for Arduino that can be used for voice recognition and Bluetooth communication.

One popular library for voice recognition is the EasyVR library, which can be used to recognize predefined voice commands. You can define specific voice commands such as "turn on the lights" or "turn off the fan" and map them to specific digital pins on the Arduino to control the relay.

For Bluetooth communication, you can use the SoftwareSerial library to create a serial communication channel between the Arduino and the Bluetooth module. This will allow the Arduino to receive voice commands from the smartphone and send back status updates.

Finally, you will need to create a smartphone application that can send voice commands to the Arduino via Bluetooth. There are various apps available for both iOS and Android that can be used for this purpose. You can create a simple app using App Inventor, which is a free online tool for creating Android apps.

II. LITERATURE SURVEY

There are several articles and research papers available on the topic of voice control home automation via smart phones. Here are some relevant literature references that you may find useful:

"Smart Home Automation Using Voice Command Control" by P. R. Nair and A. R. Pradeep Kumar. This research paper proposes a voice command control system for home automation using a smart phone. The system uses an Android app to control various appliances in the home.

"Design and Implementation of Home Automation System Using Voice Recognition" by S. S. Khalid and S. A. Khan. This paper presents a system that uses voice recognition technology to control home automation devices. The system is designed to be user-friendly and easy to use.

Human Resources and Sustainable Development - An Overview

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Abstract:

Human resource development aims at better utilization of human labor which includes manpower development. Manpower means all types of organized and unorganized workers. employers and supervisors, managers and employees. This word is very close to labor. All persons who are employed or capable of working but are not currently employed are called human resources. Human resource development planning is a program in which the acquisition, development, retention and utilization of employees of an organization is possible by the employer. Evaluation of human resources, its estimation and finding sources of achievement etc. are also subjects of human resource development. Just as the objective of economic planning is the equitable utilization of productive resources, the objective of human resource development is the equitable utilization of manpower. The present paper discusses sustainable development through human resource development.

Keywords: - human resource. Organization, Sustainable development, productive

Preface:

Today the meaning of human resource development is getting wider. Human resource development is a method in which planned measures are taken to employ people of all classes and at all levels and to utilize their full potential. In the modern age, when workers and employees are becoming aware of their interests and human problems and aspirations, the importance of human resource development is also increasing. In an era of extreme competition, maximum profit can be achieved with minimum effort only through proper human resource development. Human resource development is a new concept, which is used at two levels, micro and macro, where the first level is the development of employees and managers in an organization, so as to increase both quality and productivity. There, at the second level, it means holistic development of the entire population of the nation. The development of human civilization and culture is the result of man's superior physical structure and his intellectual intelligence. Hence in modern management science it is said that efficient utilization of resources like capital, materials, technology and processes etc. requires high skill and commitment of employees working in an organization. Although the concept of human resource development (HRD) is not new in the developed countries of the world, the concept of human resource development in India still seems limited. narrow and relatively new. The guiding principles of the policy are embedded in the concept of human resource development.

Human resource development is a process and concept that considers man as a resource. emphasizes on improving and enhancing him in all aspects so that the level of performance can also be high. Kautilya, one of India's earliest political and administrative thinkers, wrote in his world famous work 'Arthashastra'

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Certificate of Publication

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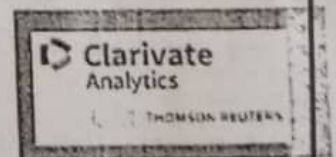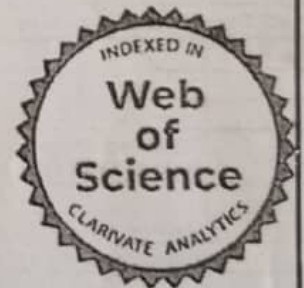Has been reviewed by the Editorial Board and Published

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