	3.3.1 Number of research papers published per teacher in the Journals notified on UGC CARE list during the last five years						
Sr. No	**Title of paper**	**Name of the author/s**	**Department of**	**Name of journal**	**Calendar**	**ISSN number**	**Page No.**
1	Load-bearing characteristics of a hybird Si3N4-epoxy composite	Dr. Koli Gajanan C	Mechanical Engg.	Biomass Conversion and Biorefnery SPRINGER	2023	ISSN:2190-6815	14
2	Performance analysis of sodium alanate hydride reactor with different nanofluids	Rahul U. Urunkar	Mechanical Engg.	International Journal of Hydrogen Energy	2023	ISSN:0360-3199	15
3	Motor Vehicles Forecasting in Kolhapur City Using Combined Grey Model	Sagar M. Shinde	Civil Engineering	KSCE Journal of Civil Engineering	2023	1226-7988	16
4	SILAR synthesis of SnO2-ZnO nanocomposite sensor forselective ethopnal gas	Dr.Sachin S.Potdar	Physics	Bulletin of materials Science,Springer	2022	0250-4707 (print) 0973-7669 (web)	17
5	Novel synthesis of perovskite GdxAl1–xO3 semiconductor by combustion route for selective LPG sensing	Dr.Sachin S.Potdar	Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur 416201, India	bulletin of material Science , Springer Nature	2022	0250-4707	18
6	Potassium ferrocyanide promoted an efficient synthesis of benzoxazoles and benzothiazoles under solvent free condition	Dr.Sachin S.Potdar & Dr.Vishal S.Patil	Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur 416201, India	Indian Academy of Sciences	2022	1307-6175	19
7	A prototype model for detection and classification of landslides using satellite data	Dr. Suhas G. Sapate	Computer Science and Engineering	Journal of Physics: Conference Series, 2022	2022	17426588, 17426596	20
8	Past,Present and future of Automated Mamographic Density Measurement for Breast Cancer Risk Prediction	Dr. Suhas G. Sapate	Computer Science and Engineering	Journal of Physics: Conference Series, 2022	2022	17426588, 17426596	21
9	Segmentation of pectoral muscle from digital mammograms with depth-first search algorithm towards breast density classification	Dr. Suhas G. Sapate	Computer Science and Engineering	biocybernetics and biomedical	2021	0208-5216	22

10	Active cooling system for efficiency improvement of PV panel and utilization of waste-recovered heat for hygienic drying of onion flakes	Dr. Vinayak H. Deokar	Mechanical	Journal of Materials Science: Materials in Electronics, Springer nature	2021	0957-4522	23
11	Synthesis and Characterization of Macro Porous Gd2O3ZnO Nanocomposte Sensor for NO2 Gas Detection	Dr. S.S. Potdar	Basic Sciences & Humanities	Rasayan Journal of Chemistry	2021	0974-1496	24
12	Optimization and Prediction on the Mechanical Behavior of Granite Particle Reinforced Al6061 Matrix Composites Using Deer Hunting Optimization Based DNN	Dr. Koli Gajanan C	Mechanical Engg.	Silicon	2021	1876-990X	25
13	Simulation Modeling and Experimental Validation of Solar Photovoltaic PMBLDC Motor Water Pumping System	Dr. Vinayak H. Deokar	Mechanical Engineering	Journal of Thermal Engineering	2021	2148-7847	26
14	Enhancement of heat and mass transfer characteristics of metal hydride reactor for hydrogen storage using various nanofluids	Rahul U. Urunkar	Mechanical	International Journal of Hydrogen Energy	2021	1879-3487	27
15	Breast cancer diagnosis using abnormalities	Dr. Suhas G. Sapate	Computer Science and Engineering	biocybernetics and biomedical engineering	2020	0208-5216	28
16	on ipsilateral views of digital mammograms	Dr. S. S. Potdar, and Dr.V. S. Patil	Basic Sciences & Humanities	Journal of Materials Science: Materials in Electronics	2020	0957-4522	29
17	Heterogeneous composites for low and medium temperature thermal insulation: A review	Dr. Mohan Vanarotti	mechanical	Energy and Buildings	2019	0378-7788	30
18	Facile synthesis of Nanodiced SnO2-ZnO composite by chemical route for gas sensor application	Dr. S.S. Potdar	Basic Sciences & Humanities	Journal of Electronic Materials	2019	0361-5235	31
19	Influence of bath temperature on microstructure and NH3 sensing properties of chemically synthesized CdO thin films	Dr. S.S. Potdar	Basic Sciences & Humanities	Materials Science-Poland	2019	2083-134X	32
20	A novel FRET probe for determination of fluorescein sodium in aqueous solution: analytical application for ophthalmic sample	Dr. Vishal A. Patil	Basic Sciences & Humanities	Indian Journal of Chemistry	2019	0376-4710	33
21	Electrochemical synthesis of CuSxSe1-x thin film for supercapacitor application	Dr. S.S. Potdar	Basic Sciences & Humanities	Journal of Alloys and Compounds, ELSEVIER	2018	0925-8388	34
22	Radiomics based detection and characterization of suspicious lesions on full field digital mammograms	Dr. Suhas G. Sapate	Computers Science and Engineering	Computer Methods and Programs in Biomedicine	2018	0169-2607	35

23	An Automatic MCQ & Summary Generation By Using NLP"	Prof. Pallavi Patil	Computer Science and Engineering	International Research Journal of Modernization in Engineering Technology and Science	2023	ISSN: 2582-5208	36
24	PROJECT THE EXECUTIVES WEB APPLICATION	Prof. Pallavi Patil	Computer Science and Engineering	International Research Journal of Modernization in Engineering Technology and Science	2023	ISSN: 2582-5208	37
25	MODI LIPI HAND WRITTEN CHARACTER RECOGNITION USING CONVOLUTIONAL NEURAL NETWORKS (CNN)	Prof.S.A.Babar	Computer Science and Engineering	International Research Journal of Modernization in Engineering Technology and Science	2023	e-ISSN: 2582-5208	38
26	SECURE FILE STORAGE AND TRANSFER USING CLOUD	Prof. Samrat Babar	Computer Science and Engineering	International Research Journal of Modernization in Engineering Technology and Science	2023	e-ISSN: 2582-5208	39
27	Solar Powered Electrical Vehicle	Yogesh Ramchandra Naik	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3930	40
28	EV CHARGING STATION WITHOUT USING BATTERY	Mr. N. S. Jadhav	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3931	41

29	ELECTRICAL ENERGY AUDIT OF "SANJEEVAN KNOWLEDGE CITY	Mr. V. T. Metkari	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3930	42
30	Power Generation Through Vehicle Suspension and Regenerative Braking System in EV's	Mr. V. T. Metkari	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3930	43
31	CALIBRATION OF 1-PHASE AND 3-PHASE ENERGY METER USING PID CONTROLLER	Mr. V. T. Metkari	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3930	44
32	REVIEW ON WIND-SOLAR HYBRID POWER SYSTEM	Mr. A. M. Bhandare	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2023	ISSN: 2582-3930	45
33	3PHASE FAULT DETECTION BY USING IOT	Mr. A. M. Bhandare	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2023	e-ISSN: 2582-5208	46
34	Facial Emotion Recognition with Music Recommendation	Mr.R.S.Nejkar	Computer Science and Engineering	International Journal of Advanced Research in Science, Communication and Technology	2022	ISSN : 2581-9429	47
35	MODI Lipi Handwritten character Recognition using CNN and Data Augmentation Techniques	Mr.S.A.Babar	Computer Science and Engineering	International Research Journal of Engineering and Technology	2022	ISSN: 2395-0072	48

36	The Analysis of Share Market using Random Forest & SVM	Mr.S.A.Babar	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2022	e-ISSN: 2395-0056	49
37	E-Health Care Cloud Solution	Mr.V.A.Shevade	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2022	e-ISSN: 2395-0056	50
38	Block Chain Based Secure Data Storage On Cloud	Mr.V.A.Shevade	Computer Science and Engineering	International Research Journal Of Modernization In Engineering Technology And Science (IRJMETS)	2022	e-ISSN: 2582-5208	51
39	A survey on Enhancements in Speech Recognition	Mrs.T.V.Deokar	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2022	e-ISSN: 2395-0056	52
40	E-Commerce Website “City Kart”	Mrs.T.V.Deokar	Computer Science and Engineering	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)	2022	ISSN (Online) 2581-9429	53
41	Traffic Analysis using Image Processing to Alert Traffic Control	Ms.S.S.Kumbhar	Computer Science and Engineering	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)	2022	ISSN (Online) 2581-9429	54
42	The Virtual Dressing Room	Ms.S.S.Kumbhar	Computer Science and Engineering	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	55

43	AC SOLAR GENERATOR WITHOUT INVERTER	N. S. Jadhav	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	56
44	Digital Smart Pen	Naik Y R	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2022	ISSN: 2582-3930	57
45	SOLAR-WIND HYBRID ENERGY SYSTEM FOR DC LIGHTNING	Naik Y R	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	58
46	Smart Irrigation System	Metkari V T	Electrical	International Journal of Advances in Engineering and Management (IJAEM)	2022	ISSN: 2395-5252	59
47	Reverse Recovery of Motor	Gurav P B	Electrical	International Journal of Advances in Engineering and Management (IJAEM)	2022	ISSN: 2395-5253	60
48	SMART BLIND STICK	N. S. Jadhav	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	61
49	IOT Based Smart Food Dryer	P.P.Kulkarni	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2022	ISSN: 2582-3930	62

50	Single Phase to Three Phase Converter	A.M.Bhandare	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2022	ISSN: 2582-3930	63
51	11-STAGE MULTILEVEL INVERTER	Naik Y R	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	64
52	EV CHARGING STATION	Gurav P B	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	65
53	Solar Panel Cleaner Using Vibrator and Air Blower for Desert Location	Gurav P B	Electrical	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)	2022	ISSN (Online) 2581-9429	66
54	TRANSMISSION LINE MONITORING SYSTEM USING IOT	A.M.Bhandare	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	67
55	Automatic Source Selecter with Real Time Battery Parameter Monitoring	Metkari V T	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2022	ISSN: 2582-3930	68
56	POWER GENERATION BY USING REVOLVING DOOR	N. S. Jadhav	Electrical	International Research Journal of Modernization in Engineering Technology and Science	2022	e-ISSN: 2582-5208	69

57	Design Analysis and Optimization of SUV Chassis	Prof.Katkar Ajit Ashok	MECHANICAL DEPARTMENT	IJSTE - International Journal of Science Technology & Engineering	2022	ISSN (online): 2349-784X	70
58	Multi-channel Dense-Net Architecture for classification of mammographic breast density in Breast Cancer Detection	Dr. Suhas G. Sapate	Computers Science and Engineering	Frontiers in Public Health	2021	ISSN: 2296-2565.	71
59	CRM for Online Jewellery Shop	Ms.K.B.Kari	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2021	e-ISSN:2395-0056p-ISSN:2395-0072	72
60	Property Rent Sale Application	Ms.P.D.Patil	Computer Science and Engineering	International Journal of Computer Science Trends and Technology (IJCST) – Volume 9 Issue 4, Jul-Aug 2021	2021	ISSN: 2347-8578	73
61	Donation Through Watching Adds	Mr.S.S.Pujari	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2021	e-ISSN: 2395-0056 p-ISSN: 2395-0072	74
62	Prediction Based Sugar Cane Farming in Western Maharashtra Using Data Mining	Mr.M.M.Hajare	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2021	e-ISSN: 2395-0056 p-ISSN: 2395-0072	75
63	IOT BASED POWER THEFT DETECTION AND TRACKING	Mr. P.P. Kulkarni, Mr. P.B. Gurav	Electrical	The International journal of analytical and experimental modal analysis	2021	ISSN NO:0886-9367	76
64	IOT BASED SOLAR PANEL MONITORING AND CONTROLLING	Mrs. D.M. Kerutagi	Electrical	The International journal of analytical and experimental modal analysis	2021	ISSN NO:0886-9367	77
65	IOT BASED TRANSFORMER PARAMETER Monitering	Mr. P.P. Kulkarni	Electrical	The International journal of analytical and experimental modal analysis	2021	ISSN NO:0886-9367	78

66	Multifunctional Induction Machine	Mr. P.P. Kulkarni	Electrical	International Journal of Advances in Engineering and Management (IJAEM)	2021	ISSN: 2395-5252	79
67	Water Management and Theft Detection System	Mr. N.S. Jadhav	Electrical	The International journal of analytical and experimental modal analysis	2021	ISSN NO:0886-9367	80
68	AUTOMATIC LIGHT SWITCHING AND TEMPERATURE BASED FAN SPEED CONTROL USING MICROWAVE, TEMPERATURE AND LDR SENSOR	Mr.Naik Y.R.	Electrical	International Research Journal of Engineering and Technology (IRJET)	2021	p-ISSN: 2395-0072	81
69	SMART NOTICE BOARD USING RASPBERRY PI MODULE	Mr. P.P. Kulkarni	Electrical	ational Journal of Creative Research Thoughts (IJCRT)	2021	ISSN: 2320-2882	82
70	GSM Based Automatic Energy Meter Reading and Instant Billing System	Mr.A. A. Toraskar	Electrical	International Journal of Research in Engineering, Science and Management	2021	ISSN (Online): 2581-5792	83
71	AUTOMATIC PESTICIDE SPRAYING MACHINE	Mr. Metkari VT	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	84
72	THREE PHASE FAULT ANALYSIS AND LOCATION DETECTOR WITH AUTO RESET ON TEMPORARY FAULT AND PERMANENT TRIP OTHERWISE	Mr.Naik Y.R.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	85

73	IoT BASED HAND SANITIZING MACHINE, BODY TEMPERATURE AND HEART RATE MONITORING UNIT WITH FACE DETECTION SYSTEM	Mr. Jadhav N.S.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	86
74	Fast Charging of Electric Vehicle	Mr. Redekar A.P.	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2021	ISSN: 2582-3930	87
75	CURD OR YOGURT MAKER	Mr. Jadhav N.S.	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2021	ISSN: 2582-3930	88
76	Solar Wind Hybrid Power Generation	Mr. A. A. Toraskar	Electrical	International Journal of Creative Research Thoughts (IJCRT)	2021	ISSN: 2320-2882	89
77	Voice Controlled Wheel Chair System Using Bluetooth	Mr. Bhandare A.M	Electrical	International Journal of Creative Research Thoughts (IJCRT)	2021	ISSN: 2320-2882	90
78	SMART DRYER	Mr. P.P. Kulkarni	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	91

79	BASIC HELIOSTAT MODEL FOR SMALL SCALE INDUSTRY	Mr. Jadhav N.S.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	92
80	Smart Iot based chicks Brooding System	Mr. Bhandare A.M	Electrical	International Journal of Advance Research, Ideas and Innovations in Technology	2021	ISSN: 2454-132X	93
81	Automatic Gold Sphere Drill Machine	Mr. A. A. Toraskar	Electrical	International Journal Of Advance Research And Innovative Ideas In Education	2021	ISSN(O)-2395-4396	94
82	R&D ON SELF-CHARGEABLE MULTI-TECHNOLOGIES OF E-BIKE	Mr. Naik Y.R.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	95
83	ELECTRICAL CULTIVATOR OR TILLER BY USING THE SOLAR PANEL	Mr. Metkari V.T.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	96
84	ENERGY AUDIT AND RECOMMENDATION TO THE REDUCE COST OF ELECTRICITY	Mr. Gurav P.B.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	97

85	DOUBLE HOLDER WELDING TRANSFORMER	Mr. Gurav P.B.	Electrical	International Journal of Creative Research Thoughts (IJCRT)	2021	SSN: 2320-2882	98
86	SURFACE CLEANING DIS-INFECTION MACHINE	Mr. Bhandare A.M	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2021	ISSN: 2582-3930	99
87	CONTROLLED HOME APPLIANCES USING BRAIN DETECTOR	Mr. Gurav P.B.	Electrical	International Journal of Scientific Research in Engineering and Management (IJSREM)	2021	ISSN: 2582-3930	100
88	SMART EGG INCUBATOR	Mr. Metkari V.T.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	101
89	SMART HELMET BY USING MICROCONTROLLER	Mr. Naik Y.R.	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS	2021	ISSN (Online) 2456-0774	102
90	TRAFFIC SIGNAL MODIFICATION FOR THE EMERGENCY VEHICALES'	Mrs. Priyanka Sengupta	Electrical	The International journal of analytical and experimental modal analysis	2021	ISSN NO:0886-9367	103
91	THREE PHASE BLDC MOTOR CONTROLLING USING BOOST CONVERTER	Mrs. Priyanka Sengupta	Electrical	INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING	2021	ISSN (Online) 2456-0774	104

92	Design and Study of a Three-Wheeled Transport Vehicle's Front Helical Coil Suspension Spring	Prof. Koli G.C./Prof.Katkar Ajit Ashok	MECHANICAL DEPARTMENT	International Research Journal of Engineering and Technology (IRJET)	2021	e-ISSN: 2395-0056 Volume: 08 Issue: 06 | www.irjet.net p-ISSN: 2395-0072	105
93	Design and Development exp. set up for Plasma coating for textile roller drum	Prof.Katkar Ajit Ashok	MECHANICAL DEPARTMENT	International Journal of Science Technology & Engineerin	2021	IJSTEV8I3001 Volume : 8, Issue : 3	106
94	Smart City Waste Monitoring System using Android Application	Mr.M.M.Hajare	Computer Science and Engineering	International Research Journal of Engineering & Technology (IRJET)	2020	e-ISSN: 2395-0056	107
95	An effective and optimal approach for Computational resource utilization to improve compuatational accuracy in grid computing environment	Mr.M.M.Hajare, Mr.S.S.Pujari	Computer Science and Engineering	International Research Journal of Engineering and Technology (IRJET)	2020	e-ISSN: 2395-0056 p-ISSN: 2395-0072	108
96	Speed Control of Single Phase Induction Motor Using Cycloconveter	Mr. Kulkarni P.P.	ELECTRICAL DEPARTMENT	International journal of Advances in Engineering and Management (IJAEM)	2020	ISSN NO:0886-9367	109
97	Analysis of Effect of SiC Reinforcement on Microstructure and Hardness of Al 6061 and Al 7075	Prof.Katkar Ajit Ashok	MECHANICAL DEPARTMENT	IInternational Journal of Innovative Technology and Exploring Engineering (IJITEE)	2020	ISSN: 2278-3075,	110

Biomass Conversion and Biorefinery
https://doi.org/10.1007/s13399-023-04577-z

ORIGINAL ARTICLE

Load-bearing characteristics of a hybird Si_3N_4-epoxy composite

Koli Gajanan Chandrashekhar[1] · Shashishankar A[2] · Depaa RA. B[3] · G. Laxmaiah[4] · Joseph Arockiam A[5] · Padmanabhan R. G[5] · Ram Kumar P[6] · Kirubakaran D[7] · B. Ramesh[8]

Received: 21 April 2023 / Revised: 28 June 2023 / Accepted: 2 July 2023

Abstract
In this study, the epoxy composites were made using Si_3N_4 nanoparticle obtained from red matta rice husk ash and aluminised glass/pineapple hybrid fibre. The primary objective of this study was to develop lightweight structural composites for domestic infrastructure applications using biomass wastes. The epoxy composites were made using Si_3N_4 nanoparticle of 0.5 to 4 vol% and hybridised fibre of 40 vol% by hand lay-up method. The mechanical, fatigue and low-velocity impact characteristics of the composites were evaluated as per ASTM standards. The results showed that, among the composites that had been produced, composites with 2 vol% Si_3N_4 nanoparticle had the highest tensile, impact, flexural and hardness, measuring 168 MPa, 202 MPa, 6.2 J and 93 shore-D. Also, at 50% of UTS, the composite with the addition of 2 vol% Si_3N_4 nanoparticle had a better fatigue life count of about 36273. Similarly, the improved low-velocity impact strength of composite having 1 vol% of Si_3N_4 nanoparticle has maximum energy absorption of 11.4 J. Moreover, with the insertion of stacked fibre and Si_3N_4 nanoparticle, the epoxy composites have low combustion rate showing better flame-retardant behaviour. The results show that composites have been successfully produced for potential applications such as domestic infrastructure products like lightweight man-hole cover, hand rails, gratings, interior decoration panels, doors and windows.

Keywords Composites · Fibre · Nanoparticle · Mechanical · Fatigue · Flammability

1 Introduction

Composite material is made usually from two phases, i.e. reinforcement and matrix. Reinforcement works as load-bearing member and the matrix work as stress transfer among reinforcement elements. Due to their extensive application in the aerospace, automotive, construction and sporting industries, fibres are firmly regarded as reinforcement element in composite materials where they bear the majority of the loading [1–3]. Due to their durability and affordable pricing, glass fibres (GF) are one of the most popular reinforcement materials [4–6]. Nowadays, lignocellulosic fibres have been used as a reinforcement material to produce a polymeric composite and are receiving a lot of attention in the place of glass or other synthetic fibres [7–10]. Meanwhile, it is economical, commonly available and a recurrent crop with very high potential mechanical properties such as lightweight, high tensile strength, high thermal stability, flame-retardant property and prominent stiffness. Among the lignocellulosic fibres, pineapple is the promising fibre to be used as a reinforcement material due its easy availability. In order to create the faux celling board composite,

✉ B. Ramesh
rameshphd2010@yahoo.in

1 Department of Mechanical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, India

2 Department of Civil Engineering, AMC Engineering College (Affiliated to VTU) Bannerghatta Road, Bengaluru 560083, Karnataka, India

3 Department of Civil Engineering, Dr. M. G. R. Educational and Research Institute, Maduravoyal, Chennai 600095, Tamil Nadu, India

4 Department of Mechanical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad, India

5 Department of Automobile Engineering, Arasu Engineering College, Kumbakonam 612501, Tamil Nadu, India

6 Department of Chemistry, V. O. Chidambaram College, Tuticorin 628008, Tamil Nadu, India

7 Department of Electrical and Electronics Engineering, St. Joseph's Institute of Technology, Chennai 600119, Tamil Nadu, India

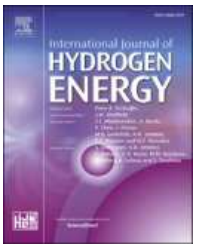
8 Department of Mechanical Engineering, J.J. College of Engineering and Technology, Tiruchirappalli 620009, Tamil Nadu, India

Published online: 15 July 2023

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/he



Performance analysis of sodium alanate hydride reactor with different nanofluids

Rahul U. Urunkar *, *Sharad D. Patil*

Department of Mechanical Engineering, RIT, Rajaramnagar, Affiliated to Shivaji University, Kolhapur, Maharashtra, India

HIGHLIGHTS

- Developed and validated mathematical model of sodium alanate based hydride reactor.
- Used nanofluid as a heat exchange fluid.
- Presented performance for Al_2O_3/HTF, CuO/HTF and MgO/HTF Nanofluids.
- Absorption time is improved by 14% for given conditions.
- Reported up to 10% enhancement in the heat exchange rate for CuO/HTF nanofluid.

ARTICLE INFO

Article history:
Received 31 July 2022
Received in revised form
3 February 2023
Accepted 27 February 2023
Available online xxx

Keywords:
Hydrogen
Hydride bed reactor
Heat transfer
Sodium alanate
Nanofluid

ABSTRACT

The thermal management of the hydride based hydrogen storage reactor is the key factor to realize the complete storing potential of hydrides. In this regards a hydride reactor filled with sodium alanate in multiple tubes is numerically analyzed for absorption process. Based on various governing equations, a mathematical model of hydride reactor is developed and validated with the help of ANSYS Fluent. The hydride reactor uses mainly water or oil for heat exchange during hydrogen sorption. In the present study conventional heat transfer fluid (HTF) is replaced with the nanofluid since it has a greater heat exchange properties. The CuO/HTF, Al_2O_3/HTF and MgO/HTF nanofluids are selected based on previous studies and results of numerical experiment are recorded. The outcomes are attained for various parameters such as material and concentration of nanoparticles, supply pressure of hydrogen and inlet temperature of heat exchange fluid. The CuO/HTF nanofluid with concentration of 5 vol% exhibited better rate of absorption in comparison with other vol% concentrations and other selected nanofluids. It shows improvement in hydrogen absorption time up to 14% under selected conditions. Additionally, it is observed that CuO/HTF nanofluid with 5 vol% concentration is thermodynamically superior to other selected nanofluids; as a result it enhances the rate of the heat exchange up to 10% for hydride reactor. It is realized that the performance of CuO/HTF nanofluid with 5 vol% concentration is superior among picked nanofluids. Therefore for the hydride reactor the use the nanofluid is advantageous.

* *Corresponding author.*
E-mail addresses: rahul.urunkar1991@gmail.com (R.U. Urunkar), p2sharad@yahoo.com, sharad.patil@ritindia.edu (S.D. Patil).
https://doi.org/10.1016/j.ijhydene.2023.02.105

Please cite this article as: Urunkar RU, Patil SD, Performance analysis of sodium alanate hydride reactor with different nanofluids, International Journal of Hydrogen Energy, https://doi.org/10.1016/j.ijhydene.2023.02.105

KSCE Journal of Civil Engineering (2023) 27(6):2385-2391
DOI 10.1007/s12205-023-1879-x

pISSN 1226-7988, eISSN 1976-3808
www.springer.com/12205

Environmental Engineering

Motor Vehicles Forecasting in Kolhapur City Using Combined Grey Model

Sagar Maruti Shinde[a,b] **and Vilas Vijay Karjinni**[c]

[a]*Shivaji University, Kolhapur 416004, Maharashtra, India*
[b]*Dept. of Civil Engineering, Sanjeevan Engineering and Technology Institute, Panhala 416201, Maharashtra, India*
[c]*Kolhapur Institute of Technology's College of Engineering (Autonomous), Kolhapur 416234, Maharashtra, India*

ARTICLE HISTORY

Received 20 October 2022
Revised 25 January 2023
Accepted 19 March 2023
Published Online 28 April 2023

KEYWORDS

Motor vehicles
Grey model
Simple linear regression model
Combined model
Forecast accuracy

ABSTRACT

Kolhapur city has witnessed consistent growth in motor vehicles (MV), and an accurate forecast is essential. To this end, a combined grey model was developed by combining the grey model (GM(1,1)) and the simple linear regression (SLR) model. The new model, named the grey simple linear regression model (abbreviated as GSLRM), is newly utilised for MV prediction. A total of five years (2008 – 2012) of MV data were employed. The accuracy of the proposed GSLRM was compared with the GM(1,1) and SLR models in terms of the mean absolute percentage error (MAPE). The results revealed that all models meet high accuracy (MAPE < 10%). However, the GSLRM was slightly more accurate (MAPE = 3.85%) than the competing models. Moreover, with a reasonable development coefficient value ($a \leq 0.3$), the GSLRM could be used for mid-long-term forecasts. Subsequently, the GSLRM was used to forecast MV for the next seven years (2013 – 2019). The forecast results showed that the total MV would increase continuously. In summary, the GSLRM proved its reliability and validity in forecasting the total MV in Kolhapur city, and it can assist the government in drafting relevant policies. Moreover, this study also attempted to investigate the relationship between the population and RMV growth and found that population could be one of the responsible factors.

1. Introduction

India has witnessed rapid growth in the transport sector, particularly in road transport, and it holds the lion's share in the country's gross domestic product (GDP). In 2011, the transport sector contributed about 6.5% to the nation's GDP, with road transportation having 4.7%, a significant share of it (MoRTH, 2012). Although the road transport sector boosts the Indian economy, it causes accidents and congestion (Jain and Dhiman, 2017). Moreover, motor vehicles (MV) have been identified as the primary source of air pollution (Sood, 2012) in many Indian urban areas, for example, Pune (Gidde and Sonawane, 2012), Bengaluru (Harish, 2012), Kolhapur (TERI, 2016), Delhi (Goyal et al., 2006; Shinde and Karjinni, 2019), and so on. Hence, predicting future MV is essential.

Over the last few years, in most states (districts, cities), consequently across India, the number of registered motor vehicles (RMV) has increased considerably. For example, in 2011, in terms of the total RMV, Maharashtra state ranked first in the country (MoRTH, 2012), and Kolhapur district ranked seventh in the state (Motor Vehicles Department Maharashtra, 2018). Maharashtra state is one of the most progressive states in India, and Kolhapur district is one of the most developed districts in the state. In 2011, with 3.5% of the state's gross domestic district product (GDDP), the district ranked sixth in the state (DES, 2016). Similarly, the city of Kolhapur is also famous in the state, which is situated along the banks of the Panchganga River and located in the extreme southern-western Maharashtra state, western India (Hunashal and Patil, 2011). It is one of the country's highest per capita income cities (Sathe et al., 2011). According to the census of 2011, the city has a 549236 population and a 66.82 km² geographical area (Directorate of Census Operations Maharashtra, 2014). The Kolhapur Municipal Corporation (KMC) administrates the city, and the Kolhapur Municipal Transport (KMT) renders the public bus transport (TERI, 2016).

Like the trend nationwide, the total RMV in Kolhapur city has

CORRESPONDENCE Sagar Maruti Shinde sagar.shinde@seti.edu.in Shivaji University, Kolhapur 416004, Maharashtra, India; Dept. of Civil Engineering, Sanjeevan Engineering and Technology Institute, Panhala 416201, Maharashtra, India

Bull. Mater. Sci. (2022) 45:68
https://doi.org/10.1007/s12034-021-02649-2

SILAR synthesis of SnO_2–ZnO nanocomposite sensor for selective ethanol gas

K S PAKHARE[1,2], B M SARGAR[1,*], S S POTDAR[3], U M PATIL[4] and R D MANE[5]

[1]DIST-FIST Sponsored Material Research Laboratory, Department of Chemistry, Jaysingpur College, Kolhapur 416101, India
[2]Department of Chemistry, Anandibai Raorane Arts, Commerce and Science College, Sindhudurg 416810, India
[3]Department of Physics, Sanjeevan Engineering and Technology Institute, Kolhapur 416201, India
[4]DST-INSPIRE Faculty, D. Y. Patil University, Kolhapur 416006, India
[5]Department of Physics, Jaysingpur College, Kolhapur 416101, India
*Author for correspondence (sargarbalasaheb@gmail.com)

MS received 30 August 2021; accepted 5 December 2021

Abstract. SnO_2–ZnO nanocomposite is synthesized at room temperature using the successive ionic layer adsorption and reaction (SILAR) method. The X-ray diffraction (XRD) patterns of annealed films confirms the formation of SnO_2–ZnO nanocomposite. Scanning electron microscopy depicts the porous agglomerated nanoparticle network-like structure of the SnO_2–ZnO nanocomposite. On the other hand, ZnO has a cauliflower shape, while SnO_2 has a distributed agglomerated nanoparticle-like morphology. Energy dispersive X-ray spectroscopy (EDS) confirms the elemental compositions of composite films. The reducing gases such as liquefied petroleum gas, ethanol, hydrogen sulphide and ammonia were detected using a SnO_2–ZnO nanocomposite sensor. Ethanol has a maximum sensitivity of 56.93% at a temperature of 275°C and a concentration of 24 ppm. In addition, as compared to a bare sensor, a composite sensor responds quickly. The *n–n* heterojunction at intergrain boundaries is responsible for better composite performance over bare sensors. Even at low gas concentrations, the SnO_2–ZnO nanocomposite sensor is found selective towards ethanol.

Keywords. SILAR method; XRD; TEM; porous network-like structure; ethanol sensor.

1. Introduction

The issue of air quality continues to be a significant concern around the world. Our health and the environment both depend on a reliable supply of air. The human nose is a sophisticated detecting organ that can distinguish between hundreds of different odours. Even yet, it fails to detect absolute gas concentrations of odourless gases. As a result, devices are urgently needed to detect hazardous gases to supplement or replace the human nose. There are numerous gas detection methods in use today [1–4]. High-performance gas sensors with high sensitivity, selectivity and response speed are still required to enhance gas detection levels.

Metal oxide semiconducting materials are the most common sensing materials, giving sensors many benefits such as high sensitivity and low cost. It is usually possible to classify metal oxides into (i) non-transition and (ii) transition oxides. The previous (e.g., Al_2O_3) exhibits elements with only one oxidation state because the formation of other oxidation states takes much more energy, while the latter (e.g., Fe_2O_3) contains more oxidation states [5]. Metal oxide semiconductors such as transition-metal oxides could form various surface oxidation states as compared to non-transition oxides. Transition-metal oxides with electronic configurations $d^{0\text{-}10}$ could be used more precisely [6]. Electronic configuration can find the d^0 structure in transition-metal oxides like V_2O_5, TiO_2, WO_3, and d^{10} occurs in post-transition metal oxides (e.g., SnO_2 and ZnO) [7]. Hence post-transition elements metal oxides ZnO and SnO2 were selected for the preparation of SnO_2–ZnO nanocomposite.

Metal oxides, such as SnO_2, ZnO, CuO, V_2O_5, WO_3, and TiO_2, can be utilized to detect combustible, reducing or oxidizing gases [8]. Recently, many research groups focused on nanocomposite materials such as CdO–ZnO, SnO_2–ZnO, ZnO–In_2O_3 for gas sensing applications [9–11]. Tin dioxide (SnO_2) and zinc oxide (ZnO) are widely valuable gas sensing materials. They both are *n*-type materials, and their electrical conductivity depends on the density on the surface of pre-adsorbed oxygen ions. According to their literature survey, the physical and chemical properties of SnO_2 and ZnO are versatile for gas sensing applications.

The synthesis method is also a crucial parameter. The use of SnO_2–ZnO composite materials is a good choice, since it alters the characteristics of materials to increase the

Published online: 07 April 2022

Bull. Mater. Sci. (2022)45:123
https://doi.org/10.1007/s12034-022-02716-2

Novel synthesis of perovskite $Gd_xAl_{1-x}O_3$ semiconductor by combustion route for selective LPG sensing

M C NAIK[1], S R BAMANE[2,*], K S PAKHARE[3] and S S POTDAR[4]

[1]Department of Chemistry, Smt. Kasturbai Walchanch College of Arts and Sciences, Sangli 416416, India
[2]Department of Chemistry, Sushila Shankarrao Gadhave Mahavidyalaya, Satara 412802, India
[3]Department of Chemistry, Anandibai Raorane Arts, Commerce and Science College, Vaibhavwadi 416810, India
[4]Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur 416201, India
*Author for correspondence (sambhajibamane00@gmail.com)

MS received 12 November 2021; accepted 24 March 2022

Abstract. Perovskite $GdAlO_3$ oxides were prepared by a simple and convenient solution combustion method. In synthesis, nitrates of gadolinium and aluminium were used as a precursor and that of urea and glycine was used as a specific fuel for the synthesis of $GdAlO_3$. Nitrates of Gd, Al and urea were taken in proper stoichiometric proportion to synthesize A1, A2 and A3. The obtained $GdAlO_3$ powder was sintered at 850°C temperature. The X-ray diffractometer patterns of samples confirm the formation of polycrystalline $GdAlO_3$ with an orthorhombic structure. The Williamson–Hall plot analysis confirms that the average particle size varies between 20 and 30 nm. The Fourier transform infrared spectral analysis confirms that the synthesized powder itself is phase pure. The field-emission scanning electron microscopy and transmission electron microscopy study reveals porous lump development over the substrate. The elemental composition of the samples was confirmed by energy-dispersive X-ray spectroscopy analysis. The bandgap energy of $GdAlO_3$ was varied between the ranges 3.80 to 3.90 eV. The gas sensing performance of $GdAlO_3$ was systematically examined for LPG, NO_2, NH_3 and H_2S for different operating temperatures and for various concentrations. The $GdAlO_3$ exhibits maximum sensitivity of 20.04% towards 100 ppm of LPG at temperature of 225°C.

Keywords. Combustion method; perovskite $GdAlO_3$; orthorhombic; porous nanoflakes; LPG sensing.

1. Introduction

In today's modern world, detection and monitoring of many hazardous and explosive gases have become key importance as far as air quality and safety of human being is concerned. The recent sensing technologies used solid-state gas sensors on account of their cost effectiveness and possibility of the extensive range of gases over which they can be applied, resulting in an improved air quality [1]. Recently, more research group focuses on new class of materials such as the perovskite type of materials (ABO_3), which has many technological applications owing to their excellent physical and chemical properties and structural diversity, adaptability, etc. These perovskite class of materials shows excellent chemical and thermal stability and hence used as gas and chemical sensors. The structural variety unlocks their path in a wide range of transport properties [2,3]. Additionally, they show exceptional morphological and structural stability, and hence they are more reliable for long-term performance for high-temperature sensor applications. The different forms of perovskite, such as stannates, titanates, nickelates, cobaltates, ferrites, have also been studied for the detection of environmental pollutants. Aono *et al* [4] synthesized perovskite $LnFeO_3$ (where, Ln = Sm, La, Nd, Gd and Dy) powders by carrying the thermal decomposition of heteronuclear complexes, $Ln[Fe(CN)_6]\cdot nH_2O$. The $SmFeO_3$ shows the highest sensitivity towards NO_2 gas. Huang *et al* [5] prepared rare-earth oxides $LaFe_{1-x}Zn_xO_3$ by utilizing sol–gel method. It was observed that, $LaFe_{0.77}Zn_{0.23}O_3$ is more sensitive towards formaldehyde with maximum sensitivity of 44.5 for 100 ppm concentration. Huang *et al* [6] synthesized Ce-doped $BaTiO_3$ nanoparticles by the co-precipitation method and decorated the $Ba_{0.99}Ce_{0.01}TiO_3$ sensor with α-Fe_2O_3. The Fe_2O_3-$Ba_{0.99}Ce_{0.01}TiO_3$ sensor exhibits enhanced gas response towards H_2S, even at very low concentrations of H_2S (400 ppb or lower), with lower operating temperature (150°C) and quick response and recovery time. The performance of perovskite sensors was also enhanced by doping with metal or metal oxide nanoparticles. Xiaofeng *et al* [7] successfully doped palladium ranging from 1 to 5 wt%, with $LaFeO_3$ perovskite and applied for the detection of acetone vapors. However, very little work has been reported for $GdAlO_3$ as gas sensors. Xiao *et al* [8] reported $GdAlO_3$-based sensor for NO*x* and got the highest response of 20.12 nA ppm^{-1} with excellent response and recovery

Published online: 02 July 2022

ORIGINAL ARTICLE

A C G publications

*Org. Commun.*15:1 (2022) 71-80

organic communications

Potassium ferrocyanide promoted an efficient synthesis of benzoxazoles and benzothiazoles under solvent free condition

Vishal S. Patil[1*], Dhanshri V. Patil[2] and Sachin S. Potdar[3]

[1]*Department of Chemistry, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, Maharashtra, India, 416201*
[2]*Department of Chemistry, Krishna Mahavidyalaya, Rethare Bk. Karad, Maharashtra, India, 415108*
[3] *Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, Maharashtra, India, 416201*

(Received December 03, 2021; Revised March 20, 2022; Accepted March 21, 2022)

Abstract: In the family of heterocycles that includes benzoxazoles and benzothiazoles, there exist compounds with a wide range of biological activity. Because of this characteristic, we designed a moderate and effective technique for the synthesis of 2-substituted benzoxazole and benzothiazole using condensation of aldehyde and 2-aminophenol or 2-aminothiophenol via oxidation of carbon-nitrogen bond. Potassium ferrocyanide catalyzed one-pot synthesis is efficient and provides for quick reaction times, simple set-up and high yields. As a result, we provide here a technique for the rapid solvent free synthesis of benzoxazoles and benzothiazoles. Some synthesized products were identified by ^{1}H-NMR, ^{13}C-NMR and MASS. The role of potassium ferrocyanide as a catalyst is represented by plausible reaction mechanism.

Keywords: Aldehyde; potassium ferrocyanide; benzoxazoles; benzothiazoles; solvent free.

1. Introduction

Benzoxazoles and benzothiazoles are frequent heterocyclic scaffolds in physiologically active and pharmaceutically relevant chemicals and they belong to a large family of molecules. Benzoxazoles are essential scaffolds in natural compounds[1-2] and drug development[3-5]. Benzoxazole compounds with appropriate substitutions have been shown to exhibit a variety of medicinal properties including antibacterial activity[6], antimicrobial[7-10], antiviral[11], topoisomerase I, II inhibitory[12], antitumor activities[13], anticancer agent[14-15] NSC-693638, L-697,661, antiviral[16] and antibacterial[17] UK-1, AJI9561. According to recent research, substituted 2-benzylbenzoxazoles exhibit antibacterial, antifungal[18], antimicrobial[19-21] and anti-measles virus[22] properties (Figure 1).

The tiny and simple benzothiazole nucleus is found in compounds with intriguing biological properties such as anticonvulsant[23-24], antimalarial[25], antitubercular[26], antimicrobial[27-28],antitumour[29-32], anthelmintic[33], anti-inflammatory, analgesic properties[34]. The benzothiazole ring may be found in a variety of natural substances, both marine and terrestrial, that have significant biological activity. Many natural products, such as epothilone-A, lyngbyabellin A, dolastatin 10 & bleomycin, include thiazole nucleus molecules[35]. The synthesis of these molecules is of significant interest due to their substantial medicinal value. Riluzole is a benzothiazole derivative-containing medication used to treat amyotrophic lateral sclerosis. In certain patients, it may postpone the need for a tracheostomy or a ventilator and it

*Corresponding author: E-Mail: vishalpatil.chem@gmail.com

The article was published by ACG Publications
http://www.acgpubs.org/journal/organic-communications © Jnauary-March 2022EISSN:1307-6175
DOI:http://doi.org/10.25135/acg.oc.121.2110.2242
Available online: March 27, 2022

A prototype model for detection and classification of landslides using satellite data

Akanksha Sharma[1], **Kamal Kumar Sharma**[2], **Suhas Gajanan Sapate**[3]

[1.]Research Scholar ,Department of Electronics and communication , Lovely Professional University, Jalandhar (P.B.), India. https://orcid.org/0000-0003-0353-2355
[2.] Professor, School of Electronics and Electrical Engineering, Lovely Professional University, Jalandhar (P.B.), India. https://orcid.org/0000-0002-6294-0829
[3.] Professor ,Department of Computer Science and Engineering, Annasaheb Dange College of Engineering and Technology, Ashta, Sangli (M.H.), India

Abstract. Landslides are natural and manmade disasters that cause threat to human life and lead to huge economic loss**.** Last few decade number of approaches have been developed for early detection of landslide for protecting life and saving properties. This paper proposes a prototype for an artificial intelligent model to detect and predict different types of landslides in hilly area with remote sensing techniques. All developing countries are following a steep increase in development of infrastructure like buildings, roads tunnels bridges railway tracks. Demand of connecting remote area is very high but on other side of environment it is also true that high demand of construction in morpho material area is causing many disasters like landslide. Landslide causes the loss of property and life so an early alarming will be help full for disaster management. Remotely sensed data pre-processed with artificial intelligent technologies will be helpful for landslide detection, creating landslide susceptibility map and inventory. Focus of this study is on enhancing the accuracy to detect landslide, list out the different features for extraction from satellite images and pre processing steps. This research also focuses on application of robust early prediction of type of landslide. This research will help in detection of landslide early to protect economical losses and human lives.

1. Introduction

In hilly terrains like Utrakhand , Himachal Pradesh landslides are one of the major natural disasters which take place in all the seasons , Some time because of rainy weather , some after snowfall and some time because of the fragile nature of rock forming mountains . By survey of Building Material & Technology Promotion council (BMPTC) & TARU data landslide hazard probability is divided into three categories: Low, Medium and High.[1] Landslide Hazard zonation Atlas claims that 8% of entire area of Himachal Pradesh is under high risk zone and by revised methodology Expert knowledge 3.2%area is under high risk and AHP indicate 5.65% area is under high risk zone. In mountain areas landslides are most dangerous geological hazard.[2]

Landslides are rapid movement of flow of material downward and outward. It is the movement of mass rocks, debris or earth down a slope under the influence of gravity. The size and shape of ditched mass depends on the nature of discontinuities in the rock, degree of weathering and steepness of slope. Material in landslide mass is rock, solid or both[3].Landslide can be initiated by many natural

Past, Present and Future of Automated Mammographic Density Measurement for Breast Cancer Risk Prediction

Shivaji D. Pawar
Research Scholar, Department of Computer Science and Engineering, Lovely Professional University, Jalandhar (PB), India and Assistant Professor , SIES Graduate School of technology
https://orcid.org/0000-0002-6817-3026

Pratibha T. Joshi
Research Scholar, School of Electronics and Electrical Engineering Lovely Professional University, Jalandhar (PB), India and Assistant Professor ,SIES Graduate School of technology
https://orcid.org/0000-0001-5103-2481

Vishwayogita A. Savalkar
Research Scholar, Department of Computer Science and Engineering, Lovely Professional University, Jalandhar (PB), India and Assistant Professor, SIES Graduate School of technology
https://orcid.org/0000-0001-9043-3675

Kamal Kr. Sharma
Professor, School of Electronics and Electrical Engineering, Lovely Professional University, Jalandhar (PB), India.
https://orcid.org/0000-0002-6294-0829

Suhas G. Sapate
Professor, Department of Computer Science and Engineering, Annasaheb Dange College of Engineering and Technology, Ashta, Sangli (MH), India
https://orchid.org/0000-0002-4755-695X

Corresponding Author: pratibha.t.joshi@gmail.com

Abstract: Mammography is one of the essential screening technologies which is helpful to save the lives of women against breast cancer. Prediction of breast cancer from mammograms is not reached on its optimal level; hence there is a constant enhancement in clinical applications for mammographic breast density measurement. Optimal results in breast density measurement can be helpful to provide better care for women who have dense breasts. The sensitivity of digital mammograms reduces significantly in case dense breast, which may lead further to hide the cancerous lesions and may be converted into high stage breast cancer. Many research innovations and clinical applications are developed to support radiologists for the second opinion and predict breast cancer risk in advance. But still, there is an unsolved research question: which one is “dense breast” and which screening modularity is suitable for the dense breast to avoid the risk of breast cancer. Hence, currently, radiologists measure mammographic breast density with the help of BI-RADS classification, which is subjective.

Available at www.sciencedirect.com
ScienceDirect
journal homepage: www.elsevier.com/locate/bbe

Original Research Article

Segmentation of pectoral muscle from digital mammograms with depth-first search algorithm towards breast density classification

Shivaji D. Pawar [a,*], *Kamal Kr. Sharma* [b], *Suhas G. Sapate* [c], *Geetanjali Y. Yadav* [d]

[a] *Department of Computer Science and Engineering, Lovely Professional University, Jalandhar (P.B.), India*
[b] *School of Electronics and Electrical Engineering, Lovely Professional University, Jalandhar (P.B.), India*
[c] *Department of Computer Science and Engineering, Annasaheb Dange College of Engineering and Technology, Ashta, Sangli (M.H.), India*
[d] *Lifeline Hospital Musaffah Abu Dhabi, United Arab Emirates*

ARTICLE INFO

Article history:
Received 2 March 2021
Received in revised form
25 July 2021
Accepted 23 August 2021
Available online 4 September 2021

Keywords:
Breast cancer
Depth-first search
Mammographic breast density
Pre-processing
Pectoral muscle removal

ABSTRACT

Digital mammography acts as a unique screening technology to protect the lives of females against breast cancer for the past few decades. Mammographic breast density is a well-known biomarker and plays a substantial role in breast cancer prediction and treatments. Breast density is calculated based on the opacity of fibro-glandular tissue reflected on digital mammograms concerning the whole area of the breast. The opacity of pectoral muscle and fibro-glandular tissue is similar to each other; hence, the small presence of the pectoral muscle in the breast area can hamper the accuracy of breast density classification. Successful removal of pectoral muscle is challenging due to changes in shape, size, and texture of pectoral muscle in every *MLO and LMO views of* mammogram. In this article, the depth-first search (DFS) algorithm is proposed to remove artifacts and pectoral muscle from digital mammograms. In the proposed algorithm, image enhancement is performed to improve the pixel quality of the input image. The whole breast as a single connected component is identified from the background region to remove the artifacts and tags. The depth-first search method with and without the heuristic approach is used to delineate the pectoral muscle, and then final suppression is performed on it. This algorithm is tested on 2675 images of the DDSM dataset, which is further divided into four density classes as per BIRADs classification. Segmentation results are calculated individually on each BIRADs density class of the DDSM dataset. Results are validated subjectively by the expert's Radiologist's ground truth with segmentation accuracy and objectively by the Jaccard coefficient and a dice similarity coefficient. This algorithm is found robust on each density class and provides overall segmentation accuracy of 86.18%, a mean value of Jaccard index, and a Dice similarity coefficient of 0.9315 and 0.9548, respectively. The experimental results show that the proposed algorithms applied for pectoral muscle removal follow the ground truth marked by an expert radiologist. The proposed algorithm can be part of the pre-processing

* Corresponding author at: Department of Computer Science and Engineering, Lovely Professional University, Jalandhar (P.B.), India.
E-mail addresses: shivaji.41800386@lpu.in (S.D. Pawar), kamal.23342@lpu.co.in (K.Kr. Sharma).
https://doi.org/10.1016/j.bbe.2021.08.005

J Mater Sci: Mater Electron (2021) 32:2088–2102

Active cooling system for efficiency improvement of PV panel and utilization of waste-recovered heat for hygienic drying of onion flakes

Vinayak H. Deokar[1,2,*], Rupa S. Bindu[1], and S. S. Potdar[3]

[1] Department of Mechanical Engineering, Dr. D. Y. Patil Institute of Technology, Pune, India
[2] Department of Mechanical Engineering, Sanjeevan Engineering and Technology Institute, Panhala, India
[3] Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, India

Received: 18 October 2020
Accepted: 25 November 2020
Published online: 2 January 2021

ABSTRACT

In the modern age, photovoltaic panel (PV) is a popular option for solar energy conversion. The PV panel's efficiency considerably depends on the parameters like dust or dirt on the surface and the cell operating temperature. As the cells operating temperature exceeds more than 25 °C, the PV panel's efficiency decreases by 0.4% for every degree centigrade rise in temperature. The higher cell operating temperature causes hot spots on the PV panel, drastically reducing the PV panel's life. There are different methods used for cooling of PV panel, but the utilization of waste heat recovered for further application is not reported. In this context, this research work proposes an active cooling system using thermal grease and M.S chips for effective cooling of the PV panel, and simultaneously heat rejected during cooling of the panel is being used for solar thermal drying. The proposed active cooling system using thermal grease and M.S chips showed promising results at 5.2 m/s air velocity. The average voltage and average electrical efficiency of the cooled PV panel was improved by ~ 4.0% and 12.3%, respectively, than the non-cooled PV panel. The cooled PV panel's cell operating temperature was reduced by 16.1 °C compared to non-cooled PV panel, and 1400 g onion flakes were dried hygienically in time 10 h 30 min.

Nomenclature

PV	Photovoltaic
STC	Standard testing condition
TWh	Terawatt-hour
m_a	Mass flow rate of air (kg/s)
v	Velocity of air (m/s)
σ	Density of air (kg/m^3)
w	Width of duct (m)
h	Height of duct (m)
m	Parametric constant (m^{-1})

Address correspondence to E-mail: deokarvinay@gmail.com

https://doi.org/10.1007/s10854-020-04975-3

RASĀYAN *J. Chem.*
Vol. 14 | No. 4 |2711-2719| October- December | 2021
ISSN: 0974-1496 | e-ISSN: 0976-0083 | CODEN: RJCABP
http://www.rasayanjournal.com
http://www.rasayanjournal.co.in

SYNTHESIS AND CHARACTERIZATION OF MACRO-POROUS Gd_2O_3-ZnO NANOCOMPOSITE SENSOR FOR NO_2 GAS DETECTION

M. C. Naik[1], S. R. Bamane[2,✉], K. S. Pakhare[3] and S. S. Potdar[4]

[1]Department of Chemistry, Smt. Kasturbai Walchand College of Arts and Science, Sangli (Maharashtra), India

[2]Department of Chemistry, Sushila Shankarrao Gadhave Mahavidyalaya, Khandala, Satara -412802 (Maharashtra), India

[3]Department of Chemistry, Anandibai Raorane Arts, Commerce and Science College, Vaibhavwadi, Sindhudurg- 416810, (Maharashtra), India.

[4]Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur-416201, (Maharashtra),India

✉Corresponding Author: sambhajibamane00@gmail.com

ABSTRACT

A simple solution combustion technique was used to manufacture Gd_2O_3-ZnO nanocomposite successfully. The presence of different peaks in sample XRD patterns confirms the formation of a Gd_2O_3-ZnO nanocomposite. According to the Debye-Scherrer formula, the typical crystallite size ranges from 26 to 34 nm. Microstrain and dislocation density both rose from Z1 to Z4, according to thorough microanalysis. A well-organized spongy network with pore sizes ranging from 50 nm to 800 nm was produced, according to the FE-SEM and TEM research. EDS analysis was used to determine the quantitative analyses of the materials. The optical study shows the bandgap of the Z1 to Z4 thin film was varied between the range of 3.20 to 3.25 eV. The sensing nature of Gd_2O_3-ZnO nanocomposite was thoroughly examined for NO_2 at various temperatures and concentrations. Enhanced sensitivity of 24.79% is observed for 60 ppm of NO_2 at 200ºC for sample Z2. Also, the quick response of 27sec was noted.

Keywords: Combustion Method, XRD, Microstrain Analysis, FE-SEM, TEM, EDS, Gas Sensing, etc.

RASĀYAN *J. Chem.*, Vol. 14, No.4, 2021

INTRODUCTION

Numerous hazardous gases such as CO, NOx, CH_4, *etc* emit into the environment due to rapid industrialization and some domestic reasons. Among them, NOx class of gases is more hazardous as far as a human health concern. NO_2 emissions are primarily exhausted gas from boilers and automobiles. It is highly annoying and corrosive to the lung tissue and, after inhalation, riskier.[1] Henceforth, the Development of sensors that detect NO_2 at very low concentration and enhance sensitivity becomes key importance in concern with biological and environmental issues. On account of this much research, groups focused on developing a new variety of materials that gives better results in terms of sensitivity towards NO_2 gas.[2-5] However, ZnO-based sensors synthesized by different routes are extensively applied as NO_2 sensing elements.[6-7] Gd_2O_3 has another promising agent in sensing devices owing to their exceptional physical and physicochemical properties. It exhibits n-type conductivity with a large bandgap. But it has seldom been used as a gas sensor to date.

Another unique approach for enhancing sensing performance is synthesizing composite metal oxide sensors since the morphologies can be customized by modifying the atomic ratio of an individual element. Sensing properties of binary oxides TiO_2-WO_3[8], ZnO-CuO[9], CdO-ZnO[10] have been reported. Composite oxides can be synthesized by employing different techniques such as electrospinning[11], sol-gel [12], hydrothermal[13], CBD[14], *etc.* Combustion synthesis is a simple and convenient way of producing a wide variety of nanomaterials, catalysts, *etc*. Also, the synthesis of different nanostructures with [illegible]

Silicon
https://doi.org/10.1007/s12633-021-01548-9

ORIGINAL PAPER

Optimization and Prediction on the Mechanical Behavior of Granite Particle Reinforced Al6061 Matrix Composites Using Deer Hunting Optimization Based DNN

Koli Gajanan Chandrashekhar[1] · D. P. Girish[2] · Katkar Ajit Ashok[1]

Received: 26 August 2021 / Accepted: 11 November 2021

Abstract
The enhancement in the mechanical characteristics of aluminum alloy is always an essential need for the development of industrial technologies. The work presented is focused on the development of Al6061 composite reinforced with granite particles using the stir casting technique at four different proportion rates such as 2%, 4%, 6%, and 8% of granite particles. The developed composites were subjected to heat treatment as per T6 temperature conditions for different aging time durations (1 to 9 h). The mechanical characteristics such as hardness, ultimate tensile strength, and yield strength analysis are performed for both the casted and heat-treated granite reinforced aluminum specimens. Deer hunting optimization (DHO) is used to optimize the better-reinforced aluminum alloy from the heat-treated and heat untreated specimens. Besides, the hybrid deep neural network (DNN) is used to predict the experimented mechanical characteristics and compared with other similar predicted neural networks. Such optimization and prediction behavior are performed in Matlab software. From the experimentation, the hardness is better for heat-treated Al6061 reinforced with 8% of granite particles, besides the yield and the ultimate tensile strength is optimal for 6% granite reinforced Al6061. The proposed DNN-DHO provides nearer values to the experimented mechanical characteristics with minimal error than the predicted outcomes of Particle swarm optimization (PSO) based DNN and DNN alone. The DNN-DHO predicted optimal mechanical characteristics are 68.45 BHN of hardness, 199.67 MPa of ultimate tensile strength, and 100.01 MPa of yield strength. From the overall findings, heat-treated Al6061 with 6% and 8% granite offers superior mechanical properties.

Keywords Aluminium metal matrix composites · Deer Hunting optimization (DHO) · Deep neural network (DNN) · Granite · And reinforcement

1 Introduction

Aluminum alloy-based metal matrix composites are more effective in several industrial applications because of their attractive mechanical, tribological, and physical properties [1]. Most of the engine components are made up of aluminum alloys such as engine cover, connecting rods, pistons, brakes, and cylinder liners, etc. due to their lightweight and good mechanical properties. However, the alloys of aluminum are known for their softness and high wear rate, which are undesirable for many applications. Keeping their disadvantages and increasingly demanding working conditions in mind, many researchers across the world are developing aluminum alloy-based metal matrix composites [2, 3]. Lightweight reinforcements like TiB_2, TiC, TiO_2, SiC, Si_3N_4, B_4C, Al_2O_3, and carbon-based nanomaterials are used to reinforce aluminum alloys to obtain high hardness and strength [4]. Most of these reinforcements are lightweight, capable of withstanding high temperature, possess high hardness, high compressive, and tensile strength values [5]. After the addition of these various reinforcements into their respective aluminum matrices, they resulted in a significant increase in hardness and strength values. Granite particles are also efficient reinforced materials for improving the mechanical activities of Al6061 alloy [6]. This is because of its toughness behavior and ability to withstand wear

✉ Koli Gajanan Chandrashekhar
gckoli@gmail.com

[1] Department of Mechanical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, MH, India

[2] Mechanical Engineering Department, Government Engineering College, Ramanagara, Karnataka, India

Published online: 15 January 2022

Journal of Thermal Engineering
Web page info: https://jten.yildiz.edu.tr
DOI: 10.18186/thermal.990701

Research Article

Simulation modeling and experimental validation of solar photovoltaic PMBLDC motor water pumping system

Vinayak DEOKAR[1,2,*], **Rupa S. BINDU**[1], **Tejashri DEOKAR**[2]

[1]*Dr. D. Y. Patil Institute of Technology, Pune, India*
[2]*Sanjeevan Engineering and Technology Institute, Panhala, India*

ARTICLE INFO

Article history
Received: 24 December 2019
Accepted: 04 August 2020

Key words:
Renewable energy; Photovoltaic panel; Simulation; Solar PMBLDC motor water pumping system; Error analysis

ABSTRACT

Solar energy is abundantly available on the earth and can be utilized in various applications by converting it in a suitable form. Water supply in remote places and rural areas is still critical due to the unavailability of the grid power. In a developing country like India, the grid construction cost is 6670 $/km because of which some remote areas are still waiting for electricity. There is a large scope to meet this need with the help of a standalone solar water pumping system. In this context, this work presents detailed simulation in MATLAB/Simulink and experimental validation of photovoltaic (PV) permanent magnet brushless DC (PMBLDC) motor water pumping system without energy storing. Simulation is a tool to get system behavior at the various input parameters immedi ately reflects a change in the output parameter. The simulation results are validated with the help of field trials on the experimental setup. A 0.5 hp photovoltaic permanent magnet brushless DC (PMBLDC) motor water pumping system was used for extensive field trials experimentation. After extensive field trials, the optimum irradiation observed for full water discharge 19.9 L/min was 330 W/m^2 where voltage and current were 35.1 V and 3.1 A respectively. The Water flow – Irradiation characteristic curve and percentage variation in simulation and experimental results showed a good agreement with each other. The efficiency of the photovoltaic panel and the entire solar water pumping system observed was 12.76 ± 0.64 % and 9.07± 0.45 % respectively. The 0.5 hp PMBLDC motor water pumping system is sufficient to lift 10000 L water every day. PMBLDC motor, shown added advantage of lesser running maintenance due to the absence of carbon brushes which need frequent replacement in case of brushed DC motor.

Cite this article as: Deokar V, Bindu RS, Deokar T, Simulation modeling and experimental validation of solar photovoltaic pmbldc motor water pumping system. J Ther Eng 2021;7(6):1392–1405.

INTRODUCTION

A rapid increase in industrialization and population has almost doubled the energy demand of India. India's total installed capacity is 349.3 GW as on 31 January 2019, in which thermal energy contribution is 63.7 %, Nuclear is 1.93 %, hydro energy 12.85 %, and contribution of renewable energy is 21.14 % [1]. To meet India's huge power requirement, the sustainable solution is maximizing

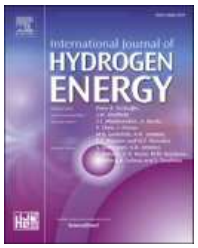
***Corresponding author.**
*E-mail address: deokarvinay@gmail.com

This paper was recommended for publication in revised form by Regional Editor Mustafa Kılıç

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/he



Enhancement of heat and mass transfer characteristics of metal hydride reactor for hydrogen storage using various nanofluids

*Rahul U. Urunkar**, *Sharad D. Patil*

Department of Mechanical Engineering, RIT, Rajaramnagar, Affiliated to Shivaji University, Kolhapur, Maharashtra, India

HIGHLIGHTS

- Developed and validated numerical model of metal hydride reactor for hydrogen storage.
- Selected various nanofluids for heat and mass transfer enhancement.
- Presented performance for Al_2O_3/H_2O, CuO/H_2O and MgO/H_2O nanofluid.
- Reported 10% improvement in the heat transfer rate for CuO/H_2O nanofluid.
- Absorption time is lowered by 9.5% for given conditions.

ARTICLE INFO

Article history:
Received 20 January 2021
Received in revised form
7 March 2021
Accepted 11 March 2021
Available online 16 April 2021

Keywords:
Hydrogen
Metal hydride
$MmNi_{4.6}Al_{0.4}$
Nanofluid
Heat transfer

ABSTRACT

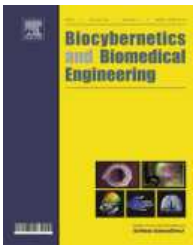
The execution of metal hydride reactor (MHR) for storage of hydrogen is greatly affected by thermal effects occurred throughout the sorption of hydrogen. In this paper, based on different governing equations, a numerical model of MHR filled by $MmNi_{4.6}Al_{0.4}$ is formed using ANSYS Fluent for hydrogen absorption process. The validation of model is done by relating its simulation outcomes with published experimental results and found a good agreement with a deviation of less than 5%; hence present model accuracy is considered to be more than 95%. For extraction or supply of heat, water or oil is extensively used in MHR during the absorption or the desorption process so as to improve the competency of the system. Since nanofluid (mixture of base fluid and nanoparticles) has a higher heat transfer characteristics, in this paper the nanofluid is used in place of the conventional heat transfer fluid in MHR. Further the numerical model of MHR is modified with nanofluid as heat extraction fluid and results are presented. The Al_2O_3/H_2O, CuO/H_2O and MgO/H_2O nanofluids are selected and simulations are carried out. The results are obtained for different parameters like nanoparticle material, hydrogen concentration, supply pressure and cooling fluid temperature. It is seen that 5 vol% CuO/H_2O nanofluid is thermally superior to Al_2O_3/H_2O and MgO/H_2O nanofluid. The heat transfer rate improves by the increment in the supply pressure of hydrogen as well as decrement in temperature of nanofluid. The CuO/H_2O nanofluid increases the heat transfer rate of MHR up to 10% and the hydrogen absorption time is improved by 9.5%. Thus it is advantageous to use the nanofluid as a heat transfer cooling fluid for the MHR to store hydrogen.

* *Corresponding author.*
E-mail addresses: rahul.urunkar1991@gmail.com (R.U. Urunkar), sharad.patil@ritindia.edu, p2sharad@yahoo.co.in (S.D. Patil).
https://doi.org/10.1016/j.ijhydene.2021.03.090

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/bbe



Original Research Article

Breast cancer diagnosis using abnormalities on ipsilateral views of digital mammograms

Suhas Sapate [a,c,*], Sanjay Talbar [a], Abhishek Mahajan [b], Nilesh Sable [b], Subhash Desai [b], Meenakshi Thakur [b]

[a] SGGS Institute of Engineering & Technology, Nanded, Maharashtra, India
[b] Department of Radiodiagnosis, Tata Memorial Centre, Parel, Mumbai, Maharashtra, India
[c] Dept. of CSE, Ashokrao Mane Group of Institutions, Vathar, Kolhapur, Maharashtra, India

ARTICLE INFO

Article history:
Received 26 October 2018
Received in revised form
23 April 2019
Accepted 29 April 2019
Available online 18 May 2019

Keywords:
Breast cancer
Digital mammograms
Ipsilateral views
Radiomic features
Image-based sensitivity
Case-based sensitivity

ABSTRACT

Ipsilateral views of digital mammograms help radiologists to localize and confirm abnormal lesions during diagnosis of breast cancers. This study aims at developing algorithms which improve accuracy of computer-aided diagnosis (CADx) for analyzing breast abnormalities on ipsilateral views. The proposed system is a fusion of single and two view systems. Single view approach detects and characterizes suspicious lesions on craniocaudal (CC) and mediolateral oblique (MLO) view separately using geometric and textural features. Lesions detected on each view are paired with potential lesions on another view. The proposed algorithm computes the correspondence score of each lesion pair. Single view information is fused with two views correspondence score to discriminate malignant tumours from benign masses using the SVM classifier. Performance of SVM classifier is assessed using five-fold cross validation (CV), Kappa metric and ROC analysis. Algorithms are applied to 110 pairs of mammograms from local dataset and 74 pairs from open dataset. Single view scheme yielded image-based sensitivity of 91.63% and 88.17% at 1.35 and 1.51 false positives per image (FPs/I) on local and open dataset respectively. Single view classification yielded FPs/I of 1.03 and 1.20 with sensitivity of 70%. Fusion based two views scheme using SVM classifier produced average case-based sensitivity of 75.91% at 0.69 FPs/I and 73.65% at 0.72 FPs/I on local and open dataset respectively. Fusion of single view features with two view correspondence score leads to improved case-based detection sensitivity. Proposed fusion based approach results into accurate and reliable diagnosis of breast abnormalities than single view approach.

* *Corresponding author at*: SGGS Institute of Engineering & Technology, Nanded, Maharashtra 431606, India.
E-mail address: sapatesuhas@sggs.ac.in (S. Sapate).

https://doi.org/10.1016/j.bbe.2019.04.008
0208-5216/

J Mater Sci: Mater Electron (2020) 31:20932–20944

Nanostructured CdO–ZnO composite thin films for sensing application

A. K. Sharma[1], S. S. Potdar[2,*], K. S. Pakhare[3], U. M. Patil[4], V. S. Patil[5], and M. C. Naik[6]

[1] School of Physics, Shri Mata Vaishno Devi University, Kakryal, Katra, J&K 182320, India
[2] Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, MS 416201, India
[3] Department of Chemistry, Anandibai Raorane Arts, Commers and Science College, Dist-Sindhudurg, Vaibhavwadi, MS 416810, India
[4] Centre for Interdisciplinary Research Studies, D.Y. Patil University, Kolhapur 416006, India
[5] Department of Chemistry, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, MS 416201, India
[6] Smt. Kasturbai Walchanch College of Arts, Commerce and Sciences, Sangli, MS 416416, India

Received: 18 June 2020
Accepted: 4 October 2020
Published online: 16 October 2020

ABSTRACT

CdO–ZnO nanocomposites were synthesized by the facile SILAR method. In synthesis, 0.1 M Cd $(NO_3)_2$ and 0.1 M Zn $(NO_3)_2$ were used as sources of Cadmium and Zinc ions, respectively. The supersaturated solutions of Cd and Zn ions served as a cationic bath while 0.075 M NaOH as an anionic bath. To synthesize composite samples, the number of dipping is varied as 1:1, 1:2, and 1:3 concerning (CdO–ZnO). The XRD patterns of composite samples exhibit distinct peaks of ZnO and CdO, which clearly indicates the formation of CdO–ZnO nanocomposites in thin film form. The FE-SEM shows interlocked sheets with a thickness varies from ~ 30 nm to 300 nm for composites. EDAX mapping and XPS study, confirms that the obtained nanocomposite is actually composed of CdO and ZnO. The gas sensing behavior of CdO–ZnO is systematically investigated for 4 test gases under different operating temperatures and different gas concentrations. The maximum response of 52.04% is obtained for 24 ppm of Ethanol at a minimum operating temperature of 325 °C.

1 Introduction

Currently, a great deal of research is concentrated on the development of gas sensors for monitoring and detection of toxic gases. Numerous materials have been investigated for gas sensor applications. The development of fast and sensitive gas sensors with small cross-sensitivity is the subject of intense research in the field of nanoscience and nanotechnology. However, developments in nanotechnology create a window for the synthesis of unique classes of nanostructured materials with enhanced gas sensing properties. The metal oxide semiconductors are attracted significant interest in the industrial and

Address correspondence to E-mail: sachinpotdar20@gmail.com

https://doi.org/10.1007/s10854-020-04607-w

Energy & Buildings 199 (2019) 455–460

Contents lists available at ScienceDirect

Energy & Buildings

journal homepage: www.elsevier.com/locate/enbuild

Heterogeneous composites for low and medium temperature thermal insulation: A review

Kushal G. Ambli[a,*], Bhimanagoud M. Dodamani[a], Jagadeesh A.[a], Mohan B. Vanarotti[b]

[a] Hirasugar Institute of Technology, Nidasoshi, 591236, India
[b] Sanjeevan Engineering and Technology Institute, 416201, Panhala, India

ARTICLE INFO

Article history:
Received 19 January 2019
Revised 9 July 2019
Accepted 12 July 2019
Available online 12 July 2019

Keywords:
Thermal conductivity
Composites density
Binders
Degradable reinforcement
Mechanical properties

ABSTRACT

Materials for composites play a prominent role in various applications, especially when thermal behavior is of major concern. The purpose of this review article is to consolidate research carried out in the field of low and medium temperature thermal insulators, particularly polymer-based composites which are amorphous in nature and inherently offer lower thermal conductivity; thereby the limitations of basic engineering materials in thermal resistance can be overcome by the development of different composites. Apart from thermal resistance, in comparison with conventional materials, composites offer advantages such as higher strength, durability, manufacturability, compactness and low cost. This article deals with distinct composites and their experimental aspects having a lower thermal conductivity, summarize various key aspects highlighted by the researchers along with the techniques used. A significant variation in thermal conductivity can be observed based on the fillers of different non-degradable and biodegradable materials possessing different mechanical properties since the density of fillers plays an important role in determining thermal conductivity and mechanical properties.

1. Introduction

The continuous innovations in the materials emphasized the requirement to develop the composites to attain various mechanical properties without compromising in the required strength. The prior requirement of composites in pursuit of developing a better material is in the field of thermal insulation. Much of the work in composites is carried out in structural elements but not in thermally resistive materials. There are three basic kinds of materials for thermal applications which are polymer based, metal-based and ceramic-based composites, which have a drastic change in thermal conductivity in comparison. Polymer-based composites conduct less heat and fail at higher temperatures, metal-based composites have higher density when compared with polymer-based composite, although metallic composites have high strength to weight ratio, the thermal conductivity is also high, because of this reason the metallic composites cannot be used in lower thermal conductivity applications, ceramic-based composites can sustain higher temperatures, have increased thermal conductivity at temperatures around 300 °C [1]. Ceramics lack in strength, which makes them not suitable in conditions where materials are subjected to higher or intermediate stress and strain.

2. Working temperature, thermal and mechanical properties of insulating materials

Most of the insulation materials can be categorized in three groups based on temperature ranges for which they are used.

- **Low Temperature Insulations ranging from 30 °C up to 90 °C**

These materials are used in insulating applications for building insulations, refrigeration systems, cold and hot liquid storage systems etc. This category comprises of commonly used materials like Cork, Wood, Cellulose, Mineral Fibers, Polyurethane, Expanded Polystyrene etc.

- **Medium Temperature Insulations ranging from 90 °C up to 325 °C**

These materials are used in insulating applications for heating equipment, steam lines, flue ducts etc. This category comprises of materials like Mineral Fibers, Asbestos, 85% Magnesia, Calcium Silicate etc.

- **High Temperature Insulations ranging from 325 °C and above**

These materials are used in oven dryer, super heated steam system, furnaces etc. Very few materials are capable of handling high temperatures, the most extensive materials used in these categories are Calcium Silicate, Mica and Vermiculite based insulation, Asbestos, Fireclay or Silica based insulation and Ceramics.

* Corresponding author.
E-mail address: kushalambli@gmail.com (K.G. Ambli).

https://doi.org/10.1016/j.enbuild.2019.07.024
0378-7788/

Journal of ELECTRONIC MATERIALS, Vol. 48, No. 10, 2019
https://doi.org/10.1007/s11664-019-07419-9

Facile Synthesis of Nano-Diced SnO_2–ZnO Composite by Chemical Route for Gas Sensor Application

K.S. PAKHARE,[1,2] B.M. SARGAR ,[1,6] S.S. POTDAR,[3] A.K. SHARMA,[4] and U.M. PATIL[5]

1.—DIST-FIST Sponsored Material Research Laboratory, Department of Chemistry, Jaysingpur College, Jaysingpur, Tal- Shirol, Kolhapurx, MS 416101, India. 2.—Anandibai Raorane Arts, Commerce and Science College, Vaibhavwadi, Sindhudurg, MS 416810, India. 3.—Department of Physics, Sanjivan Engineering and Technology Institute, Panhala, Kolhapur, MS 416201, India. 4.—School of Physics, Shree Mata Vaishno Devi University, Kakryal, Katra, JK 182301, India. 5.—Department of Physics, Center for Interdisciplinary Research Study, D.Y. Patil University, Kolhapur, MS 416006, India. 6.—e-mail: sargarbalasaheb@gmail.com

The simple chemical bath deposition (CBD) method is used to synthesize SnO_2–ZnO nanocomposite at room temperature. Formation of SnO_2–ZnO nancomposite is confirmed by the x-ray diffraction (XRD) pattern of annealed films. Scanning electron microscopy (SEM) micrographs of nanocomposite SnO_2–ZnO depict that morphological change from nanocubes to manifold hexagonal nanorods with an increase in ZnO content in a composite sample. Also, pure SnO_2 sample exhibits interconnected nanospheres. Electron dispersive spectroscopy (EDS) is employed to confirm elemental compositions in composite films. SnO_2–ZnO samples were applied as a sensor for different test gases, namely liquified petroleum gas (LPG), ethanol, ammonia (NH_3), and hydrogen sulfide (H_2S). The maximum response of 59.67% is observed for ethanol at an operating temperature of 275°C and 24 ppm gas concentration. Also, a composite sensor shows a quick response in comparison with a bare sensor. This superior performance of composite over pure sensor may be attributed to a n–n heterojunction at intergrain boundaries. The SnO_2–ZnO sensor is found to be selective towards ethanol even at lower gas concentrations.

Key words: Chemical bath deposition method, XRD, SEM, gas sensor

INTRODUCTION

Nowadays, solid-state gas sensors are mostly operative tools to detect a concentration of toxic, hazardous, pollutant and combustible gases in atmospheres. Such solid-state semiconductor gas sensors based on metal oxides have been widely used. The *n*-type material with relatively little oxygen adsorption sites available is suitable for sensing application due to a created range of a conduction barrier such as zinc oxide (ZnO) and tin oxide (SnO_2).[1,2] Many other oxides like CdO, In_2O_3, WO_3, ZnO, SnO_2 and CeO_2, have been examined to enhance the sensitivity, gas response and selectivity[3–9] Besides this, stability of material, cheapness, controlled industrial use of gas sensor devices and gas response at lowermost operating temperature conditions are the big challenges in this field. Recently, nano-composites are attracting attention to overcome such problems. Such type of sensors were suggested to improve thermal properties since they contain many heterogenous interfaces between different phases reliability ZnO(n)–CuO(p), SnO_2(n)–CuO(p), SnO_2(n)–ZnO(n) composites showed enhanced sensitivities from single phase materials[10,11] CdO–ZnO, SnO_2–ZnO, SnO_2–In_2O_3, WO_3–ZnO, CuO–NiO, In_2O_3–ZnO[12–17] have been previously reported to be promising selective and

(Received February 21, 2019; accepted July 2, 2019; published online July 10, 2019)

Materials Science-Poland, 37(1), 2019, pp. 25-32
http://www.materialsscience.pwr.wroc.pl/
DOI: 10.2478/msp-2019-0002

Influence of bath temperature on microstructure and NH_3 sensing properties of chemically synthesized CdO thin films

A.K. SHARMA[1], S.S. POTDAR[2,*], M.A. YEWALE[3], DEEPAK B. SHIRGAONKAR[4], K.S. PAKHARE[5], B.M. SARGAR[6], M.V. ROKADE[7], U.M. PATIL[8]

[1]School of Physics, Shri Mata Vaishnodevi University, Kakryal, Katra-182320, J&K, India
[2]Department of Physics, Sanjeevan Engineering and Technology Institute, Panhala-416201, MS, India
[3]Department of Physics, New Arts, Commerce and Science College, Parner, Ahmednagar, MS, India
[4]Department of Physics, Ashokrao Mane Group of Institution, Vathar, Kolhapur, MS, India
[5]Department of Chemistry, Anandibai Raorane Art, Commerce and Science College, Vaibhavwadi, MS-416810, India
[6]Material Science Research Laboratory, Department of Chemistry, Jaysingpur College, Jaysingpur, MS -416101, India
[7]Semiconductor Laboratory, Centre for Materials for Electronics Technology (C-MET), IDA Phase-III, Cherlapally, HCL (PO), Hyderabad-500051, India
[8]Centre for Interdisciplinary Research, D.Y. Patil Education Society (Deemed to be University), Kolhapur-416006, India

Cadmium oxide (CdO) thin films were synthesized using chemical bath deposition (CBD) method from aqueous cadmium nitrate solution. The bath temperatures were maintained at room temperature (25 °C) and at higher temperature (80 °C). The structural studies revealed that the films showed mixed phases of CdO and $Cd(OH)_2$ with hexagonal/monoclinic crystal structure. Annealing treatment removed the hydroxide phase and the films converted into pure CdO with cubic, face centered crystal structure. SEM micrographs of as-deposited films revealed nanowire-like morphology for room temperature deposited films while nanorod-like morphology for high temperature deposited films. However, cube-like morphology was observed after air annealing. Elemental composition was confirmed by EDAX analysis. Band gap energies of the as-deposited films varied over the range of 3 eV to 3.5 eV, whereas the annealed films showed band gap energy variation in the range of 2.2 eV to 2.4 eV. The annealed films were successfully investigated for NH_3 sensing at different operating temperatures and at different gas concentrations. The room temperature synthesized film showed a response of 17.3 %, whereas high temperature synthesized film showed a response of 13.5 % at 623 K upon exposure to 24 ppm of NH_3.

Keywords: *CdO thin films; chemical bath deposition; X-ray diffraction; scanning electron microscopy; optical properties; EDAX; gas sensing*

1. Introduction

Detection of toxic gases, pollutants, combustive and process gases is important for system and process control, safety monitoring and environmental protection. Traditional analysis methods used in gas sensing include gas chromatography, Fourier-transform, infrared spectroscopy, mass spectrometry etc. These methods are complex and also require sample preparation, so that on-line, real-time analysis is difficult. However, gas sensors based on solid state semiconductor materials offer considerable advantages over other gas sensing methods. The great interest of industrial and scientific fields in semiconductor oxide gas sensors comes from their numerous advantages, such as small size, improved sensitivity towards low concentrations (at a level of ppm or even ppb) for a wide range of gaseous chemical compounds, possibility of on-line monitoring and low cost. Also, semiconductor sensors are easy to miniaturize, robust, reliable, and can be designed to operate over a range of conditions including high temperatures. Semiconductor sensors can be produced in arrays to allow sensing of multiple species simultaneously. Transparent semiconducting

*E-mail: sachinpotdar20@gmail.com

Indian Journal of Chemistry
Vol. 58A, November 2019, pp. 1187-1193

A novel FRET probe for determination of fluorescein sodium in aqueous solution: Analytical application for ophthalmic sample

Dhanshri V Patil[a,*] & Vishal S Patil[b]

[a]Department of Chemistry, Krishna Mahavidyalaya, Rethare Bk 415 108, Maharashtra, India
[b]Department of Chemistry, Sanjeevan Engineering & Technology Institute, Panhala 416 201, Maharashtra, India
Email: dtp.phy@gmail.com

Received 7 March 2019; revised and accepted 15 October 2019

Fluorescent pyrene nanoparticles (PyNPs) have been prepared by a reprecipitation method in the presence of sodium dodecyl sulphate (SDS) as a stabilizer. The formation of PyNPs has been confirmed by dynamic light scattering (DLS), UV-visible absorption spectroscopy, fluorescence spectroscopy and excited state lifetime measurements. DLS results of PyNPs shows a narrow size distribution with average particle size of 77.4 nm and negative zeta potential. The systematic FRET experiments performed by measuring fluorescence quenching of PyNPs with successive addition of FL-Na analyte exploited the use of PyNPs as nanoprobe for detection of FL-Na in aqueous solution. The fluorescence of PyNPs has been quenched by Fl-Na and quenching has been in accordance with the Stern-Volmer relation. The distance r between the donor (PyNPs) and acceptor (FL-Na) molecules has been obtained according to the fluorescence resonance energy transfer. The fluorescence quenching results have been used further to develop an analytical method for estimation of fluorescein sodium from ophthalmic samples available commercially in the market.

Keywords: Fluorescent pyrene nanoparticles, Fluorescein sodium, Fluorescence resonance energy transfer

Fluorescein sodium (FL-Na), also called uranine, is a non-toxic, low molecular weight and highly water-soluble dye, shows the physical property of fluorescence and commonly used as a quantitative fluorophore for studying different tissues of the eye[1-3]. Fl-Na shown in Fig. 1 is extensively used as a diagnostic tool in the field of ophthalmology and optometry. It is available as sterile single use sachets containing lint-free paper applicators soaked in Fl-Na[4]. It has a pK_a of 6.4 and its ionization equilibrium leads to pH-dependent absorption and emission over the range of 5 to 9. It can exist in seven prototropic forms, each of which possesses its own distinct spectral properties[5]. In neutral solutions, such as water and methanol (which also act as polar solvents) it exists mainly as dianion. It is widely used as fluorophore in the biosciences and as a fluorescent tracer for many applications[6]. Few methods have been used for detection and estimation of dyes[7-9]. A direct fluorimetric method requires separating the analyte from interfering constituents in the samples and having absorption in the region of analyte molecule. By contrast the fluorescence quenching/enhancement methods have high sensitivity and more simple detection and do not need separation of analyte molecules from other interfering constituents[10-13]. Therefore, the development of sensitive and selective sensors for FL-Na is of current interest.

Fluorescent organic nanoparticles (FONs) of low molecular weight functional compounds found special interest because of high variability and flexibility in materials and method of nanoparticles preparation[14-15]. Organic nanoparticles (ONs) occupy the intermediate state between isolated molecules and the bulk crystal. It is observed that most of the fluorescent organic materials belonging to the class of polynuclear aromatic hydrocarbons (PAHs) are water insoluble and gives their monomer emission in lower wavelength regions. PAHs are used as a fluorescent probe for the fluorescence quenching process[16-18]. Among the PAHs, Perylene and Pyrene are popular because of their large lateral π-orbital stacking between molecules and are most widely used probes

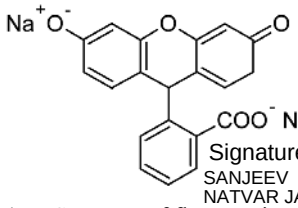


Fig. 1 — Structure of fluorescein sodium

Journal of Alloys and Compounds 754 (2018) 56–63

Contents lists available at ScienceDirect

Journal of Alloys and Compounds

journal homepage: http://www.elsevier.com/locate/jalcom

Electrochemical synthesis of CuS_xSe_{1-x} thin film for supercapacitor application

M.A. Yewale [a, b, *], A.K. Sharma [a], D.B. Kamble [a, d], C.A. Pawar [a], S.S. Potdar [a], S.C. Karle [c]

[a] Thin Film, Earth and Space Science Laboratory, Department of Physics, Shivaji University, Kolhapur, India
[b] Department of Physics, New Arts Commerce and Science College, Ahmednagar 414001, India
[c] Department of Electronic Science, New Arts Commerce and Science College, Ahmednagar 414001, India
[d] Ashokrao Mane Group of Institutions, Faculty of Engineering, Vathar, Kolhapur, India

ARTICLE INFO

Article history:
Received 17 January 2018
Received in revised form
16 April 2018
Accepted 18 April 2018
Available online 20 April 2018

Keywords:
CuS_xSe_{1-x} thin films
Electrodeposition
X-ray diffraction (XRD)
Scanning electron microscopy (SEM)
Energy dispersive analysis X-Ray (EDAX)
Supercapacitor

ABSTRACT

The CuS_xSe_{1-x} thin films were deposited on conducting substrates using copper sulphate sodium thiosulfate and selenium dioxide as a source of Cu, S, and Se by electrodeposition(ED) technique. The effect of the change in composition S and Se the structural and electrical properties of the CuS_xSe_{1-x} thin films was studied. The crystallite size, composition, microstructure, contact angle and capacitance studied using XRD, EDAX, SEM, CA, and CV. The X-Ray diffraction (XRD) graph reveals that the CuS_xSe_{1-x} films were polycrystalline in nature and $CuS_{0.6}Se_{0.4}$ shows crystallite size of 34 nm, Energy dispersive analysis X-Ray (EDAX), scanning electron microscopy (SEM) show the elemental composition and microstructures were changes with S and Se composition. The $CuS_{0.6}Se_{0.4}$ film show 31° contact angle and specific capacitance of 159 F/g.

1. Introduction

CuS and CuSe are vital p-type semiconductors, they are used in various applications such as solar cells [1,2], Supercapacitor [3], photo-catalysts [4–6] Li-ion batteries [7], medical devices [8,9], gas sensors [10] due to their good optical, electrical, chemical, physical and biochemical properties. These properties of material were depend on surface morphology [11,12]. The precise preparation of CuS and CuSe are assumed to be essential for extensive requests. Specially, preparation of nano rods, nanogranuals, nano flakes-of CuS and CuSe have extensive requests in recent years.

Cu-S-Se is a ternary semiconducting material have interesting physical, chemical and optical property over a binary. The properties of the ternary material are changed with altering the atomic composition [13]. Gopi et al. [14] prepared the CuS electrode to improved photovoltaic efficiency in QDSCs. Solar cell shows highest efficiency 4.67% in sulfide and poly sulfide electrolyte. Sabah et al. [15] synthesized multi-layered CuS thin film by spray pyrolysis method. Flower like microstructure cover whole surface of the substrate films which is found to exhibit the high recovery and response time for hydrogen and other gas sensing. Gosavi et al. [16] prepared the CuSe films with the help of SGT method. XRD study show polycrystalline nature. Grain size is 145 nm, band gap is 2.03 eV and roughness of CuSe film is 13.1 nm. Electrical properties displayed film were utilised in optoelectronic application. Gao et al. [17] synthesized a series of CuS_xSe_{1-x} in non-aqueous medium by reflux method. The synthesis mode is useful for the CuS_xSe_{1-x} ternary material with a different content of sulfur and selenium compositions. X-ray data shows that lattice parameter deviates with variation of sulfur and selenium content. Optical spectra reveals that absorption changes according to deviation of chemical content. CuS_xSe_{1-x} ternary material were display very good photocatalytic activity for photodegradation of RhB in aqueous solution, decomposition is dependent on composition of compound. $CuSe_{1-x}S_x$ nanoflakes have effectively been prepared by Ni et al. [18] using copper chloride, Selenium and Sulfur powder as precursor materials through hydrothermal method. FESEM study reveals that for composition in $CuSe_{1-x}S_x$ hexagonal nanoflakes shows the same morphologies in the range 200–600 nm while the thickness is 15–50 nm and all nanoflakes have smooth surfaces. The band gap energy of $CuSe_{1-x}S_x$ nanoflakes was altered by change in sulfur and

* Corresponding author. Thin film, Earth and Space Science Laboratory, Department of Physics, Shivaji University, Kolhapur, India.
E-mail address: maneshphd@gmail.com (M.A. Yewale).

https://doi.org/10.1016/j.jallcom.2018.04.208
0925-8388/

Computer Methods and Programs in Biomedicine 163 (2018) 1–20

Contents lists available at ScienceDirect

Computer Methods and Programs in Biomedicine

journal homepage: www.elsevier.com/locate/cmpb

Radiomics based detection and characterization of suspicious lesions on full field digital mammograms

Suhas G. Sapate[a,d,*], Abhishek Mahajan[b], Sanjay N. Talbar[a,c], Nilesh Sable[b], Subhash Desai[b], Meenakshi Thakur[b]

[a] Centre of Excellence in Signal & Image Processing, SGGS Institute of Engineering & Technology, Nanded, Maharashtra, India
[b] Department of Radiodiagnosis, Tata Memorial Centre, Parel, Mumbai, Maharashtra, India
[c] Department of E&TC, SGGS Institute of Engineering & Technology, Nanded, Maharashtra, India
[d] Department of CSE, Ashokrao Mane Group of Institutions, Vathar, Kolhapur, Maharashtra, India

ARTICLE INFO

Article history:
Received 18 May 2017
Revised 11 May 2018
Accepted 15 May 2018

Keywords:
Breast cancer
Digital mammogram
Fuzzy region growing
Radiomic features
Geometric features
Textural features

ABSTRACT

Background and objective: Early detection is the important key to reduce breast cancer mortality rate. Detecting the mammographic abnormality as a subtle sign of breast cancer is essential for the proper diagnosis and treatment. The aim of this preliminary study is to develop algorithms which detect suspicious lesions and characterize them to reduce the diagnostic errors regarding false positives and false negatives.

Methods: The proposed hybrid mechanism detects suspicious lesions automatically using connected component labeling and adaptive fuzzy region growing algorithm. A novel neighboring pixel selection algorithm reduces the computational complexity of the seeded region growing algorithm used to finalize lesion contours. These lesions are characterized using radiomic features and then classified as benign mass or malignant tumor using *k*-NN and SVM classifiers. Two datasets of 460 full field digital mammograms (FFDM) utilized in this clinical study consists of 210 images with malignant tumors, 30 with benign masses and 220 normal breast images that are validated by radiologists expert in mammography.

Results: The qualitative assessment of segmentation results by the expert radiologists shows 91.67% sensitivity and 58.33% specificity. The effects of seven geometric and 48 textural features on classification accuracy, false positives per image (FPsI), sensitivity and specificity are studied separately and together. The features together achieved the sensitivity of 84.44% and 85.56%, specificity of 91.11% and 91.67% with FPsI of 0.54 and 0.55 using *k*-NN and SVM classifiers respectively on local dataset.

Conclusions: The overall breast cancer detection performance of proposed scheme after combining geometric and textural features with both classifiers is improved in terms of sensitivity, specificity, and FPsI.

1. Introduction

Breast cancer has become one of the major diseases affecting women population across the world over the past several decades [1]. The annually estimated number of new incidences of breast cancer in India is approximately 155,000 out of which more than 76,000 women are dying and more than 60% of women are diagnosed very late [2]. Late presentation due to poor awareness and lack of screening facilities are the major causes behind increasing incidences of breast cancer especially in younger women in India. The gap between the number of incidences and the rate of survival is widening continuously [3]. This fact has necessitated the need to work on early detection of breast cancer on priority. The different imaging modalities such as X-ray, Ultrasound, PET/CT, MRI, etc. have become an indispensable part of the management of cancer patients for detection, diagnosis, and treatment of cancerous tumors [4]. The molecular functional imaging is being integrated with molecular medicines using 'radiomics' for better and improved understanding of tumor biology. Radiomics is extraction and analysis of quantitative features of abnormal lesions identified as cancer indicators on medical images. These quantitative features are known as radiomic features which include geometric and textural features [5]. Even after the recent technological advancements on biomarkers such as mRNA and microRNAs, mammography is the most reliable cost-effective imaging modality. Also it is still serving the purpose of early detection of non-malignant and non-palpable risk biomarkers. These biomarkers include atypical lobular hyperplasia (ALH), atypical ductal hyperplasia (ADH),

* Corresponding author at: Centre of Excellence in Signal & Image Processing, SGGS Institute of Engineering & Technology, Nanded, Maharashtra, India.
E-mail address: sapatesuhas@sggs.ac.in (S.G. Sapate).

https://doi.org/10.1016/j.cmpb.2018.05.017
0169-2607/

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

AN AUTOMATIC MCQ & SUMMARY GENERATION BY USING NLP

Harshada Patil[*1], Aarti Gaikwad[*2], Mitali Dalave[*3], Sneha Surywanshi[*4], Prof. Pallavi Patil[*5]

[*1,2,3,4]Student, Department of Computer Science and Engineering. SETI, Panhala, Kolhapur, Maharashtra, India.

[*5]Assistant Professor, Department of Computer Science and Engineering, SETI, Panhala, Kolhapur, India

ABSTRACT

Assessments and Evaluations are going through a gigantic upset. Colleges, universities, and other instructive organizations are progressively moving towards on the web assessments. The example of appraisal is significantly moving towards the objective appraisal for example MCQ based, it is exceptionally hard to build and demands a lot of investment for setting various inquiries. There's a developing requirement for an expense viable and time-proficient computerized MCQ age framework. In this paper, the text is first summed up utilizing the BERT calculation, and likewise sentence planning is finished creating MCQs. To create decisions for the questions, distractors are created utilizing wordnet (A lexical data set for English). As the BERT calculation has much better execution over other inheritance techniques also as it can process a lot of information quicker than expected, it will upgrade the speed of creating MCQs from given text. Text summarization is defined as generating a short, accurate, and fluent summary. which is extremely valuable in a few certifiable applications. In this paper, we proposed. In this paper, we proposed an extractive synopsis model called ClinicalBertSum, which depends on BERT

Key Words: NLP, MCQs, BERT, Wordnet, Distractors generator, Summary.

I. INTRODUCTION

All organizations, universities, and schools have been changed to online learning. Appraisal is a fundamental apparatus to test the information on the understudies. Whats more, the example of the appraisal has changed from abstract based to objective based i.e. Multiple Choice Questions (MCQs). Automatic multiple-choice question generation (MCQG) is a useful still challenging task in Natural Language Processing (NLP). It is the task of automatic generation of correct and relevant questions from textual data. So the problem is, it is very difficult for the teachers to set the questions as well as for the students who are preparing for competitive exams. The web resources on the Internet (e.g. websites, user reviews, news, blogs, social media networks, etc.) are gigantic sources of textual data. Besides, there is a wealth of textual content on the various archives of news articles, novels, books, legal documents, biomedical documents, scientific papers, etc. The textual content on the Internet and other archives grow exponentially on a daily basis.

In summary generation there are many repeated or unimportant portions of the resulting texts. Therefore summarizing and condensing the text resources becomes urgent and much more important. Manual summarization is an expensive task and consumes a lot of time and effort. Practically, it is very difficult for humans to manually summarize this huge amount of textual The Automatic Text Summarization (ATS) is the key solution to this issue. This paper tells about a framework that produces questions automatically. In Automated MCQ Generator, questions are produced automatically with the assistance of NLP. The text of any area is given as contribution to the framework which is then summed up utilizing the BERT algorithm. Main task is generating relevant distractors. Distractors are produced utilizing the wordnet approach. Wordnet is a Programming interface used to get the right feeling of the word. So the great and appealing distractors are produced. This framework solves the problem of manual creation of Questions, Summary and reduces time consumption and cost.

II. PROPOSED SYSTEM DESIGN

In the Proposed System we are going to discuss detailed Knowledge about this project our project we use the python Flask for Backend for that we created python flask enviorment In our system we generate summary and Mcq by using the after that we generate Questions also we were able to create distractors for MCQ and we verified are different stages involved in this process as shown in fig.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

PROJECT THE EXECUTIVES WEB APPLICATION

Vaibhavi Dhangar[*1], Supriya Sutar[*2], Nikita Kumbhar[*3], Vivek Bhaskar[*4], Akshaykumar Bhore[*5], Prof. Pallavi Patil[*6]

[*1,2,3,4,5]Student, Department Of Computer Science And Engineering, SETI, Panhala, Kolhapur, Maharashtra, India.

[*6]Asst. Professor, Department Of Computer Science And Engineering, SETI, Panhala, Kolhapur, Maharashtra, India.

ABSTRACT

Some of the most spectacular and expensive project failures in modern history have been brought on by the software industry's unprecedentedly fast growth. The methods and techniques used in software development projects for risk management may be better understood by examining how project management is presented in academic journals. Effective project use is essential to maintain competitiveness because project-based outcomes have become the norm for most organizations. Aspects of the use of project management tools and efficient project management continue to be misunderstood, despite technological advancements and a focus on leadership and understanding effective teamwork. By performing a non-experimental content analysis, this project offers the best web application tool available to those in charge of software development projects.

Keywords: Project Management, Software Development, Tasks.

I. INTRODUCTION

These days, the market for software products is flooded with a variety of facilities that implement network-planning techniques, from massive professional systems to systems that efficiently manage your working time, finances, and resource allocations.

The principal undertakings of the organization ,which carries out the venture the board techniques are:

1. An organization's business processes being automated.
2. To register the software with a specific corporation.
3. The incorporation of software.
4. A corporation's staff's training.

A web-based project management and issue tracking system called PRESIDENCY can be tailored to support any kind of business process or workflow. This includes elements of an agile methodology for teams developing software.

The grouping of tasks into brief development cycles known as sprints is the foundation of the agile methodology. Runs regularly last somewhere in the range of two and a month. Each sprint concludes with a review meeting to make sure the team has achieved its objectives, followed by a retrospective meeting to reflect and identify ways to advance. Any issues that remain are added to the backlog so they can be assigned to upcoming sprints.

Gathering functional requirements and usage scenarios, establishing the project's scope, and organizing the sprints are the first steps in a scrum project. The team gathers to rank the stories and designate the most important tasks for the initial sprint.

Calendar

Time Sheet

Portfolio

Test Management

View

Sign on

Traceability

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

MODI LIPI HAND WRITTEN CHARACTER RECOGNITION USING CONVOLUTIONAL NEURAL NETWORKS (CNN)

Adesh Patil[*1], Nikhil Kamble[*2], Rohit Lohar[*3], Asim Mujawar[*4], Mayuresh Phalle[*5], Prof. S. A. Babar[*6]

[*1,2,3,4,5]Students, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala Maharashtra, India

[*6]Professor, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala Maharashtra, India

DOI : https://www.doi.org/10.56726/IRJMETS40141

ABSTRACT

An ancient Indian script from Maharashtra is called MODI. During Chhatrapati Shivaji Maharaj's rule, this script was frequently used to create official documents. The structural characteristics of MODI make character recognition challenging, and there is no image database. In this study, we built a CNN model for character recognition and extended the dataset of the MODI script using data augmentation methods. Due of the low picture dataset multiple images provided by the MODI script, we added data to the dataset and trained the CNN model on a created dataset. About 91.62% of the time, the trained model correctly recognizes Handwritten MODI characters.

Keywords: Convolutional Neural Network, Data augmentation techniques, Deep Learning algorithms, Word recognition, Image Processing.

I. INTRODUCTION

Modi Is A Brahmi-Based Script That Is By And Large Used For Writing Marathi. Modi Script Was Once Regularly Used Till 1950 When All And Sundry Switched To The Devanagari Script. The Modi Script Used To Be Used To Write Reputable Documents, Cultural Literature, And Spiritual Books. However, Most Men And Women Are Unaware Of The Script. The Find Out About In This Paper Targeted On Handwritten Persona Identification Andtransliteration To Marathi Script. The Modi Script Dates Again To The Twelfth Century And Used To Be Used Till The Twentieth Century. Shivkalin And The Peshava Kalin Kingdom Have Each Used Modi Script. As Time Passed, Quite A Number Modifications Have Been Made To The Varieties Of Writing Of Modi. In The Twelfth Century, Modi Script Used To Be Referred To As "Adyakalin", And In The Thirteenth Century, It Advanced As A New Script Regarded As "Yadav Kalin". The "Bahamanikalin" Of The 14th-16th Centuries Is The Subsequent Section Of Development, Observed Through The "Shiva Kalin" Of The Seventeenth Century. Modi's Last Stage Is Associated To English Rule And Is Regarded As "Anglakalin". From 1818 To 1952, This Fashion Of Writing Used To Be In Use.

Modi Used To Be Additionally Used In Basic College Textbooks Posted In The Nineteenth And Twentieth Century. Then Devanagari Script Commenced To Exchange Modi Script In The Twentieth Century. The Bombay Presidency Determined On July 25, 1917, To Substitute The Modi Script With The Bal Bodh Fashion Of Devanagari As The Main Administration Script For Ease And Consistency With The Different Areas Of The Presidency.

Thousands Of Modi Archives Have Been Saved In South Asia And Europe. Due To The Presence Of These Europeans In Tanjore, Pondicherry, And Different South Asian Locations At Some Stage In The Nineteenth Century, The Majority Of These Are Saved In A Number Archives In Maharashtra, Though Lesser Collections Are Saved In Denmark And Different Nations. The Earliest Surviving Modi Record Is From The Early Seventeenth Century. While The Majority Of Modi Papers Are Authentic Letters, Land Registry, And Different Administrative Documents, Earlier Than The 1950s, The Script Was Once Additionally Utilized In School, Journalism, And Different Everyday Activities.

Modi Script Customers Are Presently Publishing Books And Publications In The Script On A Normal Basis. Several Groups Presently Grant Modi Tutorials, Ranging From Weekend Workshops Held Via The Maharashtra State Department Of Archives To Legitimate Publications Supplied Through Bharat Itihas Samshodhak Mandal

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

SECURE FILE STORAGE AND TRANSFER USING CLOUD

Suyog Khutale*1, Viraj Patil*2, Shivam Rajmane*3, Pratik Shinde*4, Shubham Raykar*5, Prof. Samrat Babar*6

*1,2,3,4,5Student, Department of Computer Science and Engineering, SETI, Panhala, Kolhapur, Maharashtra, India.

*6Assistant Professor, Department of Computer Science and Engineering, SETI, Panhala, Kolhapur, Maharashtra, India.

ABSTRACT

In today's interconnected world, file transfer is a fundamental requirement for businesses and individuals a like. However, the transfer of sensitive and confidential files requires additional security measures to ensure confidentiality, integrity, and availability. In this paper, we propose a secure file transfer mechanism over the cloud using Angular, Node.js, MongoDB, and AWS S3. The proposed system utilizes RSA and AES algorithms for key transfer and pairing to provide secure and confidential file transfers. The system also stores user data and files securely on AWS S3, making it scalable, cost-effective, and easily accessible from any location. The system's modular architecture and optimized rendering engine ensure high performance and a user-friendly experience.

Keywords Secure file transfer, cloud, RSA, AES, Angular, Node.js, MongoDB, AWS S3

I. INTRODUCTION

File transfer is an essential requirement for many applications, including cloud-based services, e-commerce, and online collaboration tools. However, the transfer of sensitive and confidential files requires additional security measures to prevent unauthorized access, tampering, or interception. Traditional file transfer mechanisms such as FTP, HTTP, and SMTP are not secure enough to transfer sensitive data over the internet. Therefore, there is a need for a secure and reliable file transfer mechanism that can ensure the confidentiality, integrity, and availability of data. Cloud computing has emerged as a popular solution for providing scalable and cost-effective computing resources over the internet. Cloud-based file storage and transfer services such as Dropbox, Google Drive, and AWS S3 have become widely popular due to their ease of use, accessibility, and scalability. Ensuring the security of such services has become an increasingly pressing issue, particularly given the handling of confidential and sensitive information. In this paper, we propose a secure file transfer mechanism over the cloud using Angular, Node.js, MongoDB, and AWS S3. The proposed system utilizes RSA and AES algorithms for key transfer and pairing to provide secure and confidential file transfers. The system also stores user data and files securely on AWS S3, making it scalable, cost-effective, and easily accessible from any location. The system's modular architecture and optimized rendering engine ensure high performance and a user-friendly experience.

II. SYSTEM DESIGN

The proposed system is made of three main components: front-end development using Angular, development of back-end using Node.js, and file storage and transfer using AWS services.

III. SYSTEM ARCHITECTURE

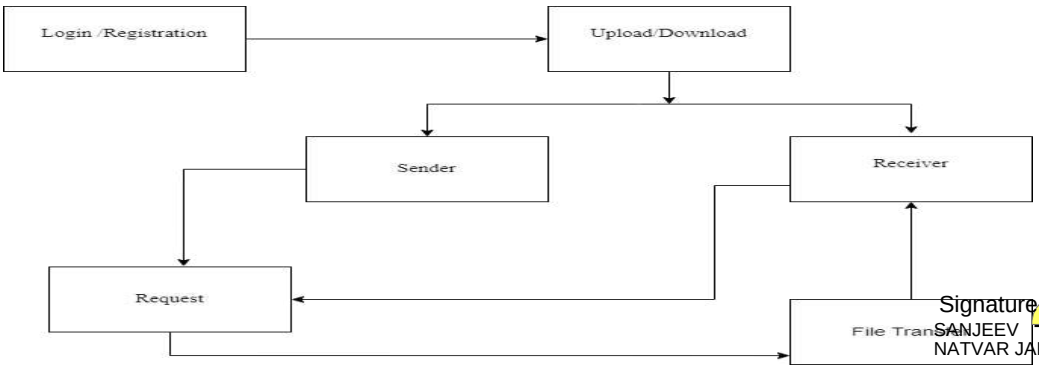


Figure 1: System Architecture

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 06 | June - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

Solar Powered Electric Vehicle

Yogesh Ramchandra Naik, Prafullchandra Datattatray Ingole , Satej Shahaji Patil, Shailesh Nanaso Harugade, Mainodeen Kalandar Peerjade, Somnath krishndev sonvane, Omkar Ashok Kapase , vaibhav chandrakant vibute, Prachit Nandkumar Patil, samgram sanjay parit, Sushant vijay bahadure

Eletrical Engineering (SETI , PANHALA) Kolhapur,

India

Abstract— In the current scenario, global warming is a threat to the society. One of the major reasons is the release of carbon-di-oxide from an automobile exhaust due to the combustion of fossil fuels which pollutes the environment. One of the optimistic solutions for this problem is to use of hybrid vehicles. Generally, Hybrid vehicle involves a combination of transmission system driven through electrical, solar as well as internal combustion (IC) engine. This work involves hybridization with solar power and conventional power IC engine. Hence it is called a Hybrid Solar Vehicle (HSV). It can be driven both on internal combustion engines as well as on solar energy assisted with electrical motor. In real life applications using solar vehicle produces zero emissions. At present, hybrid electric vehicles are being developed and launched into the market. For long distance travelling its necessary of periodic charging of their batteries, so these vehicles are depending the electrical sources also leads to increase the cost of electricity. These kinds of problems will be solved by using hybrid solar vehicle also HSV supporting to the green environment.Introduction

Keywords- solar car , solar energy , batteries , eletrical

This template, modified in MS Word 2007 and saved as a –Word 97-2003 Document‼ for the PC, provides authors with most of the formatting specifications needed for preparing electronic versions of their papers. All standard paper components have been specified for three reasons: (1) ease of use when formatting individual papers, (2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and (3) conformity of style throughout a conference proceedings. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

I. INTRODUCTION

The whole world is moving with automobiles. Huge amount of fossil fuels are burned for automobiles. Nothing on earth is free of cost, but what if we could find a way to implement free rides? Indeed, it would be wonderful if our cars could peculiarities. cars could continue to run without us having to spend billions on fossil fuels every year and to deal with natural hazards that their combustion leave behind., the entire proceedings, and not as an independent document. Considering the availability and pollution of fossil fuels we need a substitute. The best substitute is electric vehicles which will not create any pollution to environment. The main impediment is the storage capacity of electric power, the ride is restricted up to battery capacity. This storage issue can be beaten by adding solar power.

PRINCIPAL
Sanjeevan Engg. & Tech. Institute
Somwar Peth, Panhala - 416 201

SANJEEVAN ENGG. & TECH. INSTITUTE PANHALA

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 06 | June - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

EV CHARGING STATION WITHOUT USING BATTERY

N.S.Jadhav[1], Aditya Bhuyekar [2], Rajvardhan Patil[3], Renu Bhole[4], Rabiya Mulla[5], Devraj Dalavi[6]
Pranali Kamble[7], Prajakata Sasawade[8], Neha Kulkarni[9],
Professor, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra[1]
Students, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra[2,3,4,5,6]

Abstract: The Solar Charging stations for charging electric bikes and electric motorcycle is a fundamental and practical application of using solar PV modules to convert solar energy to DC voltage .This project will enable us to acquire an essential foundation toward show to design and build the solar PV systems for various applications. Based on the available components, the target of this pilot project is to build solar charging station .Station is for charging electric bikes. The design consideration will be discussed in the following sections. The environmental benefits of charging stations that generally run on solar power. Reduced dependence on fossil fuels. The load on conventional grids also gets reduced in a suitable way.

Keywords : harvest, erected , interdisciplinary etc.

I INTRODUCTION

Population wise India stands second inside the global. The primary source of earnings for maximum of the population remains farming in India. Current agriculture systems are operated manually which consumes huge amount of time, cash and power. In India there is massive difference among overall electricity deliver & demand to the farming. In many regions strength reduce down maintains for extra than 8hrs.[1] The current era makes use of fossil gasoline in many elements of India, which creates air pollution. So, it higher to use renewable supply of electricity authorities also encourages its use in various sectors, including automation irrigation gadget for the farming. Solar power is the maximum ample source of power inside the world solar electricity isn't always simplest an answer to today strength crisis but also an environment pleasant shape of power photovoltaic generation is and efficient approach for the use of the sun strength.[2]
The environmental blessings of charging stations that commonly run on sun energy. Decreased dependence on fossil fuels, Every day jogging expenses honestly are for all intents and purposes lower in a suitable way.[3] The load on traditional grids also receives reduced in a main manner. Apart from this, pretty large scale implementation will boom employment opportunities without a doubt because of the need for educated human beings for installation, preservation and operation of those stations, virtually opposite to famous notion. Considering the blessings and the supply of the sort of system, pretty many corporations actually are making an investment on this concept, which within reason considerable. Tesla Motors, a subsidiary of Tesla. The critical part is building solar-powered charging stations in handy locations for its EV clients, which is quite considerable.[4] This assignment will similarly efforts to reducing our dependence on fossil fuels. If our charging station can price greater devices without having outside strength from the countrywide grid, it will likely be capable of lessen a number of the call for electricity. Most of the peoples aware about the outcomes of the use of oil and herbal gas as a shape of strength. These strategies do create masses of electricity, however they may be non-renewable and they effects in broken the environment and earth environment.[5] The objective of this undertaking is to rate the vehicles environmentally secure in an effort to assist to lessen the demand of strength from different techniques. Our goal for this task will generate electricity from sun energy.
Our layout changed into confined to what assets had been available for us. Luckily, the majority of the device for this device became provided through our main and the Electrical Engineering Department. We firstly estimated a much larger system with a couple of sun panels and batteries to offer a quick price time for the electric car. [6]We ended up the use of best 444W, 12 sun panels and 40 Ah deep cycle.

 DOI: 10.55041/IJSREM24050

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 05 | May - 2023 SJIF 2023: 8.176 ISSN: 2582-3930

ELECTRICAL ENERGY AUDIT OF "SANJEEVAN KNOWLEDGE CITY"

Abhijeet Sharad Patole[1], Kapil Hari Patil[2], Chinmay Umesh HIremath[3], Abhishek arun Jadhav[4], Priti Dilip Sankapal[5], Shweta Sanjay Mole[6], Swati Bandopant Jadhav[7], Prof. V.T. Metkari[8]

[1]Student, dept. of Electrical Engineering, Sanjeevan Engineering & Technology institute, Panhala, Kolhapur
Asst. Prof. Dept. of Electrical Engineering Sanjeevan Engineering & technology institute, Panhala, Kolhapur

---

Abstract - A sincere effort has been made in this report to conduct an energy audit at Sanjeevan Knowledge City and estimate the amount of energy used every day, week, and month. A thorough energy audit was conducted to identify the areas of energy waste and estimate the potential for energy savings throughout the entire campus. A thorough analysis of the data gathered is also performed, and cost-effective measures to increase energy efficiency are suggested. Each suggested action has an estimated cost of implementation. The outcome and important data produced by these actions are documented. The energy auditing is a consumption indicator that normalizes the current energy crisis by encouraging saving.

1.INTRODUCTION

An electrical energy audit is a systematic evaluation of the energy consumption, efficiency, and utilization of electrical systems and equipment in a facility or organization. It involves a detailed analysis of electricity consumption patterns, power distribution, and energy management practices. The goal of an electrical energy audit is to identify opportunities for energy savings, improve overall energy efficiency, and reduce operating costs. During an energy audit, trained professionals assess various aspects of the electrical system, such as lighting, HVAC (heating, ventilation, and air conditioning), motors, appliances, and control systems. They measure energy consumption, analyze equipment performance, identify energy ENlosses, and evaluate the effectiveness of energy management strategies. The audit findings provide valuable insights into areas of energy wastage, inefficiencies, and potential upgrades or retrofits that can lead to energy savings. Recommendations may include adopting energy-efficient lighting, optimizing motor systems, improving insulation, implementing power factor correction, or utilizing renewable energy sources.

2. METHODOLOGY

There are generally three types of electrical energy audits:

1.Preliminary Energy Audit: Also known as a walk-through audit, this type of audit involves a visual inspection and basic data gathering to identify obvious energy-saving opportunities. It provides a preliminary overview of energy consumption patterns and identifies areas for further investigation.

2.Detailed Energy Audit: A detailed energy audit involves a comprehensive analysis of energy consumption, equipment performance, and system efficiency. It includes extensive data collection, measurements, and analysis using specialized equipment and techniques. This audit provides a detailed understanding of energy usage, identifies specific energy-saving measures, and calculates potential cost savings.

3. Investment-Grade Energy Audit: An investment-grade energy audit is a highly detailed and rigorous audit conducted to support investment decisions in energy efficiency projects. It involves precise measurements, detailed engineering analysis, and financial modeling. The audit provides accurate cost-benefit analysis, energy performance projections, and return on investment calculations to help justify and prioritize energy efficiency investments.

3. ENERGY AUDIT TASK

During an electrical energy audit, various tasks are typically performed to assess energy consumption, identify inefficiencies, and recommend energy-saving measures. Some common tasks include:

1.Data Collection: Gathering relevant data on energy consumption, such as electricity bills, equipment specifications, operating schedules, and occupancy patterns.

2. Site Inspection: Conducting a physical walkthrough of the facility to observe and identify areas of energy wastage, such as inefficient lighting, equipment left on when not in use, air leaks, or inadequate insulation.

3. Load Analysis: Analyzing the energy load profile of the facility to understand the distribution of energy usage across different equipment and systems.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 06 | June - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

Power Generation Through Vehicle Suspension and Regenerative Braking System in EV's

Omkar Falake, Prof. V. T. Metkari, Suhas Munde, Tejas Powar, Prathamesh Sawant, Shailesh Gaikwad

Student, Dept. of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Kolhapur
Asst. Prof. Dept. of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Kolhapur

---

Abstract - The given paper concentrate on regenerative suspension system which has the following aims is to convert mechanical vibration energy (or kinetic energy achieved from the jerks or bump from road surface) with help of rack and pinion arrangement into electrical energy. Most brakes commonly use friction between two surfaces pressed together to convert the kinetic energy of the moving object into heat, though other methods of energy conversion may be employed as all the energy here is being distributed in the form of heat. Regenerative braking converts much of the energy to electrical energy, which may be stored for later use. Driving an automobile involves many braking events, due to which high amount of energy losses will generated, with greater potential savings. With buses, taxis, delivery vans and so on there is even more potential for economy. As we know that the regenerative braking, the efficiency is improved as it results in an increase in energy output for a given energy input to a vehicle. The amount of work done by the engine of the vehicle is reduced, in turn reducing the amount of energy required to drive the vehicle. The objective of our paper is to study this new type of braking system that can be collect the car's kinetic energy and convert it into electrical energy or mechanical energy. We are also going to make a working model of regenerative braking and suspension which can convert one energy from to another energy form. Regenerative braking converts total kinetic energy of vehicle wheel into mechanical or electrical energy.

Key Words: Power generation, suspension system, rack and pinion mechanism, regenerative breaking system.

1.INTRODUCTION

Power generation through vehicle suspension and regenerative braking is an innovative concept aimed at harnessing energy from the movement and braking of vehicles. It involves the integration of special technologies and systems that can convert the kinetic energy produced during vehicle suspension movement and braking into usable electrical energy. Traditionally, vehicles have relied solely on fossil fuels to generate power and propel themselves. However, with growing concerns about environmental sustainability and the need to reduce carbon emissions, alternative methods of power generation have gained prominence. Power generation through vehicle suspension and regenerative braking is one such solution that offers potential energy savings and increased efficiency.

When a vehicle is in motion, its suspension system is subjected to constant vertical movement due to bumps, uneven road surfaces, and other disturbances. This movement causes kinetic energy to be generated, which is typically wasted as heat through conventional shock absorbers. However, by implementing energy harvesting systems, this kinetic energy can be captured and converted into electrical energy. Regenerative braking is another crucial aspect of this concept. When a vehicle decelerates or comes to a stop, conventional braking systems dissipate the kinetic energy as heat, resulting in energy wastage. Regenerative braking technology allows the vehicle's kinetic energy to be captured and stored as electrical energy, which can then be used to power various vehicle components or stored in batteries for future use.

By utilizing both suspension and regenerative braking systems, vehicles have the potential to generate significant amounts of electrical energy during their operation. This energy can be used to power auxiliary systems, reduce reliance on the vehicle's main power source, or even be fed back into the grid. Implementing power generation through vehicle suspension and regenerative braking has several potential benefits. It can increase overall vehicle efficiency, reduce fuel consumption, and lower emissions. Furthermore, it offers the possibility of creating a more sustainable transportation system by tapping into renewable energy sources and reducing the extreme use of fossil fuels. While this concept shows promise, there are still challenges to overcome. The integration of energy harvesting systems into vehicle suspensions and braking systems requires careful engineering and consideration of safety, reliability, and cost factors. Additionally, the captured electrical energy needs to be efficiently stored and managed to ensure optimal usage and longevity.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 06 | June - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

CALIBRATION OF 1-PHASE AND 3-PHASE ENERGY METER USING PID CONTROLLER

Mr. V.T.Metkari1, Mr. Pandurang Kamble2, Mr. Dattatray Kumbhar3, Mr. Shubham Patil4, Mr. Vivek Patil5

Department of Electrical Engg., SETI Panhala

Abstract - Calibration of Energy meter plays important role in distribution systems from consumer point of view. Several conventional methods like Standard energy meter, comparing energy with standard power measuring equipments leaves some of the considerable errors in calibration techniques. This noval method of calibration of energy meter based on arduino for measurement of true energy is effective and more accurate as compared to conventional methods. The results have been verified with numerical analysis methods and also with standard meter method.

Key Words: Smart Energy meter, Calibration of Energy meter, Error detection

1.INTRODUCTION

The meter which is used for measuring the energy utilizes by the electric load is known as the energy meter. The energy is the total power consumed and utilized by the load at a particular interval of time. It is used in domestic and industrial AC circuit for measuring the power consumption. The meter is less expensive and accurate. The calibration of energy meter may become inaccurate during its vigorous use due to various reasons. It is necessary to calibrate the meter to determine the amount of error. The current and voltages are held constant during the test. The numbers of revolutions made by the test are recorded. The time taken is also measured. Energy recorded by meter under test = RX / KX kWh. Energy computed from the readings of the indicating instrument = kW × t Where RX = number of revolutions made by disc of meter under test.

2. METHODOLOGY

The meter which is used for measuring the energy utilizes by the electric load is known as the energy meter. The energy is the total power consumed and utilized by the load at a particular interval of time. It is used in domestic and industrial AC circuit for measuring the power consumption. The meter is less expensive and accurate. The calibration of energy meter may become inaccurate during its vigorous use due to various reasons. It is necessary to calibrate the meter to determine the amount of error. The current and voltages are held constant during the test. The numbers of revolutions made by the test are recorded. The time taken is also measured. Energy recorded by meter under test = RX / KX kWh. Energy computed from the readings of the indicating instrument = kW × t Where RX = number of revolutions made by disc of meter under test.

The objectives of the research work are as below-

1. To determine the accuracy of energy meter under the test .
2. To establish the reliability of the energy meter
3. To reduce the testing time of energy meter

3. DESIGN ASPECTS

3.1 Testing Principle

The schematic diagram of field test on digital energy meter based on digital reference energy meter is shown in Fig.1. The reference meter [3] receives the IEC 61850 protocol data sent by the field merging unit to calculate the precise electric energy and output the high frequency standard electric energy pulse.

Higher performance is required of digital reference meter than digital meter including higher accuracy of complex load energy measurement and field reliability, standard electric energy pulse output which can respond accurately to the real-time changes of field dynamic load. However, in the field testing, the actual operating environment of digital energy meter challenges.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 06 June - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

REVIEW ON WIND-SOLAR HYBRID POWER SYSTEM

Prof.A.M Bhandare[1] ,Sanchit Pawar[2] ,Sandeep Yadav[3],Yogesh Rote[4] ,Vaibhav Kamble[5],Shivam Sutar[6] ,Tushar Salokhe[7]

Assistant Professor,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [1]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [2]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [3]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [4]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [5]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [6]

Student. ,Department of Electrical Engineering ,SEIT,Panhala,Maharastra,India [7]

ABSTRACT: **The demand for electricity power is increasing day by day, which cannot be met with the satisfied level without non-renewable energy resource. Renewable energy sources such as wind, solar are universal and ecological. These renewable energy sources are best options to fulfill the world energy demand, but unpredictable due to natural conditions. The use of the hybrid solar and wind renewable energy system like will be the best option for the utilization these available resources. The objective of this research paper is to study thevarious aspects of hybrid solar and wind system. The application and different theories relatedto the development of hybrid also discussed in this paper.**

Keywords: *Solar energy, Hybrid system, Wind energy*

1. INTRODUCTION

For development of any country energy plays an important role. It is very essential part of growth & economy of country. Our primary source of generating energy is from coal, oil and natural gas. As we all know that energy is needed for industrial, agriculture, commercial and domestic purpose. World's energy demand is increasing day by day. There are many sources of generating energy from coal, fossil fuels, oil and other gases [3]. But all these sources are harmful to the environment so that there are limitations of using these sources and they are limited. Due to global warming and pollution in environment we need clean energy source. In today's world all focus is on Eco green energy, means generating energy without harming environment. In that case we have option of renewable energy sources like solar, wind, small hydro & biomass, bio-fuel etc. Renewable energy is having very much potential to achieve energy demand. But there are also some difficulties occur to use these energy sources, many research is going on to improve the efficiency of renewable energy source. Because main aim is to conserve the natural resources, make system to avoid global warming & carbon emission. Generating energy from renewable source instead of coal or fossil fuel will be cost effective to the country. If we use this renewable source to generate energy it is predicted that it will reduce CO2 emission [9]. As mentioned above there are many renewable energy sources but wind & solar energy is most prominent. Because if we talk about renewable energy source the first thought is about wind- solar, it is well known source of energy and widely distributed everywhere. Single source of energy such as wind & PV is not totally reliable due to climate change or sunshine in night hours or rainy season and wind speed variation [1].

Normally wind & solar energy are separately used to generate power but both are having some losses. Like our environment is changes every day the climate changes affect these systems, solar radiations are not consistent and wind speed varies every time so it affect the system & its performance. Whatever cost require for installing single system it will reduced up tosome extent in this combine hybrid system. So instead of using single system, if we combine these two it will help each other to overcome losses. Like when sunshine hour's solar PV system will generate electricity and wind turbine system will extract energy from wind source. When wind conditions are not strong enough to produce power that time its have backup to fulfill load demand & that will generate from the solar

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:06/June-2023 Impact Factor- 7.868 www.irjmets.com

3PHASE FAULT DETECTION BY USING IOT

Rutvij Herlekar*1, Shyeyash Shetake*2, Mustakim Momin*3,

Mr. Arvind Bhandare*4

*1,2,3Student, Electrical Engineering, SETI Institute, Kolhapur, Maharashtra, India.

*4Assit. Professor, Electrical Engineering, SETI Institute, Kolhapur, Maharashtra, India.

ABSTRACT

If we look at the present Transmission line fault discovery system, there are several problems, many of which include a lack of professed labor, increased pitfalls, and also a time-consuming process. Automating a process is known to break numerous or all of the similar problems faced in conventional processes. This is one similar attempt to produce an easy and cost-effective result that is applicable in the forthcoming power transmission systems for Electricity providers and drivers at colorful stages or stations. The IOT base Transmission fault discovery system can descry the fault when the line breaks down and it also shuts down the power force through the defective line until the driver shuts down the entire line once he confirms the fault. The system monitors the line fault in sequence for 3 lines videlicet R, Y, and B Phases. Once the fault is detected the system sends the announcement to the line monitoring station, it also provides information about the defective line and the distance at which the line is broken. The system is also able of transferring the line voltage to the monitoring station

Keywords: Transmission Line, Fault, Phases, Detected, Power.

I. INTRODUCTION

It s known that when a fault occurs in an overhead transmission line system also immediate changes in voltage and current at the point of fault induce high frequency. The fault impedance is low. The fault current is fairly high, during the fault. The Voltage come unstable because we've set up that the Internet of Effects (IOT) is a simple, yet veritably important concept that evolved. The " Internet of Effects" expression which is well-known as IOT in short is created from the words " internet " and " effects " where " effects " refers to any internet-connected device. IoT technology allows physical objects to be connected to the internet and enables the examiner and control of these objects from anywhere. The number of internet druggies is roaring due to advancements in widgets, computers, and mobile phones thus the IOT paradigm is proving to come a significant part of the ultramodern period. It's estimated that 50 billion effects would be connected to the internet by 2020, overshadowing the mortal generated data. Power system trustability and security has the most important demand. And to ensure good quality and also nonstop power force to consumers. Due to the Lack of a monitoring system, the mileage doesn't get timely data on the health of lines, mileage comes only when there's serious fault/ damage. The power inflow is diverted towards the fault and force to the neighboring zone is affected. One phase of a three-phase system gets lost, and a phase loss occurs. This is appertained as a ' single phasing ', this failure is generally caused by a blown fuse, thermal load, broken line, worn contact, or mechanical failure. This IOT system is connected, Whenever the phases are been dissociated the system shows a power failure on the TV indicating voltage value and also it raises. The transmission network is considered to be one of the vital corridors of the power system, as it connects the force and the demand. The loss in transmission and distribution networks is considered to be veritably high, compared to other corridors of power systems, presently, the electric power structure is largely vulnerable to numerous forms of natural and vicious physical events, which can negatively affect the overall performance and stability of the grid. The faults in the transmission network obstruct the force of power to the consumer, generally, when a fault occurs the system automatically detects fault, assay and classify these faults and also, calculate the fault distance from the control room using an impedance-grounded algorithm system. Eventually, the fault information is transmitted to the control room by IOT technology.

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 2, Issue 5, June 2022

Impact Factor: 6.252

Facial Emotion Recognition with Music Recommendation

Muskan Jamadar[1], Sakshi Jadhav[2], Rutuja Dame[3], Mayuri Patil[4], Sujata Patil[5], Prof. R. S. Nejkar[6]

Students, Department of Computer Science and Engineering[1,2,3,4,5]

Assistant Professor, Department of Computer Science and Engineering[6]

Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra, India

Abstract: *Facial emotion recognition is advancement in computer vision and machine literacy and with the help of this computing technology it's easy to identify mortal emotion through images also. In this paper we propose fashion call facial emotion recognition with music recommendation using Convolutional Neural Network (CNN). The FER is grounded on three corridor. The first part removes the background from the picture, the alternate part concentrates and maps the facial point vector birth, and the third part recommends music grounded on prognosticated emotion. So, to train the images online database is taken from the Kaggle and consequently the feelings are labelled with 96 of delicacy. Further, grounded on emotion vaticination music or audio song will be recommended from the database.*

Keywords: Facial Emotion Recognition

I. INTRODUCTION

Facial Emotion Recognition is grounded on Deep literacy. Deep literacy is a branch of Machine literacy which is fully grounded on Artificial Neural Network as neural network is going to mimic the mortal brain. One of the main corridors of Neural Network is Convolutional Neural Network (CNN) which comes under deep literacy. CNN are made up of neurons. A CNN is neural network that has one or further convolutional layers and are used substantially for image processing, bracket, segmentation and also other bus identified data. The main advantage of CNN is that it automatically detects the important features without any mortal supervision. This is why CNN would be an ideal result to computer vision and image bracket problems. The facial emotion recognition is a process of detecting mortal feelings and facial expressions. We concentrate on five essential facial expressions which are wrathfulness, sad, happy, stressed, and surprised. This design aims for expressional examination and to characterize the given image into these five essential feelings. Haarcascade Algorithm is substantially used to identify Mortal face and helps in background junking of a input image. After junking of background only face vector is taken into consideration. Grounded on the vaticination of emotion through face vector music will be recommended from database.

1.1 Convolutional Neural Network (CNN)

Convolutional Neural Network is a Deep literacy algorithm which can take in an input image assign significance (learnable weights and impulses) to colorful aspects/ objects in the image and be suitable to separate one from the other. A CNN is a type of artificial neural network used in image recognition and processing, that's especially designed to reuse pixel data. Images contain data of RGB combination. The computer does not see an image, all it sees is an array of figures. Color images are stored in 3- dimensional array. The first two confines correspond to the height and range of the image (the number of pixels) The last dimension corresponds to the red, green and blue colors present in each pixel. Three layers of CNN: There are three types of layers in CNN

1. Convolutional Layer: Convolutional Layer a typical neural network each input neuron is connected to the coming retired subcaste. In CNN only a small region of the input subcaste neurons connects to the neuron hidden subcaste
2. Pooling Layer: Pooling Subcaste The pooling subcaste is used to reduce the dimensionality of the point chart. There will be multiple activation and pooling Players inside the retired subcaste of the CNN.
3. Fully - Connected layer: form the last many layers in the network. The input to the completely connected

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 06 | Jun 2022 www.irjet.net p-ISSN: 2395-0072

MODI Lipi Handwritten character Recognition using CNN and Data Augmentation Techniques

Vishal Pawar[1], Deepak Wadkar[2], Shivkumar Kashid[3], Premraj Prakare[4], Vinayak More[5], Prof. S.A. Babar[6]

[1,2,3,4,5]Students, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India).
[6]Assistant Professor, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India).

Abstract - *MODI is an old Indian script from Maharashtra. This script was popular for drafting official papers during the reign of Chhatrapati Shivaji Maharaj. Character recognition MODI is difficult due to its structural features and the lack of an image database. In this research, we created a CNN model for character recognition and used data augmentation techniques to expand the MODI script's dataset. Because the MODI script includes a limited image dataset of 4140 images, we applied data augmentation to the dataset and trained the CNN model on a produced dataset. The trained model recognizes Handwritten MODI characters with an accuracy of about 91.62%.*

Key Words: **Convolutional Neural Network, Data Augmentation, Deep Learning, Image Processing, Character Recognition.**

1. INTRODUCTION

MODI is a Brahmi-based script that is mostly used for writing Marathi. MODI Script was commonly used until 1950 when everyone switched to the Devanagari script. The MODI script was used to write official documents, cultural literature, and religious books. As a result, most old writings from the 12th century to the 19th century in Maharashtra State, India, are written in MODI Script. However, most individuals are unaware of the script. The study in this paper focused on handwritten character identification and transliteration to Marathi script.

The MODI script dates back to the 12th century and was used until the 20th century. Shivkalin and the Peshava Kalin Kingdom have both used MODI Script. Figure 1 depicts a letter written in MODI Script by Chh. Shivaji Maharaj.

As time passed, various changes were made to the forms of writing of MODI. In the 12th century, MODI Script was called "Adyakalin", and in the 13th century, it evolved as a new script known as "Yadavkalin". The "Bahamanikalin" of the 14th-16th centuries is the next phase of development, followed by the "Shivakalin" of the 17th century. MODI's ultimate stage is related to English rule and is known as "Anglakalin". From 1818 to 1952, this style of writing was in use. MODI was also used in elementary school textbooks published in the nineteenth and twentieth century. Then Devanagari Script began to replace MODI Script in the twentieth century. The Bombay Presidency decided on July 25, 1917, to replace the MODI script with the Balbodh style of Devanagari as the primary administration script for ease and consistency with the other areas of the presidency [1].

Fig-1: Letter Written by Chh. Shivaji Maharaj

2. IMPORTANCE OF MODI SCRIPT

Thousands of Modi documents have been saved in South Asia and Europe. Due to the presence of these Europeans in Tanjore, Pondicherry, and other South Asian places throughout the nineteenth century, the majority of these are stored in various archives in Maharashtra, although lesser collections are kept in Denmark and other nations. The earliest surviving Modi documents from the 17th

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 05 | May 2022 www.irjet.net p-ISSN: 2395-0072

The Analysis of Share Market using Random Forest & SVM

Ajay Patil[1], Vivek Patil[2], Pranav Sawant[3] Dipak Kadam [4], Sandesh Patil [5], Prof S.A. Babar [6]

[1,2,3,4,5] Students, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India).

[6] Assistant Professor, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India)

Abstract - *The main purpose of this journal is to find the most accurate model to forecast the value of the share market. During the procedure of considering various approach and variables that must be taken into account, we found out that methodology like random forest and support vector machine were not utilized fully. In, this journal we are going to develop and analysis a more efficient technique to forecast the stock movement with perfection. We have taken the stock market values from last five days from the yahoo finance which is an authenticating source of information. The dataset is stored in the CSV file which is already pre-processed and we will use it for prediction. Therefore, our journal will be focusing on the techniques. After the storing data we are going to apply random forest algorithm and support vector machine algorithm to bring precise output. In addition, the proposed paper examines the utilization of the forecast system in real-world settings and issues related with the precise output of the overall values given. This paper is going to represent an extraordinary machine learning model. The victorious forecast of share will be benefit to the all-stock market organization and will supply real-world answer to all the issues that shareholder face.*

***Key Words*: Machine Learning, Forecast, Dataset, Stock, Share Market, Random forest, SVM.**

1. INTRODUCTION

The stock market is a place where shares of public listed companies are traded. A share (also known as equity) is a security that represents the ownership of fraction of corporation or company. The act of trying to determine the future value of a company stock or other financial instrument traded on an exchange is called as stock market prediction. The model will be powerful, exact and proficient. The framework should work as per the genuine situations and ought to be appropriate to certifiable settings. The framework is additionally expected to consider every one of the factors that could influence the stock's worth and execution. There are different strategies and approaches to executing the forecast framework like Fundamental Analysis, Technical Analysis, Machine Learning, Market Mimicry, and Time series angle organizing. With the progression of the computerized period, the expectation has climbed into the mechanical domain. The most unmistakable and promising strategy includes the utilization of Artificial Neural Networks, Recurrent Neural Networks, that is essentially the execution of AI. AI includes man-made reasoning which engages the framework to gain and improve from previous encounters without being customized on numerous occasions. Customary techniques for expectation in AI use calculations like Backward Propagation, otherwise called Backpropagation blunders. Of late, numerous scientists are utilizing a greater amount of outfit learning procedures. It would utilize low cost and delays to foresee future highs while another organization would utilize slacked highs to anticipate future highs. These forecasts were utilized to shape stock costs. Securities exchange cost expectation for brief time frame windows gives off an impression of being an irregular cycle. The stock cost development throughout a significant stretch of time typically fosters a straight bend. Individuals will quite often purchase those stocks whose costs are supposed to ascend soon. The vulnerability in the securities exchange forgo individuals putting resources into stocks. Consequently, there is a need to precisely foresee the financial exchange which can be utilized in a genuine situation. The techniques used to foresee the financial exchange incorporates a period series estimating alongside specialized investigation, AI displaying and anticipating the variable securities exchange. The datasets of the securities exchange forecast model incorporate subtleties like the end cost opening value, the information and different factors that are expected to foresee the item factor which is the cost in a given day. The past model utilized conventional strategies for expectation like multivariate examination with a forecast time series model. Securities exchange forecast outflanks when it is treated as a relapse issue however performs well when treated as a grouping. The point is to plan a model that increases from the market data using AI methodologies and check what's in store designs in stock worth turn of events. The Support Vector Machine (SVM) can be utilized for both grouping and relapse. It has been seen that SVMs are more utilized in arrangement-based issue like our own. The SVM procedure, we plot each and every information part as a point in n-layered space (where n is the quantity of elements of the dataset accessible) with the worth of component being the worth of a specific direction and, thus characterization is performed by finding the hyperplane that separates the two classes unequivocally. Prescient strategies like Random woods method are utilized for something very similar. The arbitrary timberland calculation follows an outfit learning system for grouping and relapse. The irregular woodland

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 06 | Jun 2022 www.irjet.net p-ISSN: 2395-0072

E-Health Care Cloud Solution

Ajay Hasole[1], Aniket Khatavkar[2], Mahesh Kamble[3], Rushikesh Alase[4], Yatiraj Korade[5], Prof. V.A. Shevade[6]

[1,2,3,4,5] Students, B. Tech Computer Science and Engineering, SETI, Kolhapur, Maharashtra, India.
[6] Assistant Professor, Dept. of Computer Science and Engineering, Sanjeevan Engineering and Technology Institute Kolhapur, Maharashtra, India.

Abstract - *Previously, patient reports were submitted to hospitals in the form of documents. There will be more space to keep patient reports. When an old patient comes to the hospital, it takes a lot of time to find his document. Its total wastage of paper. The documentation report is not secure. anyone can destroy the document easily and can stop all this, we have come up with a new idea. It's called an E-health cloud solution. Each patient report will save on the cloud. This Data will be safe and secure. It is accessible very easily Cloud computing is a new way of delivering computing resources and services Many managers and experts believe it has the potential to improve healthcare services, advance healthcare research, and transform health-information technology. The information is critical for making decisions and providing the best possible care to patients. Cloud computing is a cost-effective method for collecting, storing, and exchanging real-time data between healthcare organizations. Cloud infrastructure is characterized by high throughput and large storage volumes, both of which are critical for effective data analysis of large patient populations. Security and sequestration are the major enterprises that are answered using pall- grounded healthcare services. Data security continues to be one of the top enterprises for cloud computing, an issue that is been boosted by recent high-profile attacks in healthcare. The encryption result has to be quick and easy to provision and give high situations of protection without immolating network performance. It's another way to give a critical subcaste of security to cover the guests. In this work, we're interested in data encryption in the healthcare pall. Authentication is the first step for data security, through which druggies can establish evidence of identity before data access from the system. In a pall computing terrain, conventional authentication styles don't give strong security against the moment's most ultramodern means of attack. Cloud needs a dynamic approach for stoner authentication, which should include more than one authentication credential. we propose a data security armature with a robust, dynamic, and doable Multi-Factor Authentication scheme which integrates further than one factor like OTP for cloud stoner authentication.*

***Key Words*: Health Care, Cloud Computing, AES Algorithm, Patient History Reports, MFA.**

1. INTRODUCTION

In this project, the hospital can just use the services of the cloud to upload patient data. In healthcare system can manage the administration and required IT requirements that have the potential to retrieve the real-time information of patients without any delay. The uploaded data we can access through the cellular network and remote devices we can share the medical history of a patient helps doctors to treat a patient properly. The e-health (electronic health) system is one of many cloud services that stores and shares patient medical data between healthcare service providers and patients using computer or electronic systems and cloud technology. The health data/patient records are kept in a semi-trusted third-party supplier that is the cloud. Therefore, its security has become the main concern as the data should not be accessible to an unauthorized person To remain cost-effective, efficient, and timely while providing high-quality services, health care, like any other service industry, requires continuous and systematic innovation. Many managers and experts predict that cloud computing can improve health care services, benefit healthcare research, and change the face of information technology (IT). Several informatics breakthroughs have shown that cloud computing has the potential to solve these problems. Despite the many benefits associated with cloud computing applications for health care, there are also management, technology, security, and legal issues to be addressed.

2. PROBLEM DEFINITION

Already, persistent reports were submitted to healing within the frame of difficult duplicate archives. There will be more space to keep understanding reports. When an ancient persistent comes to the clinic, it takes a part of the time to discover his report. It adds up to the wastage of paper. The hard copy documentation report isn't secure. Anybody can annihilate the archives effectively. So anticipate this, we have come up with an idea called an E-healthcare cloud solution. Each patient's report will spare on the cloud. In this, information will be secure and secure. It is available exceptionally effortlessly.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:07/July-2022 Impact Factor- 6.752 www.irjmets.com

BLOCK CHAIN BASED SECURE DATA STORAGE ON CLOUD

Kranti Warke*1, Devika Mahindre*2, Vishakha Patil*3, Vaibhavi Shinde*4, Shrutika Hapse*5, Prof. V.A. Shevade*6

*1,2,3,4,5Students, B.Tech Computer Science And Engineering SETI, Kolhapur, Maharashtra, India.

*6Assistant Professor, Dept. Of Computer Science And Engineering, Sanjeevan Engineering And Technology Institute, Kolhapur, Maharashtra, India.

ABSTRACT

In this paper, we present a security that provide to the confidential data. cloud storage is used for the storing an important data. Cloud storage has many benefits over traditional physical storage method, including more accessible data storage. Using cloud, you can easily share file and collaborate with others. A blockchain is a type of digital database that is used to store a huge amount of information. Blockchain is one of the safe growing information technologies that help in providing security to the data. Blockchain is the technology that helps the data from hacking. Once the data gets initialized by the user, it cannot be exchanged or modified, it provides more and more security to user data. Data privacy is unharmed because the user data cannot be shared with authorized and unauthorized users in the network except the current use. On the other hand, encryption and decryption techniques will also be used along with the blockchain techniques Encryption is a process which transforms the original information into an unrecognizable form. In this project, an implementation of the AES encryption and decryption algorithm is used. This will provide security to the confidential data. For more security purpose we have used blockchain technique with distributed system. This data will be securely stored on cloud.

Keywords: Cloud, Blockchain, Encryption, Decryption.

I. INTRODUCTION

Cloud computing is the recent arising technology of IT industry to solve the problems and difficulties of business database services such as storage capacity, performance, stability, security, load and many other issues. Cloud storage was used to provide the cloud-based data storage platform. The computing tasks are distributed to a large number of computer systems, so that all applications can access the calculation capability, storage space and software services. Definition of Cloud computing changes from professionals to professionals and from individual to individual. Everyone has their own way of defining cloud computing. e primary goal of cloud computing is to offer the organisation services that are both affordable and effective. Infrastructural and data management costs are decreased as a result. vast services are offered by cloud providers. How to secure, safeguard, and process data is the core objective of cloud computing. AES Algorithm is of the out sourced data in cloud environment the “effective automatic data reading protocol” and multi-server data compression algorithm. AES is an algorithm for performing encryption which is a series of well-defined steps that can be followed as a procedure. The original information is known as plaintext, and the encrypted form as cipher text. Plain text converted into the cipher text, that is not in the readable format. To convert this cipher text into plain text there is reverse technique that decryption technique it will convert cipher text into the plain text means in readable format.

Blockchain plays a key part in the decentralised peer-to-peer system that is driving the rapid development of information technology in security. Blockchain technologies like the hashing algorithm, public/private key encryption, and transaction ledgers make this possible. Every piece of data is kept in a different decentralised place. If hackers attempt to access it, they first obtain encrypted data and then only a portion of the file, not the entire thing. This protects documents stored in cloud storage powered by blockchain. Blockchain is having a good effect and making it easier, faster, and more reliable to use storage, transactions, and business operations. The way forward is to combine blockchain and cloud to benefit from increased security and decentralisation, which improves authorisation, privacy, and efficiency.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 06 | Jun 2022 www.irjet.net p-ISSN: 2395-0072

A survey on Enhancements in Speech Recognition

Nitin Kendre[1], Vivek Parit[2], Asazad Pathan[3], Akash Kamble[4], Prof. T.V. Deokar[5]

[1,2,3,4] *Students, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra)*
[5] *Assistant Professor, Department of Computer Science & Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra)*

Abstract – *Purpose of This study is to know the enhancements in speech recognition field. From starting of the 21st century people are working and researching in the area of voice recognition. Researchers have contributed many things in this area. Normal speech without any noise is easy to understand by computers, but if the speech includes noise, then it is very difficult to understand by computer and separate the noise from the speech. There are various reasons to have noise in speech like background noise, environmental noise, signal noise, crowded places, etc. In this paper, we are going to present various techniques to enhance the speech recognition system to work in any environment by researchers. Also, some advanced enhancements in speech recognition to use this system in other situations like emotion recognition.*

Key Words: **Robust Speech Recognition, Artificial Intelligence, Feature Extraction, Noise Reduction, Deep Learning.**

1. INTRODUCTION

The technique through which a computer (or another sort of machine) recognizes spoken words is known as speech recognition. Essentially, it is conversing with your computer and having it accurately recognize your words. Simply, it means talking to the computer and having it correctly recognize what you are saying.

Voice is the most common and fastest mode of communication, and each human voice has a distinct quality that distinguishes it from the others. As a result, not only for humans but also for automated machines, voice recognition is required for easy and natural interaction [12].

Speech recognition has applications in a variety of sectors, including medicine, engineering, and business. The general problem with speech recognition is speaking rate, gender, age, and the environment in which the discussion is taking place, and the second issue is speech noise [12]. If we can solve these issues with speech recognition, it will be much easier to create goods or systems that people can use everywhere, even in crowded areas or in noisy environments.

Therefore, it is necessary to remove or reduce the amount of noise in a speech to do effective recognition of speech or voice. And to reduce or remove the noise from speech we have to know the basics of recognition. The basic model of speech recognition or speech-to-text model is shown in figure 1. Figure 1 depicts the basic model of speech recognition, also known as the speech-to-text paradigm.

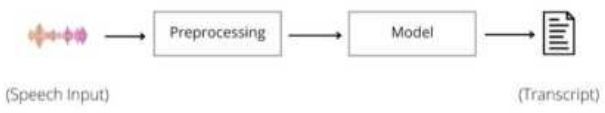


Fig-1: The basic model of Speech Recognition.

1.1 Speech Input

A human voice is captured or recorded using a microphone and sound card connected to the computer as speech input. Modern sound cards can record audio at sampling rates ranging from 16 kHz to 48 kHz, with bit rates ranging from 8 to 16 bits per sample, and playback speeds of up to 96 kHz [12].

1.2 Preprocessing

Signal processing takes place in this step. This process converts an analog signal to a digital signal and does noise reduction, as well as changes audio frequencies to make it machine-ready [12][13].

1.2.1 Feature Extraction

The next step in pre-processing is to choose which features will be valuable and which will be unnecessary. We need to understand MFCCs (Mel Frequency Cepstral Coefficients) in order to extract features.

1.2.2 MFCCs

MFCCs is a method for extracting features from audio signals. It divides the audio signal's frequency bands using the MEL scale, then extracts coefficients from each frequency band to create a frequency separation. The Discrete Cosine Transform is used by MFCC to conduct this operation. The MEL scale is based on human sound

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 9, June 2022
Impact Factor: 6.252

E-Commerce Website "City Kart"

Neeraj N Chopade[1], Akash A Bangade[2], Vikas M Patil[3], Rohit V Patil[4], Sayali S Kulkarni[5], Prof. T. V. Deokar[6]
Students, Department of Computer Science & Engineering[1,2,3,4,5]
Assistant Professor, Department of Computer Science & Engineering[6]
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra, India

Abstract: *Organizations began using Electronic Data Interchange (EDI) to move commercial papers back and forth in the 1960s, and E-Commerce was born. Online shopping enterprises arose in the 1990s, and they are now a huge phenomenon. On August 11, 1994, a Sting CD was sold by US retailer Net Market as the first-ever online purchase. It has gotten so simple and convenient that anyone can purchase for anything from the comfort of their own home with just a few clicks. With the introduction of smartphones, you may now shop from anywhere and at any time using a wireless device connected to the Internet. You may now look for practically any product or service online without having to leave your house. Depending on the function they serve, different eCommerce websites are named or referred to in different ways. E-commerce is simply a sort of business. It operates in a manner that is very similar to that of the actual retail industry. The only difference between it and a traditional store is that the entire transaction takes place online.*

Keywords: Ecommerce Website, E-com website, Shopping

I. INTRODUCTION

A website that lets you buy and sell physical commodities, digital products, and services via the internet. For ages, trade has existed, whether through barter exchange or the buying and selling of products and services. There is no such thing as self-sufficiency. This emphasises the importance of good and service demand and supply.

For ages, transactions have taken place all throughout the world, both locally and beyond borders. Consider the electronic version of the same principle. Keep in mind, however, that as the entire world has gone online, data privacy rules have gotten increasingly strict. And, before you start an ecommerce business, you should be informed of all the legal laws that apply to your website.

Depending on the function they serve, different eCommerce websites are named or referred to in different ways.

- **Business-to-Business** (B2B): Electronic transactions between companies for goods and services. A company, for example, offers SAS products to other companies.
- **Business-to-Consumer** (B2C): Electronic transactions between businesses and consumers of goods and services. Consider the following scenario: You purchase a new t-shirt from an internet retailer.
- **Consumer-to-Consumer** (C2C): Consumers transact products and services electronically, usually through a third party. Consider the following scenario: You sell your old smartphone to another consumer on eBay or Olx.
- **Consumer-to-Business** (C2B): Individuals give items or services to businesses through electronic transactions of commodities and services. For example, a social media influencer may charge a fee in exchange for visibility to their online audience.

This website will focus mainly on small scale businesses. As the ratio of small scale business in India is 93%, and these are suffering because of some famous websites. These small scale business try hard to compete with the market situation. And not all get success in it.

So, our website will provide them a platform on which they will be able to sell their products and bring their business on a newer heights. As well as it will also help in making addition income to the shopkeepers who are already in the business.

II. PROBLEM STATEMENT

There are numerous websites on the internet that provide a variety of products and services for consumers to search for and purchase online, such as shoes, garments, sunglasses, and other items. Furthermore, the internet offers a variety of

DOI: 10.48175/IJARSCT-5333

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 9, June 2022
Impact Factor: 6.252

Traffic Analysis using Image Processing to Alert Traffic Control

Nahida Chaus[1], Ayesha Pailwan[2], Sharlet Chavan[3], Rani Nagavkar[4], Prof S. S. Kumbhar[5]
Students, Department of Computer Science & Engineering[1,2,3,4]
Assistant Professor, Department of Computer Science & Engineering[5]
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra, India

Abstract: *In this paper, we present a scheme for traffic analysis using Image Processing to alert traffic control. In this, the vehicles are not being detected by sensors as we are detecting by images with the use of python language we are going to implement it in our project. Once image is captured from digital media, it is fed into image processing after that it detects vehicles from image using open cv libraries, after that at the end vehicles are detected on basis on vehicle count, and time will be set as per so reduce the road traffic congestion. This system contains the solution to three problems of traffic system. First one being the pre-defined set of timings set for each traffic signal despite the density circumstances. For this we have changed the signal timings. The working would be as follows, in a traffic junction of four lanes the density is measured on each lane at distance of 50 meters through the Image Processing. After that count the vehicle and turn on green light for time period deepening on vehicle count ratio. this is done so that the lane having highest density is allowed to clear the traffic first, the other lanes will be given green signal after this in a circular pattern. If in cases where the density is greater, the signal timing is increased seconds.*

Keywords: Traffic control, Computer Vision, Image Processing, Edge Detection, artificial intelligence.

I. INTRODUCTION

One of the very essential issue in our country is road congestion. Most narions have automobiles, buses, trucks, motor vehicles, motors, scooters and bicycles. However, in India, more n more to the current routine small scale transportation, and together substantially to the traffic, are networks of vehicles, two wheelers still as heavy cars. This has led to the more n more of traffic, higher number of accidents, cases and increase in commuting time over the years.

Traffic means a lot of vehicles coming and going on the road and in a big city a lot of vehicles are seen on the road . And it has become very difficult to manage this traffic so there are a lot of accidents on the road. And this traffic is having a huge impact on people's health, spreading various diseases. we have to use a lot of techniques to stop this traffic. People don't use public transport, they have their own private vehicles, so the traffic is increasing, we have to reduce , and use image processing to control traffic and alert traffic signals.

The intention in our research paper is that we are going to count the vehicles on the road and Depending on how many vehicles are on the road, we will decide which road to assign the time to traffic signals . Each road will have a camera that will take a photo every second of every time And from that photo, the time will be decided according to which road have the vehicles and how many time assign to the road. All these techniques will not only decrease the traffic but also control the traffic and reduce the accidents.

1.1 Problem Statement

System for controlling traffic congestion on road using image processing methods to detect vehicle on road and schedule traffic signal light pattern to manage and avoid vehicle congestion.

II. RELATED WORK

In [1] this research the author has suggested to implement a intelligent traffic controller using real time computer vision. Filtering method is used to capture the image and video, i.e. it filters the image and removes the unwanted background and only focuses on the cars as an object. Image processing technique is used to detect the count of cars on the road and the detection of cars is also done by video. It follows these steps:

DOI: 10.48175/IJARSCT-5368

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

THE VIRTUAL DRESSING ROOM

Diksha Saswade[*1], Vaidehee Batte[*2], Sharvari Bhosale[*3], Mugdha Naikwadi[*4], Pranali Patil[*5], Prof S.S. Kumbhar[*6]

[*1,2,3,4,5]Students, Department Of Computer Science & Engineering, Sanjeevan Engineering And Technology Institute Panhala Maharashtra, India.

[*6]Assistant Professor, Department Of Computer Science & Engineering, Sanjeevan Engineering And TechnologyInstitute Panhala Maharashtra, India.

ABSTRACT

Design coordination is one among the self- articulations which are never-endingly in requests. searchingfor good clothing, could be a period overpowering errand aswell as a few variables should be remembered. In this paper, we are presenting a "virtual changing area (VDR)" is the web-based likeness an in-store evolving room. Augmented reality is innovation that grows our actual world, adding layers of computerized data onto it. Augmented reality adds advanced component to live view byutilizing cameras on sensors. Ourinspiration here is to expand the time effectiveness and movealong the openness of garments take a stab at by making a virtual dressing room climate The framework would be stage autonomous and comprised of all the free-source improvement apparatuses so that whenever taken industrially later we will keep the expense as low as could be expected Augmented the truth is the inspiration driving any AR application. This application is carried out utilizing openCV and web camera to catch video. When the video is caught, is distinguishes the foundation and object of human Augmented the truth is immediate and backhanded perspective on genuine word components that are augmented on programming

Keywords: Open CV (Computer Vision), Virtual Dressing Room, Augmented Reality, Windows, Web Camera.

I. INTRODUCTION

A lot of shoppers have encountered a problem that trying clothes in clothing stores is usually a time consuming activity especially during peak hours such as weekends, it might not indeed, even be feasible to take a stab at garments in such cases as web based shopping. Also Due to security reasons there is limitation on number of garments that can be taken for trial at a time. To overcome these problems we aim to develop a virtual trial room using augmented reality. A virtual dressing room is the web based likeness the near-ubiquitous in-store changing room – that is, it enables customers to take a stab at garments to really look at least one of size, fit or style, but virtually.

This application depends on programming which assists in addressing with yielding from the skeleton, separated from picture (taken from camera). In the event that an individual is remaining before the camera, the individual will actually want to choose wanted garments. Likewisein future, we can stretch out our framework to suggest some garments which will suit on that individual relying upon his skin tone. In any case, an issue for purchasing garments online is that client can't attempt the item before he/she get that item. The inclination later dressing on influences the client choice about purchasing the garments. Accordingly, there is a rising interest to create virtual changing area to recreate the perception of dressing. With the help of cutting edge AR development (for example adding computer vision and item acknowledgment) the data about the encompassing genuine universe of the client becomes intuitive and carefully manipulable. Fake data about the climate and its articles can be overlaid on this present reality. This application involves OpenCV for recognizing the client and to change the variety and logo as per client's decision. Contrasted with other existing Virtual Trial Room frameworks, key contrast is the absence of any exclusive equipment parts of peripherals. Over the most recent couple of a long time there have been a number of endeavors in making logos and changing shade of T- shirts carefully. By the significance of Virtual Reality and Expanded Reality in Technical Society, new advances can be embraced in this worry like Webcam, advanced mobile phones to take a stab at various varieties and various logos on T-shirt. Utilizing cameras and sensors, these capabilities assist VR frameworks with examining the client's current circumstance and identify the headset's area. In this way, PC vision and augment reality cooperate to make items more refined and client responsive. You can peruse one of our past articles to gain into a few additional subtleties on how PC vision functions.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:07/July-2022 Impact Factor- 6.752 www.irjmets.com

AC SOLAR GENERATOR WITHOUT INVERTER

Vaishnavi Bhalkar*1, Vasudha Gurav*2, Bhakti Valake*3, Vishwajeet Patil*4, Abhijit Ghatage*5, N. S. Jadhav*6

*1,2,3,4,5Student, Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

*6Professor, Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

ABSTRACT

Today, a greater part of the world's energy needs are met by petroleum products and as the worldwide energy utilization increments definitely so does the utilization of petroleum products. Be that as it may, petroleum derivatives being a non-sustainable asset is nearly consumption and subsequently emerges the requirement for the utilization of sustainable power assets. The task attempted, advances an inventive method for creating power from sun oriented energy utilizing sun powered chargers by straight forwardly producing AC power, not at all like the regular frameworks which creates DC power which must be further on changed over to AC. This new framework, eliminates the requirement for inverters and stage synchronizers, the misfortunes brought about by the influence electronic converters and need for batteries. Making the framework more savvy, effective and pragmatic. The framework utilize a array of photovoltaic cell pairs which are associated in antiparallel structure to make an AC wave structure. The frequency of the AC output created by these cells as they are on the other hand covered and presented to sun powered rate under a turning plate can be controlled, by just controlling the speed of the motor used to rotate the disc.

Keywords: Solar, AC Power, Disk, Photovoltaic, Frequency

I. INTRODUCTION

The necessity of environmentally friendly power is expanding as the overall environment is changing step by step. Coal and other petroleum derivatives are likewise restricted and they will at last run out. The hydroelectric power can be a restricted wellspring of energy it must be utilized in places with gigantic water assets. Then, at that point, thermal power can likewise be utilized for the generation of electricity yet it can make atomic waste so it isn't ecological cordial. However, the utilization of clean sustainable power as sun oriented energy is conceivable. It is an ordinary asset of clean energy as sun sparkles wherever in the planet. So it is not difficult to change over sun oriented energy into power utilizing a sun based cells. Sun based power is expected to turn into the world's biggest wellspring of power by 2050, with sunlight based photovoltaic and concentrated sun oriented power contributing 16 and 11 percent to the worldwide generally speaking utilization. A Photovoltaic cell is comprised of a semiconductor material like silicon. It retains the daylight and produces power. Electron can stream in a one heading through a solar cell on the grounds that the terminals (positive and negative) of the solar cell are static. That is the reason solar cell can create direct current (DC). The essential issue with sunlight based power age is that, sun powered chargers today produce DC power which must be changed over to AC as a larger part of the electrical gadgets can utilize alternating current (AC). The cost of sun powered chargers joined with the cost of inverters, stage synchronizers, establishment and support has made the cost of sun oriented restrictive. Add to that the deficiency of force from the various parts utilized in the DC to AC transformation cycle and it becomes much more ugly. Today, AC power is created for the power lattice by AC generators. The generators are controlled by mechanical energy given by water turbines or steam turbines, flammable gas or atomic fuel. The mechanical energy turns the curls of the generator in an attractive field to deliver voltage. Since the guide loop of the generator flips heading during revolution in the attractive field the subsequent voltage delivered is sinusoidal or AC. This venture disposes of the issue of switching DC over completely to AC. It utilizes sun powered as its feedback and with the assistance of an motor disc arrangement it changes over the DC force of sun oriented cells straightforwardly to AC without utilization of any transformation gear. The coming about yield voltage is hence sinusoidal or AC. In this manner there is no need of transformation hardware's like inverters, stage synchronizers and so forth. This makes the general idea very basic yet successful and affordable as well. And, these sunlight based AC power generator exhibits can undoubtedly supplant the power establishes today, simultaneously being natural well disposed, they can be found any place like in a playground, school or in any private or in any metropolitan environmental

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 07 | July - 2022 Impact Factor: 7.185 ISSN: 2582-3930

Digital Smart Pen

Akshay Vilas Aswale[1], Abhijit Balaso Kumbhar[2], Mayuresh Mohan Desai[3], Aditya Sudhir Shigavkar[4], Abhishek Bhaskar Mane[5], Prof. Y. R. Naik[6]
Student, Electrical Engineering Sanjeevan Engineering & Technology Institute[12345] Professor, Electrical Engineering Sanjeevan Engineering & Technology Institute[6]

Abstract: The purpose of education and learning is often defeated when gadgets developed to assist in the process of learning is not user friendly or ends up becoming a distraction in the classroom due to its size. This work intends to describe a gadget known as smart pen which is a new and evolving technology that does not create distraction due to its portability, that is user friendly and above all its affordable nature. Just like any other pen, it is a writing device developed by the livescribe company. It is a digital and intelligent pen that is fast gaining recognition in synchronizing written notes.

I Introduction

Smart pen is a more specific term; it has the same basic characteristics, but also has other features like voice recording or a text scanner. Digital pens typically contain internal electronics and have features such as touch sensitivity, input buttons, memory for storing handwriting data and transmission capabilities. A digital pen is an input device which captures the handwriting or brush strokes of a user and converts handwritten analog information created using "pen and paper" into digital data, enabling the data to be utilized in various applications. This type of pen is usually used in conjunction with a digital notebook, although the data can also be used for different applications or simply as a graphic. we talk about an increasingly common writing technology called Smart pen. Being one of the latest and useful gadgets on the market today, this practical tool's only purpose is to make our life easier. It is small and compact, it is helpful in more than one way and it can be used by just about anyone.

The Live scribe Echo Digital Smart pen is a very ingenious pen that notonly can write but records too. This pen not only writes like any other pen but it also hears and keeps the information we know that is important and do not want to forget. Recording is done by simply tapping the record button in the notebook to start and tapping again to stop. Through the standard cable it is possible to connect the pen to the computer, which passes all the recordings and also turns possible the search to find both verbal and written notes "Digital pens also called smart pens are made of internal electronics with touch sensitivity, input buttons, transmission capabilities, and also memory for storing handwriting data. With such features, it's able to convert handwritten data into digital data . "Digital pens are usually connected to the computer or pads via Bluetooth or USB cables, they offer more functions compared to a stylus. The sensors fit in the digital pens to detect motion and then translate the motion into graphics, art or writing. Mostly used by graphic designers to make drawings and sketches on their computers while for some students they take notes using digital pens." "Digital pens have features like touch sensitivity, memory, input buttons and electronic erasing capability. A digital pen can be used to write on digital paper, and once done, the user can save what has been written. The pen usually vibrates or beeps as a sign of confirmation that the user has finished a page and the work has been saved. Most digital pens save handwritten work as images in the commonly used GIF or JPEG format. Some, however, use a proprietary format. There are various types of digital pens available on the market like the trackball pen (with a sensor attached to detect the motion of the trackball), camera pen (with camera attached), positional pen (to detect the position of the tip) and active pen. All of these have some special features to differentiate them." "Live scribe's Smart pens are also audio recorders so that students can capture the lectures with their notes. By pointing the Smart pen to their writing or drawings on the digital paper, they can play back the lecture they were listening to when they made those entries. " "An electronic ballpoint pen that digitizes, stores and transfers what is written or drawn to the computer. Instead of a mouse, a digital pen

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

SOLAR-WIND HYBRID ENERGY SYSTEM FOR DC LIGHTNING

Shubham Narke[*1], Kunal Gavali[*2], Pradip Kadam[*3], Aditya Bhosale[*4], Pradeep Dange[*5], Yogesh R. Naik[*6]

[*1,2,3,4,5]Students, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

[*6]Professor, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

ABSTRACT

Now days energy demand is continuous Increasing because of population growth, Advancement in technology. The conventional Sources are available in limited manner & they Have adverse effect on the environment. Whereas non-conventional sources available Naturally with free of cost & does not have any Adverse effect on the environment. In proposed system we have implemented "Solar Wind Hybrid Energy System for DC Lightning." This system is mainly applicable for residential or commercial application, in the remote areas, in hilly areas where electricity is not available.

I. INTRODUCTION

Hybrid system means electricity generation by using two or more sources. The generation of electrical energy by using solar and wind energy called solar wind hybrid system. As we know availability of energy changes as Seasons changes. In summer Seasons there are maximum availability of sun rays and in a rainy or winter Seasons there are maximum availability of wind energy. The availability of energy also changes with day, means at the day time maximum availability of sun energy and at the time of evening maximum availability of wind energy. The generation of electrical energy by using only one system either through solar energy or through wind energy does not provides that much reliability. As if we use hybrid system it provides reliable system. In Proposed system in summer seasons maximum energy generated through solar system whereas in rainy or winter Seasons maximum energy generated through wind system. In such way this system provides reliable supply throughout the year. Now a days energy demand is continuously increasing because of a population and advancement in the technology. now a days most of energy generated through the conventional energy sources. But their availability Limited in nature and they are at the exhausting phase they produce pollution and having adverse effect on the environment. Whereas renewable energy available in abundant manner with free of cost in the environment, they are eco -friendly and does not produce any pollution and don't have any adverse effect on the environment. So Renewable Energy Sources are best choice for the generation of electrical energy.

II. METHODOLOGY

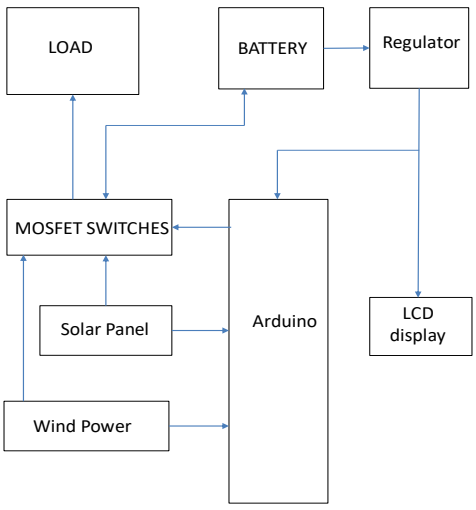


Fig 1: Block Diagram of Selector Circuit Hybrid system.

International Journal of Advances in Engineering and Management (IJAEM)
Volume 4, Issue 6 June 2022, pp: 2119-2122 www.ijaem.net ISSN: 2395-5252

Smart Irrigation System

Vaishnavi Gavali[1] , Rutuja Pawar[2], Neha Nikam[3], Sushant Patil[4], Prof. V.T. Metakari[5]

[1,2,3,4] *Department of Electrical Engineering, Sanjeevan Engineering Technology & Institute, Panhala, Maharashtra, India.*

Submitted: 15-06-2022 Revised: 25-06-2022 Accepted: 27-06-2022

ABSTRACT
This paper deals with innovative technology in various ways to irrigate agricultural land using solar power. By using this system we can find suitability/humidity in the soil. And also we find the surrounding Temperature & humidity in air by using sensor. The main purpose of this paper provides irrigation by knowing the soil moisture. This system saves the energy and power and it is very important in future. We will use this project in countries where there is of water seems be in short for agriculture.

Keywords: Soil, Moisture sensor, Humidity sensor, Temperature, Arduino, Solar Panel.

I. INTRODUCTION

The contribution of agriculture sector to the Indian economy is huge. The Use of manpower should not be excessive and these techniques need to be used to maximize profits over time. Nowadays the demand for energy is increasing and there is a constant flow of fuel into existing sources. And Sources and pollution is on the rise and forcing mankind to take up new, unconventional energy resources like solar energy, wind energy. Development of these new technologies is achieving our goal of sustainable development.

1] Photovoltaic pumping can be installed anywhere. And they can take care of five to ten years. Because they need less maintenance so it also reduces costs. 2] In the past irrigation method is major reason for this old method to imitate the crop in a traditional way without knowing the right Crop ratio, thus destroying some crops.3] We use this project to solve the problem. Due to the growth of the world's population, the growth of agriculture needs to be increased and on the other hand, due to the increasing demand for food due to the population, Farmers are facing many problems. 4] It can control the pump using Arduino based on an Arduino UNO based Automatic irrigation system in this project we have added soil moisture sensor, humidity sensor & Temperature sensor. To the input voltage signal of the input sense the moisture in the soil as well as sense the air& temperature of surrounding area. 5]You can also use the GSM model in this project. Using of this model we can do your motors off at home. 6] This project provides information by Arduino using sensors, when the soil is dry then motor is on when soil is wet then motor is automatically off it is displayed on LCD. 7] Solar Panels are generally known photovoltaic or PV panels. In solar conversion of sunlight in electricity & this electricity stored by battery. It is used to operate electrical equipment and power equipment.

International Journal of Advances in Engineering and Management (IJAEM)
Volume 4, Issue 7 July 2022, pp: 310-313 www.ijaem.net ISSN: 2395-5252

Reverse Recovery of Motor Shubham Mane, Shivraj Mali, Niral Dand

1flat No 1 Anant Plaza Kagal
2grampanchayat Chouk Unchgaon
3shahupuri 1st Lane Kolhapur
PROF. P. B. GURAV,
ELECTRICAL ENGG DEPARTMENT, SETI PANHALA

Submitted: 01-07-2022 Revised: 04-07-2022 Accepted: 08-07-2022

ABSTRACT - In today's world industrialization is growing very fast, there are many types of industries particularly manufacturing and process industries need three phase induction motor for their process work. Three phase induction motor plays very important role in industries. Reversal of motor is a crucial problem in the industries, normally VFD method is used to control reversal of motor but it is very expensive. By use of few electronic components, we can solve this problem. The use of this project is to to avoid the damages of driven equipment due to rotation in reverse direction. To find optimum and cos effective solution for reverse rotation detector instead of bigger and costly panel, To demonstrate the solution of reverse rotation which we can use for any type of motor or rotating equipment.
Keywords- motor, reverse rotation, control

I. INTRODUCTION

If driven equipment is rotate in reverse direction, then it may cause the damage of driven equipment or the damage the output of the driven equipment. To avoid this we may use this reverse rotation device which is avoid the reverse rotation of 3Ph induction motor which is majorly used in industry by using microcontroller & proximity sensors. This is cost effective solution instead of bigger control panel & we can use same for any type & rating of motor. Electric motor is an electrical machine that converts electrical energy into mechanical energy. Most electric motors operate through the interaction between the motor's magnetic field and electric current in a wire winding to generate force in the form of torque applied on the motor's shaft. Electric motors can be powered by direct current (DC) sources, such as from batteries, or rectifiers, or by alternating current (AC) sources, such as a power grid, inverters or electrical generators. An electric generator is mechanically identical to an electric motor, but operates with a reversed flow of power, converting mechanical energy into electrical energy

1.1 OBJECTIVES

The objective of the project reverse recovery of motor has 'to protect the motor from rotate in opposite direction'. Main purpose of this project will be to stop motor to rotate in reverse direction. In present time to overcome this situation VFD are used, which are very high priced. In our project we are doing this work in very cost-effective price and easy to operate

II. LITERATURE SURVEY

Author yen-chuan chang and ying-yu tzou presents a new sensor less starting method for brushless DC motors without reversing rotation for unidirectional applications. The method can detect the rotor position at standstill and a specific start-up method is then used to accelerate the motor up to a middle-speed where conventional sensor less control algorithms based on the back- EMF can work properly. The proposed scheme employs only one current sensor at DC-link side of the inverter, and can be applied to a motor without knowing its parameters and additional position sensors. As compared with previous approaches, the presented technique can simplify the sensor less position detection procedure and lower the cost. The proposed initial rotor position detection technique has a resolution of 30 electrical degrees, and does not cause any rotor vibration during the detection process. The sensor less starting scheme has been implemented on a single-chip DSP controller (TMS320LF2407A) and experimental results reveal that the starting procedure can work smoothly without temporarily reversing rotation

Ching-Tai Chiang discusses the influence of reverse rotating field on the vibration of separated phase

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

SMART BLIND STICK

Sneha Patil[*1], Uday Patil[*2], Pratik Patil[*3], Najim Mullani[*4],
Sangram Bhosale[*5], Prof. N.S Jadhav[*6]

[*1,2,3,4,5]Students, Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India).

[*6]Assistant Professor, Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute Panhala (Maharashtra, India).

ABSTRACT

Nowadays, there is a need for a Private Mentor for a blind person. This project presents a smart stick for a blind person. Most of us, who are normal and healthy can reach the destination easily but visually impaired people who cannot Walk independently face problems in their daily lives. They will be in need of continuous help and companionship till they reach their desired destination. This System is designed to detect the obstacle and provides the live location of a person in case a person goes out of the desired location. Whenever an obstacle is found in the path of a blind person, it alerts him through a buzzer, and in case of an emergency, the exact location of the person is tracked by GPS and sent to the caretaker through the GSM module. There is a continuous ongoing interaction between the microcontroller and these modules. So, when the switch is pressed, the GPS module tracks the latitude and longitude of the location where the blind person is standing and sends it to the microcontroller which converts it to a form of Google map link and sends it to the predefined mobile number of the caretaker with the help of the GSM module. The Ultrasonic sensor frequently senses the obstacles within the corresponding range which is set in the Arduino. If any obstacles are found, create a buzzer sound with the vibration of the blind stick so that it can alert the blind person about his surroundings. This system cost is less, gives a fast response, is easy to handle, and is affordable to blind persons.

Keywords: GSM, GPS, Microcontroller, Sensors.

I. INTRODUCTION

A survey by WHO (World Health Organization) carried out in 2011 estimates that in the world, about 1% of the human population is visually impaired (about 70 million people) and amongst them, about 10% are fully blind (about 7 million people) and 90% (about 63 million people) with low vision. The main problem with blind people is how to navigate their way to wherever they want to go. Such people need assistance from others with good eyesight.

These days, visually impaired people deteriorate from serious visual impairments preventing them from traveling individually. In like manner, they need to use a wide range of tools and techniques to help them in their mobility. One of these techniques is orientation and mobility specialist which helps the visually impaired and blind people and trains them to move on their own independently and safely depending on their other remaining senses. Recently, many techniques have been developed to enhance the mobility of blind people that rely on signal processing and sensor technology.

We are providing a solution to this by presenting the “Smart Blind Stick”. This stick consists of various sensors like an ultrasonic sensor, a water sensor with a GPS-GSM module, and with Arduino board with an integrated Atmega 328 microcontroller. The sensor senses the obstacle and gives a signal to Arduino and notifies the user through a buzzer. GPS gives the location of the blind person in case the person goes out of the convenient location. In this system, GSM will help to track the location of the person handling the stick.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 07 | July - 2022 Impact Factor: 7.185 ISSN: 2582-3930

IOT Based Smart Food Dryer

Rohit Anil Koli[1] , Rushikesh Deepak Patil[2],
Omkar Rajkumar Wale[3] , Prof. P.P.Kulkarni[4]
Student, Electrical Engineering Sanjeevan Engineering & Technology Institute[123]
Professor, Electrical Engineering Sanjeevan Engineering & Technology Institute[4]

Abstract: The solar drying system utilizes solar energy to heat up air and to dry any food substance loaded, which is not only beneficial in that it reduces wastage of agricultural produce and helps in preservation of agricultural produce, but it also makes transportation of such dried produce easy and promotes the health and welfare of the people. This paper presents the design and construction of a domestic passive solar food dryer. The dryer is composed of solar collector (air heater) and a drying chamber containing fruits and vegitables trays both being integrated together. The air allowed in through air inlet is heated up in the solar collector and heaters through the drying chamber where it is utilized in drying (removing the moisture content from the food substance or agricultural produce loaded). The design was based on the hybrid system. which is more reliable system is obtained for proper design specification. Locally available materials were used for the construction, iron body of container(painted), inlet and outlet fans (air ventilation system), mild steel metal sheet and net trays for wastage.

Keywords: Solar drying; Solar collector; Agriculture produce; Optimum temperature.

I Introduction

Drying is one of the method of food preservation .Drying system preserve foods by removing enough moisture from food, the key is to remove spoilage .Drying of food, the key is to remove moisture as quickly as possible at a temperature that does not seriously affect the Flavour, texture and color of the food .Conventional method of drying such as sun Drying, hot air convection drying requires more time to completely dry the product.

In this paper, we designed a dryer for fast and efficient drying of agricultural products. we use a reduced pressure environment (vacuum) for drying the agricultural products which enables the liquid to evaporate without elevating the temperature. combined with heat vacuumcan be and effective method of drying. The smart dryer dries the products without losing its quality. The low cost of smart dryer makes it suitably for use in industrial as well as householdpurposes. The time required for drying is reduced as compared to conventional methods. The device mainly consists of a vacuum chamber, vacuum pump, heat source, temperature and humidity control system and some auxiliary systems. Compared with the conventional methods, this device just needs a small area and it can work under a completed indoor situationof natural environment. It shows high practical value and social economic benefits.

Drying is the oldest preservation technique of agricultural products and it is an energy intensive process. High prices and shortages of fossil fuels have increased the emphasis on using alternative renewable energy resources. Drying of agricultural products using renewable energy such as solar energy is environmental friendly and has less environmental impact.

Sun drying is a popular and economical method for drying of food materials in the developingcountries. But drying rate is very low and dependent on weather conditions. Inferior quality of sun-dried products is mainly due to uneven drying, mixing of dust and dirt, and contamination with insects and microorganisms.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 07 | July - 2022 Impact Factor: 7.185 ISSN: 2582-3930

Single Phase to Three Phase Converter

Gaurav Anil Kamble[1], Digvijay vilas Patil[2], Rushikesh Uttam Nalavade[3]
Raj Sarjerao Powar[4], Tushar Ramchandra Patil[5], Prof. A.M.Bhandare[6]

Student, Electrical Engineering Sanjeevan Engineering & Technology Institute[12345]
Professor, Electrical Engineering Sanjeevan Engineering & Technology Institute[6]

Abstract - This paper presents a converter topology for driving a three-phase motor load from a single-phase supply. It consists of a rectifier and an inverter circuit. The front-end rectifier is to provide a DC link voltage through a split capacitor. The two-leg inverter converts this Dc link voltage into 3 phase supply. This converter can run a three-phase Induction motor which is much more efficient compared to a single-phase motor. In this paper, two closed-loop controllers are employed to achieve balanced output voltage. Among those two closed-loop controllers, one is for maintaining the DC link voltage constant and, the other is for inverter output. Therefore, the single-phase to three-phase converter brings the controllable output voltage as in a six-switch standard three-phase inverter. The front-end rectifier has the capability of active input current shaping. The designed converter model is simulated by using MATLAB Simulink software.

I Introduction

In the past, single-phase to three-phase conversion systems were made possible by the connection of passive elements capacitors and reactors with autotransformer converters. Such kind of system presents well know disadvantages and limitations. Both have the advantages of simple structure and reasonably low cost. Since the beginning of the solid state power electronics, the semiconductor devices were the major technology used to drive the power processors. Looking at the semiconductor devices used in the former controlled rectifiers and comparing them with the new technologies it makes possible to figure out the astonishing Development. Beyond the improvement related to power switches, it was also identified a great activity in terms of the circuit topology innovations in the field of three phase to three-phase, single phase to single phase and three-phase to single phase conversion systems. The single-phase induction motor drives by the three-phase induction motor drives in some low-power industrial applications. When the three phase induction motor is driven by a single phase induction motor by rotary phase converters and autotransformer capacitor phase converters, this causes more loss as compared to the new this method. Motor drives constitute a predominant load for the agricultural sector. As most rural communities in the India are supplied with single-phase ac power, these drives have to be realized with single-phase motors, or with three phase motors (Induction Motors) driven by phase converters. Autotransformer capacitor phase converters, however, cannot easily obtain balanced output voltage with reasonable cost, and rotary converters are heavy and have significant no-load losses, also both topologies have high inrush current during motor start up. The three-phase induction motors have some advantages in the machine efficiency, power factor, and torque ripples compared to their single-phase counterparts. Though the precise control of single phase induction motor is less complex in comparison to the three phase induction motor, but when the torque requirement is considered then three phase induction motor is the best choice. The applications for these motors cover almost every stage of manufacturing and processing. It is not surprising to find that among all type of electric

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

11-STAGE MULTILEVEL INVERTER

Y.R. Naik[*1], A.M. Naik[*2], R.M. Mane[*3], A.R. Dorugade[*4], S.E. Gurav[*5], A.B. Suryawanshi[*6]

[*1]Professor, Department Of Electrical Engineering, Sanjeevan Engineering And Technology Institute, Panhala, Maharashtra, India.

[*2,3,4,5,6] Student, Department Of Electrical Engineering, Sanjeevan Engineering And Technology Institute, Panhala, Maharashtra, India.

ABSTRACT

This topology consists of a full-bridge multi-level inverter, as an auxiliary circuit. The cascaded multilevel inverter is connected after the dc power supply. The main point of the auxiliary circuit is to generate half level dc supply voltage. According to the switch on-off conditions the output voltage levels should vary. The switch in auxiliary circuit must be properly switched with respect to the direction of the load current. From the above all discussion, we can eliminate considerable number of harmonics and we can reduce THD. we can deduce that in cascaded multilevel inverter topology with right switching angle and conduction period take from the calculation based on Fourier analysis. It has the several features such as reduced total harmonic distortion, near sinusoidal type output voltage waveform.

Keywords: Cascaded Multilevel Inverter, Reduced Harmonic Distortion.

I. INTRODUCTION

In this paper, an experimental investigation has been carried out on single-phase multilevel inverter to obtain 11-level output voltage using cascaded four H-bridge units. The suggest system includes of four cascaded H-bridge MOSFET-based voltage sources inverters, a microcontroller-based Arduino imitation, four separate input DC sources and isolating circuit. The gate drive signals for MOSFETs of the four H-bridge inverters are generated by using ATmega microcontroller-based Arduino board. The microcontroller is used to reduce the difficulty of generating gate drive signals for multistory levels of inverter output voltage. 11-level output voltages have been exist from tentative works. It is found that the proposed system requires a smaller number of power switching devices and total harmonic distortion is reduced with increasing number of levels at the output voltage of the multilevel inverter. Power electronic converters, especially DC/AC inverters have been extending their range of use in industry because of their numerous advantages. They typically the stair-case type voltage waveform which has lower harmonic content. This project aims to extend the knowledge about the performance of 11 levels Cascaded H-Bridge multilevel inverter topology with Arduino. The PWM pulse will be generated by using Arduino. The output voltage is the summation of the voltage that is generated by all bridge. The switching angles can be pick out in such a way that the total harmonic distortion is decrease.

A new single phase cascaded multilevel inverter based on novel H-Bridge unit is used. The cascaded multilevel inverters have received special observation due to the reusability and clarity of the control. The cascaded multilevel inverters are mainly categorized into two parts: symmetric; with the equal magnitude for the dc voltage sources and asymmetric with different values of the dc voltage sources. By increasing the magnitude of dc voltage sources (Author-Ebrahim Babaei) [1]. In this project they use multilevel DC-AC inverter is proposed. The proposed multilevel inverter generates 7 level ac output voltage. The motive of multilevel topology is to reduce voltage rating of power switch. Therefore, it usually uses at high power application. By integrating output voltages in multilevel form, it has edge of low dv/dt, low input current deformity, and lower switching frequency. As a outcome of advantages of multilevel topology, several topologies have emerged in recent years (Author-Cheng-Han Hsieh) [2]. A cascaded H-Bridge with SPWM technique is presented. In Cascaded H-Bridge multilevel inverter, Number of H-Bridges are linked in series. Each H-Bridge having different DC supply which is to be acquire from any natural sources, ultra-capacitors, fuel cells or batteries to generate inverted ac output voltage. The advantage of these method is any capacitor or diode is not required for setting purpose. AC output waveform is like a sinusoidal in nature if number of level increases even we don't purify it. Multi-level inverters are used for high power as well as low power application in renewable energy sources such as wind, solar and

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

EV CHARGING STATION

Pramod Guarav*1, Hemant Parab*2, Piyusha Desai*3, Aniket Sabhasad*4, Atul Kumbhar*5, Aniket Jambhale*6, Omkar Patil*7, Ajay Kadam*8

*1Professor, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

*2,3,4,5,6,7,8Students, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

ABSTRACT

Solar charging station will be applied as a charger for electric powered vehicle. The solar panel will harvest energy from the solar that will be saved a battery % of automobile. In this undertaking erection of metallic shape with set up of solar panels became finished as in step with design.

Battery voltage for electric car is chosen as 48 volts. Charging voltage decided on on the idea of car battery Voltage. As per charging requirement 1000 watts, 3 panels of 330 watts are decided on with open circuit voltage as 46.3 volts and short circuit current as 9.24 Amp. To rate an electric powered automobile solar controller related among solar panels and battery package. This solar charging station can be commercialized to be positioned alongside a dual carriageway, or customized for an in-residence set up. Our group erected whole charging station, initiated from civil paintings, mechanical work and sooner or later electrical work. In this task work we obtained the information with interdisciplinary approach.

Keywords: Harvest, Erected , Interdisciplinary Etc.

I. INTRODUCTION

Population wise India stands second inside the global. The primary source of earnings for maximum of the population remains farming in India. Current agriculture systems are operated manually which consumes huge amount of time, cash and power. In India there is massive difference among overall electricity deliver & demand to the farming. In many regions strength reduce down maintains for extra than 8hrs.[1] The current era makes use of fossil gasoline in many elements of India, which creates air pollution. So, it higher to use renewable supply of electricity authorities also encourages its use in various sectors, including automation irrigation gadget for the farming. Solar power is the maximum ample source of power inside the world solar electricity isn't always simplest an answer to todays strength crisis but also an environment pleasant shape of power photovoltaic generation is and efficient approach for the use of the sun strength.[2]

The environmental blessings of charging stations that commonly run on sun energy. Decreased dependence on fossil fuels, Every day jogging expenses honestly are for all intents and purposes lower in a suitable way.[3] The load on traditional grids also receives reduced in a main manner. Apart from this, pretty large scale implementation will boom employment opportunities without a doubt because of the need for educated human beings for installation, preservation and operation of those stations, virtually opposite to famous notion. Considering the blessings and the supply of the sort of system, pretty many corporations actually are making an investment on this concept, which within reason considerable. Tesla Motors, a subsidiary of Tesla, The critical part is building solar-powered charging stations in handy locations for its EV clients, which is quite considerable.[4] This assignment will similarly efforts to reducing our dependence on fossil fuels. If our charging station can price greater devices without having outside strength from the countrywide grid, it will likely be capable of lessen a number of the call for for electricity .Most of the peoples aware about the outcomes of the use of oil and herbal gas as a shape of strength. These strategies do create masses of electricity, however they may be non-renewable and they effects in broken the environment and earth environment.[5] The objective of this undertaking is to rate the vehicles environmentally secure in an effort to assist to lessen the demand of strength from different techniques. Our goal for this task will generate electricity from sun energy.

Our layout changed into confined to what assets had been available for us. Luckily, the majority of the device for this device became provided through our main and the Electrical Engineering Department. We firstly estimated a much larger system with a couple of sun panels and batteries to offer a quick price time for the e-rickshaw, car. [6]We ended up the use of best 444W, 12 sun panels and 40 Ah deep cycle battery. The primary components of

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 2, Issue 1, June 2022

Impact Factor: 6.252

Solar Panel Cleaner Using Vibrator and Air Blower for Desert Location

Pramod Guarav[1], Amruta Salavi[2], Sneha Pavane[3], Pranil Sutar[4], Ritika Hugar[5], Priya Kamble[6]

Professor, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra[1]

Students, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra[2,3,4,5,6]

Abstract: *Solar panel is vulnerable to accumulated dust on its surface. The efficiency of the solar panel gradually decreases because of dust accumulation. Accumulation of dust and debris on even one panel in an array reduces their efficiency in energy generation considerably and emphasizes the need to keep the panel's surface as clean as possible. In this paper, a smart panel cleaning system for PV that provides a cost-effective and scalable solution for the removal of soil and dirt. It will automatically and remotely remove the dirt at a fraction of the cost of manual cleaning. In this paper, an Arduino based solar panel cleaning system is designed and implemented for dust removal. The proposed solar panel cleaner is waterless, economical and automatic. Two-step mechanism used in this system consists of an exhaust fan which works as an air blower and a vibration to detached the dust from the panel surface. Since, the system does not need water to clean solar panel, it avoids the wastage of water and effective in desert areas. In terms of daily energy generation, the presented automatic-cleaning scheme provides about 30% more energy output when compared to the dust accumulated PV module.*

Keywords: Solar panel, Cleaning, Efficiency, Dust, Air blower, etc.

I. INTRODUCTION

To ensure sustainable environment, solar energy can play a vital role because it is an enormous, inexhaustible and green source of energy. In commercial level, 10 to 13% conversion can take place in solar cell. Efficiency of outdoor installed PV modules is reducing by 10 to 25% [1]. Efficiency of solar panel is decreases due to the dust. Dust is nothing but particulate matters. Dust consists of substance which present in air and includes smoke, fog. Inorganic and organic substances. Such substances are collected and dust can be formed. Also, dust can be included volcanoes vapors, forest fires, smoke, bacteria, storms, pollen and sand. For long period, dust can be present in air; atmospheric particles which are suspended solid can be included here. Through the wind movements, dust particles can be move and transfer to long distances. Atmospheric condition such as clouds, dust and temperature is affected to solar panel efficiency. Due to the atmospheric condition, all solar energy we can't be use. The mechanism primarily consists of air blower and vibration motion for cleaning on a glassy surface. In our project power loss can be less in amount. Our project is also self-reliant and for use it is very easy.[2]

A water-free automated cleaning service unit, comprising two DC geared motors, a lead screw, supporting shaft, rack and pinion mechanism, and the cleaning task is completed using blower and vibrator. These are hybrid actuators that provide rotary-to-linear motion through suitable mechanical transmission arrangements.[3]

Efficiency of solar panel is depending on the natural condition. So, it is necessary to take care parameters like dust, humidity and temperature. We used Atmega328 board for cleaning of solar panel. Our project includes design and implementation of solar panel cleaner. The actual goal is developed automatic solar panel cleaner. Manually solar panel can be clean but big disadvantage is risk of staff accidents, hard work and man power can be required. To overcome this all disadvantages, we can make automatic solar panel cleaner. It is more effective, smooth cleaning, and avoids the irregularities in the productivity due to the deposition of dust. Our system is work very smoothly.[4]

In recent years, photovoltaic technology has advanced fast for power generation from sunlight. There are mainly three cleaning methods, i.e., mechanical cleaning [5], nano-film based self-cleaning [6] and electrostatic cleaning [7,8]. Compared with other methods, mechanical method has a large dust removal force, rapid operation, good environmental adaptability and control performance.

DOI: 10.48175/IJARSCT-4575

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:06/June-2022 Impact Factor- 6.752 www.irjmets.com

TRANSMISSION LINE MONITORING SYSTEM USING IOT

Sakshi Powalkar*1, Pranali Kamble*2, Mayuri Khilare*3,
Akshata Kamble*4, Arvind Bhandare*5

*1,2,3,4B.Tech Student, Electrical Engineering, Sanjeevan Engineering And Technology Institute Panhala, Kolhapur, Maharashtra, India.

*5Asst. Professor, Electrical Engineering, Sanjeevan Engineering And Technology Institute Panhala, Kolhapur, Maharashtra, India.

ABSTRACT

The electrical power system is growing and complexity in all sectors such as generation, transmission, distribution, and load systems. The detection and location of faults on power lines is essential to the protection and maintenance of a power system. In an electrical power system, a fault current is an abnormal electric current. In this system, some device uses like sensors to sense the current (in amp) and voltage (in volt) continuously of transmission line. Our system will detect if any voltage drops or overload on transmission line, if any these types of faults occur it can detect it and trip the line by using relay. Furthermore, if there are thefts occurs on line it can be detected automatically and intimated to the authority person with location by using Internet of Things. Location of theft is essential in case of power system. Detection of fault in the transmission line has been proposing by programming Arduino UNO and Arduino MEGA. Arduino senses the change in current and voltage as per programming and provides information to LCD. The device is measures incoming and outgoing values and find abnormalities with the help of sensors. Fast monitoring can help to protect power system. This is the concept of impedance method fault detection system. This fault and detection of theft is very fast.

Keywords: Internet Of Things, Arduino UNO, Arduino Mega.

I. INTRODUCTION

Modern electric system is growing up exponentially [1]. Electrical power transmission line is a critical link between power generation plants and distribution to all electricity users. Length of transmission line is long and there is a possibility of fault occurrence. These faults cause giant damage to expensive equipment and damage stability [2]. So, fault should monitor quickly and isolate faulty line. It is important to protect the transmission system. Sensors can take accurate measurement of an electrical parameters and transfer information to IOT. Sending information to control room in appropriate time is a difficult challenge [3]. The theft of electricity is a big problem of power system. Theft is the major concern of the transmission and distribution losses in the supply of electricity [4]. All electricity companies face this issue and losses money every year due to theft. Electricity is being stealing with bypassing. This system is utilizing to overcome this type of losses of electricity, and it is very beneficial for the authorized agency to control its revenue loss. Proposed system is uses for identifying faults, thefts and if there is any fault occurs line will trip or isolate immediately, this work is complete by relay operation. It will protect transmission line against damage. Recommended system also detect theft, if there is any taping online for electric power theft it will intimate to the authority person of control room with location by using Internet of Things (IOT) system. Detection of theft is integrating with IOT mechanism. Thus, we must take care of transmission line to reduce losses for efficient system, this proposed work, i.e., IOT based transmission line fault detection system may be the solution [5]. Most methods of fault detection and location based on measurements of electrical quantities provided by current and voltage transformers [6].

II. METHODOLOGY

a) Current methods-

1) Impedance based fault location method

In the impedance-measurement-based technique, the voltage and current during pre-fault and fault are analyzed. Parameters of the line can be calculated with the transmission line model. Impedance-based required the following approach.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 07 | July - 2022 Impact Factor: 7.185 ISSN: 2582-3930

Automatic Source Selector with Real Time Battery Parameter Monitoring

Akash Sadashiv Patekar[1], Jadhav Dinesh Digambar[2], Prajval Sanjay Patil[3],

Manjunath Murlidhar Kamble[4] , Siddhant Maruti Khot[5], Metakari Vishal Tukaram[6]

Student, Electrical Engineering Sanjeevan Engineering & Technology Institute[12345]
Professor, Electrical Engineering Sanjeevan Engineering & Technology Institute[6]

Abstract: Source selection is the problem of identifying a subset of available data sources that best meet a user's needs. In this paper we propose a user-driven approach to source selection that seeks to identify sources that are most fit for purpose. The monitoring board measure the battery parameter using the divider circuit and series resistor And this measured data send to blink app by esp8266 wifi module. The Source Selector circuit using monitoring board measured parameter's Collected data is Compared with permissible limits in ATmega328P. According to this data ATmega328p gives signgal to the relay to operate operate load.

I Introduction

For a very long time, power outages, power interrupts and also unexpected routine power line maintenance is one of the major problems faced in industries, hospitals, offices, and homes whole over the world. For that case, this project provides an automatic operation of electrical power distribution systems; the rapid and reliable transfer of the system from one power source to another during specific events such as power outages, power interrupts, routine power line maintenance, to achieve the reliability of such systems. Electrical power supply is one of the primary essential needs of human life today, that is to say, without electrical power supply, most human works become stand still, postponed and even cancelled since most human actions are dependent on the electrical power supply. Furthermore, the need for power supply through access to electricity by the masses of the population of any country, both developed and developing countries is very important to the development of the economy of that particular country.

In other words, the power sector plays an essential role in the social economic development of any country. Why Is Battery Monitoring Important? Battery monitoring is important because it helps to predict the state of health and inevitable failure. Depending on battery type and application, Lead Acid batteries have a design life that can range dramatically - from 5 to 20 years. That design life estimation is based on the battery being maintained in accordance with recommended practices, operating under ideal conditions and ensuring that any individual failing units are replaced before they impact the other units in the string. However, in most installations, those conditions are seldom met, and the actual life of a battery may be closer to half of the published design life. This potential for failure has been confirmed in a number of studies over the years. In fact, in one study into Data Center failures, the UPS Battery was responsible for over 50% of the reported outages. This data, and the uncertainty of most operating environments, confirms why battery monitoring is an essential part of maintaining. The project is designed to automatically supply continuous power to a load through one of the four sources of supply that are: solar, mains, generator, and inverter when any one of them is unavailable. Four switches are used for four respective sources. These are connected to a microcontroller of 8051 family that provides input signals to it. Whenever a switch is pressed it shows the absence of that particular source. A relay driver is used that receives microcontroller generated output and switches that particular relay to provide continuous power supply. A lamp is used as a load for demonstration purpose which draws power from main. When main fails to supply power, automatically next available source is used say inverter. If inverter fails then the next one is used and so on. An LCD is also used to display which source is being currently used for power supply. Therefore, this project provides an effective solution to provide an alternative power supply during frequent power cuts.

II Literature Survey

The unreliable public power supply has led many to the alternative power supply sources .manual changeover switch system still remains the oldest changeover switch box used by majority of the electricity consumers. Manual changeover switch box separates the source between a system

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:07/July-2022 Impact Factor- 6.752 www.irjmets.com

POWER GENERATION BY USING REVOLVING DOOR

N.S. Jadhav*1, Abhishek Kupade*2, Akshay Lad*3

*1Professor, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

*2,3Students, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.

ABSTRACT

Humble world requires a ton of energy in various stages to run their occupation. So this handyman portrays the change of strong energy into mechanical energy which can be once more changed over into helpful electrical energy. The sustainable power and some unpredictable wellspring of energy likewise give revitalize economy to environment adjustment and lessen the utilization of petroleum derivative. The principal objective of this task is to plan and manufacture a smaller than expected rotating entryway which can create energy by intensifying the underlying RPM of entryway shaft that tackles human movement and transform it as power.

Keywords: Energy Generation, Dynamo, Gear, Pinion, Revolving Door.

I. INTRODUCTION

Energy is crucial for the advancement of a country and it must be rationed in a most capable way. Not just the advances ought to be created to deliver energy in nearly climate amicable way however we need to get from all assortments of energizes and furthermore most extreme ought to be given to ration the energy assets in the strict turn of events. most effective way. Energy is a definitive component liable for both modern and horticulture. The environmentally friendly power innovation to fulfill the energy needs have been consistently expanding for the beyond couple of years, notwithstanding, the significant downsides related with inexhaustible. Energy frameworks are their powerlessness to ensure dependability and their lean nature. In this day and age meeting implies for delivering energy by customary strategies are declining step by step. Entryway based power age unit is uniquely intended to plan and manufacture the change unit for using the accessible non-customary energy source. That is immensely accessible energy in low force with adequate amount can be used. This machine changes over responding movement in to revolving movement. The rotational power is put away in flywheel and flywheel pivot alternator that produce power. The men coming on the way apply the effect power or push on the projected instrument. This effect pressure energy can be used to work the rack and pinion outfitting and through the train of pulleys can work the fly wheel, which stores the energy and uses it for ceaseless pivot of the generator working pulley and belt transmission framework. This wellspring of force can be utilized at the shopping centers, universities or lodgings and doubtlessly by the emergency clinics entryway working frameworks. Additionally by aggregating this low force power in batteries, it tends to be provided to the large towns or in towns where shortage of electric stock. This creation connects with implies for using the excess energy which is consumed by people utilizing spinning entryways, gates and such, by making that overflow energy be applied to the age of force for work in valuable way. From perception in huge structures furnished with spinning entryways, as likewise at rail route stations, ship houses, entertainment meccas and different spots whose doorways are protected by gates, a lot of labor supply, in overabundance of that required, is imparted as motivations to these gadgets for their turn, and that a portion of this overflow force be placed into valuable impact. Hence the creation comprises of mounting a power wheel co-pivotally with connection to a rotating component, like a spinning entryway or gate and giving a pawl on said power wheel for commitment by said rotating component to impart to the power wheel, the motivations got by the rotating component in the manual activity of the last option. Energy subsequently conferred to the power wheel is to be communicated there from by reasonable means either for the age of power or in any case for work reason man has required and involved energy at a rising rate for his food and prosperity since he came on the earth a couple a long time back. Crude man required energy principally as food. He determined this by eating plants or creatures, which he chased. Consequently he found fire and his energy needs expanded as he began to utilize wood and other bio mass to supply the energy needs for cooking as well with respect to keeping himself warm. With the progression of time, man began to develop land for agribusiness. He added another aspect to the utilization of energy by taming and preparing creatures to work for him. With additional interest for energy, man started to involve the breeze for cruising ships and for driving windmills, and the power of

Design Analysis and Optimization of SUV Chassis

Abhijeet Bapuso Chopade
PG Student
Department of Mechanical Engineering
Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, India

Ajit Ashok Katkar
Assistant Professor
Department of Mechanical Engineering
Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, India

Koli G. C.
Assistant Professor
Department of Mechanical Engineering
Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, India

Ranjeet Baburao Chougule
PG Student
Department of Mechanical Engineering
Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur, India

Abstract

Generally, with in the Automotive Industry weight reduction, cost of engineering design and reduction in vehicle development cycle time are getting increasingly focused on. In order to tack le this, Computer-Aided Engineering (CAE) is popularly being used to lead the design process. This is more efficient than simply, using CAE as a verification tool. The Crush Box Analysis is carried based on the basic principle of FMVSS by using Finite Element Method. Federal Motor Vehicle Safety Standards (FMVSS) are U.S. federal regulations specifying design, construction, performance, and Sturdiness requirements for Automobile and Controlled Automobile safety-related components, systems, and design features. The Solid work software is used for CAD modeling and ANSYS software is used for FEA analysis. Evaluate the results by changing thickness and design of the crush box. Von misses stress and deformation, by comparing the results that can suggest that using Rohacell 110 IG foam in crash box of the chassis absorbs optimum stress and more energy than others.

Keywords: FMVSS, Chassis, Foam, Von Misses

I. INTRODUCTION

This study scrutinizes vehicle chassis assembly in the automotive industry. The building of vehicle chassis in the automotive industry is the subject of intense research. It concentrates on the upsurge of Chassis and the implications for vehicle manufacturing and customer order satisfaction. Today's Chassis must have a high strength-to-weight ratio and rigidity and be cost-effective and simple to manufacture. Unfortunately, five Indian cars including the Mahindra Scorpio failed the Worldwide New Car Assessment Program's crash tests (NCAP). Global NCAP has given Hyundai Eon, Maruti Suzuki Eeco, Maruti Suzuki Celerio, SUV and Renault Kwid zero stars for safety. The Global New Car Assessment Program aims to promote public safety and health as well as the conservation and improvement of the natural environment, in particular by:

Establishing & carrying out autonomous study and evaluating programs to examine the safety and environmental aspects of automobiles, as well as their comparative performance and communicating the findings to the public Fostering new automotive evaluation programs by giving financial and technical support and enabling international collaboration with and among these programs.

II. LITERATURE REVIEW

The literature review for the dissertation project outlined in the previous chapter falls under this heading.

1) Hari Kumar A. et al.[1] in this study analyzed ladder-type chassis frame for the TATA Turbo Truck by employing ANSYS 14.5‟ package. According to findings, the Rectangular Box section of the Ladder Chassis has greater strength than the C and I Cross-section types. For Aluminum Alloy 6063-T6. The design stages of conceptualization and formulation are efficiently addressed using finite element analysis.
2) Syed Altaf H. et al.[2] investigated alternative chassis materials. Carbon/Epoxy, E- glass/Epoxy, and S-glass/Epoxy as chassis materials were examined and analyzed in different cross-sections such as C, I and Box Section. TATA 2515 EX chassis have been used in the study. For this project, Pro-E and Ansys software were employed. It is noted that in comparison to other materials and cross-sections, the Carbon/Epoxy I section Chassis offers more remarkable results in all para-

frontiers | Frontiers in Public Health

ORIGINAL RESEARCH
published: 25 April 2022
doi: 10.3389/fpubh.2022.885212

Multichannel DenseNet Architecture for Classification of Mammographic Breast Density for Breast Cancer Detection

Shivaji D. Pawar[1,2], *Kamal K. Sharma*[3]*, *Suhas G. Sapate*[4], *Geetanjali Y. Yadav*[5], *Roobaea Alroobaea*[6], *Sabah M. Alzahrani*[6] *and Mustapha Hedabou*[7]

[1] Department of Computer Science and Engineering, Lovely Professional University, Jalandhar, India, [2] SIES Graduate School of Technology, Navi Mumbai, India, [3] School of Electronics and Electrical Engineering, Lovely Professional University, Jalandhar, India, [4] Department of Computer Science and Engineering, Annasaheb Dange College of Engineering and Technology, Sangli, India, [5] NMC Royal Medical Centre Karama, Abu Dhabi, United Arab Emirates, [6] Department Computer Science, College of Computers and Information Technology, Taif University, Taif, Saudi Arabia, [7] School of Computer Science, Mohammed VI Polytechnic University, Ben Guerir, Morocco

OPEN ACCESS

Edited by:
Thippa Reddy Gadekallu, VIT University, India

Reviewed by:
Clement Nyirenda, University of the Western Cape, South Africa
Xiao-Zhi Gao, University of Eastern Finland, Finland

***Correspondence:**
Kamal K. Sharma
kamal.23342@lpu.co.in

Specialty section:
This article was submitted to Digital Public Health, a section of the journal Frontiers in Public Health

Received: *27 February 2022*
Accepted: *14 March 2022*
Published: *25 April 2022*

Citation:
Pawar SD, Sharma KK, Sapate SG, Yadav GY, Alroobaea R, Alzahrani SM and Hedabou M (2022) Multichannel DenseNet Architecture for Classification of Mammographic Breast Density for Breast Cancer Detection. Front. Public Health 10:885212. doi: 10.3389/fpubh.2022.885212

Percentage mammographic breast density (MBD) is one of the most notable biomarkers. It is assessed visually with the support of radiologists with the four qualitative Breast Imaging Reporting and Data System (BIRADS) categories. It is demanding for radiologists to differentiate between the two variably allocated BIRADS classes, namely, "BIRADS C and BIRADS D." Recently, convolution neural networks have been found superior in classification tasks due to their ability to extract local features with shared weight architecture and space invariance characteristics. The proposed study intends to examine an artificial intelligence (AI)-based MBD classifier toward developing a latent computer-assisted tool for radiologists to distinguish the BIRADS class in modern clinical progress. This article proposes a multichannel DenseNet architecture for MBD classification. The proposed architecture consists of four-channel DenseNet transfer learning architecture to extract significant features from a single patient's two a mediolateral oblique (MLO) and two craniocaudal (CC) views of digital mammograms. The performance of the proposed classifier is evaluated using 200 cases consisting of 800 digital mammograms of the different BIRADS density classes with validated density ground truth. The classifier's performance is assessed with quantitative metrics such as precision, responsiveness, specificity, and the area under the curve (AUC). The concluding preliminary outcomes reveal that this intended multichannel model has delivered good performance with an accuracy of 96.67% during training and 90.06% during testing and an average AUC of 0.9625. Obtained results are also validated qualitatively with the help of a radiologist expert in the field of MBD. Proposed architecture achieved state-of-the-art results with a fewer number of images and with less computation power.

Keywords: breast cancer, BIRADS Density Classification, DenseNet, deep learning, multichannel architecture, mammographic breast density

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

CRM for Online Jewellery Shop

Mukul Kamble[1], Omkar Jagtap[2], Akash Patil[3], Gourav Nikam[4], Neel Chavan[5], K.B. Kari[5]

[1,2,3,4,5]B.Tech student, Computer Science and Engineering, SETI, Kolhapur, Maharashtra, India
[6]Guide, Dept. of Computer Science and Engineering, Sanjeevan Engineering and Technology Institute, Kolhapur, Maharashtra, India

---

Abstract - *The main objective of this paper is to study Customer Relationship Management (CRM) practices on Jewellery Shops. The Jewellery sector is the largest consumer sector in country like India, except foods and medical sectors. The Jewellery sector is fundamental part of nation's economy. The survey method was used to collect data form jewellery shops and customers. Competition is increasing day by day in all the sectors, as increase in demand people realizes the importance of Customer Relationship Management (CRM). Customer Relationship Management (CRM) is a combination of policies, processes, and strategies implemented by an organization to unify its customer interactions and provide a means to track customer information. Customer Relationship Management (CRM) is an emerging tool that enables marketers to maintain their presence in the dynamic marketing environment. The goal of Customer Relationship Management (CRM) is to ensure customer satisfaction & delight at every level of interface with the company/shop. Customer Relationship Management (CRM) is high on the corporate agenda. Recent research carried out by Business Intelligence reveals that six out of ten companies have already started out on the Customer Relationship Management (CRM) journey.*

Key Words: **CRM, Time saving, Business Intelligence, Customer Information, Marketing, Jewellery sector, Online Shopping, E-Commerce .**

1. INTRODUCTION

Today, precious stones and jewellery is a global industry, with gold, diamonds, platinum mining operations in Africa, Russia, Canada and Australia, Poland and the jewellery industry in the United States, Israel, China, India and Turkey, as well as retail sales around the world. The share of this industry is more than 15% of all our exports, and employs more than 1.3 million people. It is second only to information technology (IT) related to exports, and is 3.75 percent to our Gross Domestic Product (GDP). Gold jewellery represents about 80 per cent of the market, while the rest is scattered jewellery with diamonds and precious stones. India is the world's largest centre for diamond processing (cutting and polishing), where more than 57 percent of untreated diamonds are processed at the factory.

The Customer Relationship Management (CRM) system has transformed the way venders deal with their clients. With the ever-growing evolution of the internet surge, business corporations stand to snatch various amenities on the board. CRM for the jewellery industry also keeps a considerable impact. It is vital for business to opt for a jewellery CRM system.

Using CRMs, you are set to manage the sales process and keeps customers in a centralized database. Moreover, CRM strikes to collect the best services to help businesses manage their priceless relations with clients. They cover almost every industry with specific skills to serve more reliably.

2. LITERATURE SURVEY

Pahuja, Anurag(2008) opines that customer relationship management encompasses certain characteristics aspects. He says that business necessity regardless of whether one sells to end -consumer or to enterprise customers.[1]

According to KPV Ramanakumar (2008), Customer Relationship Management is an emerging tool that enables retail marketers to maintain their presence in the dynamic market environment. In early days CRM was the tool preferred by the manufacturers in order to motivate and retain retailers. Now retailers are applying this very same tool in order to retain customers.[2]

Ms. Preeti Srivastava(2013) explains that technology had played fundamental role in e-retailing. The rapid changes in consumer's shopping behaviour and attitude witness the shift in shopping attitude and perception for buying goods of various kinds including inexpensive goods like clothes, watches, sun-glasses or any other household goods and expensive goods viz. kitchen appliances, digital gadget, electronics items or jewellery. The study puts light on the jewellery buying behaviour of online shoppers of Lucknow. The study also wraps up main factors for their attitude towards shopping behaviour.[3]

Prof. Nilesh Anute and Dr. Anand Deshmukh (2015) writes on CRM practices towards selected gems & jewellery retailers. There research was conducted in Pune city and a survey method was used to collect the data from 20 Gems

RESEARCH ARTICLE OPEN ACCESS

Property Rent Sale Application

Aasiya Peerzade [1], Dipali Patil [2], Akshata Khot [3], Swapnali Majgaonkar [4], Dnyaneshwari Patil [5], Asst. Prof Pallavi D.Patil [6]

Department of Computer Science & Engineering, Sanjeevan Engineering & Technology Institute-Panhala, Maharashtra.

ABSTRACT

In late time, android based application are getting more extensive prevalence and relevance across scope of issue areas. However, literature Investigation shows that most existing property rent sale solutions on android based, and very few designed for android platform. Text existing, android based property rent sale lack capacity to display property on map, and lack management system. As the technology is being progressed the lifestyle is evolving accordance. Presently we can submit the request for anything from our home.

Keywords **-** Mobile App, Property, Images, GPS.

I. INTRODUCTION

Property Rent Sale is an Android base project which is made for buying online plot, flat, farm, houses etc. through internet. As the innovation is being progressed the lifestyle is evolving accordance. Now a-days we can put in the request for anything from our home. There is no need to go physically to place to buy property. The order of any property can be placed online through the internet. The way of buying any property was completely changed with the coming of internet technology. People have to fill simple form through the mobile app to place for property which they want to buy. Now they can place the order from home. This paper entitled "Property Rent Sale" is an implementation of the given description.

II. LITERATURE REVIEW

The Journal of Real Estate, 1991. Each year some residential real estate agents distinguish themselves by superior performance.Leading Residential real estate sale Agent and market performance: Loading residential real estate, The Journal of Real Estate in 1991 describes Each year some residential real estate agents distinguish themselves by superior performance.[5] Equality and time to sale in the real estate market: Proposed a pro-cyclical link between sale value and price [Equality & Search] [1994]. On the distinctive and puzzling features of the housing market is the dramatic variation in real price and sale value over time [3].The URBAN LAND Market Rents & prizes ,Micro mic Analysis of property markets in 1996 describes Market of land and houses are often to as completely product Differentiate because search product sold in the market is unique[4]. Rental Housing: Essential option for the poor in developing countries, Housing the poor [2011]. How people experience it in cities How do land lords workout their rental arrangement.[2]. Determination of rental value for residential properties. A land owner perspective for boarding homes [Built Environment] [2016]. Represent the most basic of human need and it has performed impact on health welfare and productivity of individual. [1].

III. PROPOSED WORK

"Property Rent Sale Application" is a mobile (portable) application and this will be save both time and resources. It makes direct correspondence between the seller and the buyer and both have an arrangement and keep their arrangements straightforwardly. If you are unfamiliar in some cities and want to rent a house rather than making it difficult to find the right time. It is additionally hard to discover buyer or renter on time for the seller. This application will provide complete information about house, rooms, plots etc. Hence there is a need to develop a "Property Rent Sale Application". So the entirety of their work is for the most part done successfully and proficiently.

User can directly contact to the seller or the buyer through chat option provide in this application. This feature making their process easy.

In this application we have provided location map. So the user can easily get the property information.

Advantages:

1. Greater efficiency.
2. Security of data.
3. Minimize manual data entry.
4. Minimum time needed for the various processing.
5. Better Service.
6. Minimum time required.
7. User friendly and interactive.

This application will help the owner and seller to overcome difficulties

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 07 | July 2021 www.irjet.net p-ISSN: 2395-0072

Donation through Watching Ads

Kiran Thorat[1], Amol Ambekar[2], Vijay Surywanshi[3], Suresh Patil [4], S.S.Pujari[5]

[1,2,3,4]B.Tech Student, Computer Science and Engineering, SETI, Panhala, Kolhapur ,Maharashtra, India
[5]Guide, Dept. of Computer Science and Engineering, Sanjeevan and Engineering and Technology Institute, Panhala, Kolhapur, Maharashtra, India

---

Abstract - *The importance of doing things for others not just for ourselves it represents the basic principle of our Indian culture to help the peoples which are in troubles. By understanding the values and principles of our Indian culture we discover the platform like a* Donation through Watching Ads*.* Donation through Watching Ads *is the platform where people can help us to help needy people by just watching ads. The fund which is raised by the watching ads is used to strengthen the education, health and environment system in India.* Donation through Watching Ads *is a nonprofit organization supported by community leaders, corporate sponsors. Become a volunteer by registering on helping Ad's platform & select a cause to donate. It operates at a high level of accuracy and the user associated with the system understands its advantage. It was intended to solve the problem as per requirement specification and successfully saves a lot of time, manual effort, and extra expenses. The system fulfils the requirement which is needed for helping peoples in online mode. This* Donation through Watching Ads *Web Application can also modify as to android application. So that, we can access it from anywhere and from any device.*

Key Words: Ads, Causes, Donate,

1.INTRODUCTION

In India, most of the people who are suffering from poverty cannot afford to pay for a single meal a day. Also, they sleep on the roadside; wear dirty old clothes. In addition, they do not get proper healthy and nutritious food, neither medicine nor any other necessary thing.

Help the poor. This should be our primary goal, for that we discover the platform like a 'DONATION THROUGH WATCHING ADS'. Donation through watching ads is a nonprofit organization supported by community leaders, corporate sponsors. Become a volunteer by registering on donation through watching ads platform & select a cause to donate. Donation through Watching Ads will donate the money to your selected cause by watching ads.

You don't need money to make a difference in someone's life! Just start watching ads on our platform and we will help the helpless peoples. The fund collected by watching ads is used to support Indian healthcare to fight against deadly diseases, to strengthen the education system and for work on ecosystem restoration.

2. LITERATURE SURVEY

Andreasen and Kotler [2003] argue that all donors give because they expect tangible or intangible benefits in return, including for example public recognition, self-esteem, or relief from feelings of guilt[1]

Guy and Patton [1989] argue that the strongest motive to donate is the deep-seated human need to help others. This intrinsic motivation is far stronger than extrinsic factors such as tangible or intangible rewards. The most effective activator of this intrinsic motivation is thus an appeal to this need to help others. For nonprofit organizations, this means that donors must perceive the organization's cause as worthy of help, in which case their motivation translates into behaviour, i.e. a monetary donation.[2]

Sargeant [2001] warns not to be too optimistic about online fundraising, as its success depends to a large extent on on-site traffic. He argues that only organizations that offer critical information, e.g. health-related organizations, will have high site traffic, which may results in sizable online fundraising volumes[3]

3. PROBLEM DEFINITION

The existing system which doesn't donate any fund from watching Ads to helpless people, but we help people by just watching daily Ads on our platform. By understanding the values and principles of our Indian culture we discover the platform like a Donation through Watching Ads. Donation through Watching Ads is the platform where people can help us to help needy people by just watching ads. The fund which is raised by the watching ads is used to strengthen the education, health and environment system in India.

4. OBJECTIVE

The main objective of the system is to manage the Users, Advertisers, Ads, Daily Watch Count of Each user, also

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

Prediction Based Sugar Cane Farming in Western Maharashtra Using Data Mining

Prof.M.M.Hajare[1] , Sucheta S. Patil[2], Snehal S. Patil[3], Rutuja A. Jadhav[4], Aishwarya S. Sawant[5], Mohini A. Chougule[6]

[1]Assistant Professor, Department of Computer Science & Engineering, Sanjeevan Engineering & Technology Institute Panhala(MH, India)
[2,3,4,5,6] Student, Department of Computer Science & Engineering, Sanjeevan Engineering & Technology Institute Panhala(MH, India).

Abstract: In India, Most of Indians have agriculture as their occupation. The present paper deals with the prediction based farming by using data mining method. This research focuses on evolution of a prediction model which may be used to predict sugar production. The proposed method use data mining technique to predict the sugar production based on the association rules and k-means clustering.

The main objective of this paper is to study on Sugar prediction and farmers issues related to their sugarcane crop. Farmers can register their crop through paper or they will particular go to in sugar industry to registration. In our model, farmers can register to the system at any time and provide accurate information to industry. Through this information our model predict the sugar production in that industry and also help to harvesting team to make cluster data.

Key Words: Sugarcane crop information, Prediction analysis, Profit margins, Market price, Association rules, K-means clustering algorithm.

1. INTRODUCTION

Agriculture is very important because it produces food and feed which is necessity to animals and human beings. It fulfill the basic need of billions of people. It is one of the major contributor to the country's GDP and economic growth. Hence, it is widely practiced in India.

India is the second largest producer of sugarcane crop and produces about 20% of the world's sugarcane. With new regulatory policies and amendments in the older ones, there is a greater chance for farmers and millers to increase their efforts toward cane sugar production and processing. The sugar industry supports an estimated 12% of the rural population in the nine states of the country namely, Punjab, Uttar Pradesh, Maharashtra, Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, and Tamil Nadu.

Normally, farmers can guess the final yield by their experience of growing particular crop again and again. Farmers yield prediction accuracy is low and not cost effective. To meet the sugar requirements of the entire population of the country and for the export to other countries, it is important to practice modern methods of farming by using technology instead of practicing traditional farming methods. Modern methods allows the farmers to cultivate the crops in small area with minimum amount of water ,fertilizers and pesticides ,which finally produces good yield and profit to the farmers.

Our system is developed based on the data mining concepts to predict sugarcane yield. With the data obtained from industries, it is divided into sample and verification data sets. System is tested on verification data and the predicted values are compared to actual values. System takes current location of farm land, number of hectares of land and crop decided by farmer to grow as an input from the farmer in the web application which is an interface between farmer and the system. By the provided data and earlier trained data, the system is well understood to produce solution. Thus, algorithm analyzes the final values and predicts the yield per hectare and total values of cultivated crop based on the current market price.

2. PROBLEM STATEMENT

To Design, Develop and Implement the training model by using different inputs data. So system will able to learn the features and extract the sugarcane crop yield from the data by using data mining techniques.

3. OBJECTIVE

The proposed system aims at predicting or forecasting the crop yield by learning the past data of the farming land. Here we make use of different data mining techniques such as Association Rules, K-means clustering. Performance is evaluated based on predicted accuracy.

'IOT BASED POWER THEFT DETECTION AND TRACKING'

#Department of Electrical Engineering, Sanjeevan Engineering And Technology Institute, Panhala under Shivaji University Kolhapur, Maharashtra, India
Prof.P.P.Kulkarni H.O.D. Electrical Department

Prof.P.B.Gurav Project Guide Electrical Department

Students Name

1. *Bugade Vaibhav Balasaheb*
2. *Wadar Dasharath Balu*
3. *Thambale Shubham Omprakash*
4. *Bava Vishal Krishnat*

Abstract— **Electricity is one of the most widely theft in the world, it comes from transmission and distribution. In our country, the highest electricity theft is in distribution. Electricity companies face significant economic crisis every year due to electricity theft. Electricity Theft we cannot stop even by taking meter readings correctly because the distribution company does not know which customer is honest or dishonest. But this project is designed to prevent those who theft the electricity mainly on pole wires. In this project we will steal electricity as well as where the electricity was stolen and we will show it through this project. We are doing this project so that the distribution officer and workers, has to look for places where electricity is stolen for this, they have to use a lot of motorcycles if they see that the cost of fuel is increasing day by day and the extra cost of that fuel is the loss of the distribution company. So we have done this project to reduce it.**

Keywords— **IOT, GSM, CONTROLLER, MICROCONTROLLER 8051.**

1. INTRODUCTION

THERE ARE MANY OPERATIONAL LOSSES IN TRANSMISSION AND DISTRIBUTION SYSTEM, WHICH CAN SHOW THE DISADVANTAGES OF GENERATION, BUT WE CANNOT QUANTIFY THE LOSSES IN TRANSMISSION AND DISTRIBUTION. THIS MEANS THAT THE NOT-TECHNICAL LOSSES OCCUR NATURALLY AND THE TRANSFORMER LINES ARE DUE TO THE LOSS OF ENERGY IN THE TRANSFORMERS AND OTHER POWER SYSTEM COMPONENTS. THE TECHNICAL LOSS OF TRANSMISSION AND DISTRIBUTION IS RECORDED FROM THE TOTAL LOAD AND THE CUSTOMER'S BILL INFORMATION. WE MUST REMOVE THAT ELECTRICITY THEFT IS A SOCIAL LOSS. POWER CONSUMPTION AND LOSS SHOULD BE CLOSELY MONITORED SO THAT ELECTRICITY CAN BE UTILIZED SUFFICIENTLY. THIS SYSTEM CAN PREVENT THEFT OF ELECTRICITY. AT THIS POINT OF TECHNOLOGICAL DEVELOPMENT THE PROBLEM OF ILLEGAL USAGE OF ELECTRICITY CAN BE HUMAN CONTROL USING GSM AND IOT.

2. LITERATURE REVIEW

Here are different papers articles available related to IOT BASED POWER THEFT DETECTION AND TRACKING construction working principle and it's application which are helpful for determining the scope of project work and defining the problem statement.

In the paper [1], "Identification of Energy Theft and Tampered Meters Using a Central Observer Meter: A Mathematical Approach", Transmission and distribution conference and exposition, 2003 IEEE PES, vol. 1, pp. 163-168,2003, The author C. J. Bandim, E. R. Alves ., A. V. Pinto, F. C. Souza, M. R. B. Loureiro, C. A. Magalhges and F. Galvez-Durand. In this paper the power loss find out by comparing the total load and total energy bill.

In the paper [2], IOT based Power Theft Detection. The author R Giridhar Balakrishna, P Yogananda Reddy, M L N Vital.. International Journal of Innovations in Engineering and Technology (IJIET) ISSN: 2319-105, Volume 8, Issue 3, June 2017. Today's life is impossible to imagine without electricity. With the increase in use of electricity the immoral practices against it has increased. According to a survey conducted by Outlook in 2015 the world loses about 81$ Billion to theft of electricity. The highest electricity theft occurs in India of about 19$ Billion followed by Brazil 15$ Billion. This huge amount of electricity theft considerably affects the growth of a country specially a developing country. In India 30% of the total power transmitted is lost to AT&C (Aggregate technical and commercial) loss the highest in the world. Due to all this losses India is not able to meet the electricity demand and there are frequent power cuts.

In the paper Electricity Theft Detection on a Low Voltage Reticulation Environment. The anther RIAAN (W.A.) DOORDUIN 2004. Electricity theft is basically an illegal way of getting the energy. Resulting in loss for utility companies. Losses consist of technical and non technical losses. Annually there are about $25 billion of losses in the world. Losses can

IOT BASED SOLAR PANEL MONITORING AND CONTROLLING

Utkarsha Powalkar[1] , Pradnya Mevekari[2], Mayuri Farakte[3], PROF. D.M. Kerutagi[4]
1, 2, 3 Student of Department of Electrical Engineering, Sanjeevan Engineering and Tech. Institute, Panhala, Kolhapur.
4 Assistant Professor Department of Electrical Engineering, Sanjeevan Engineering & Tech. Institute,Panhala, Kolhapur.

Abstract- ***The purpose of this paper is discussed about automatically monitoring, controlling using iot, and how to increase the efficiency of the solar panel. The efficiency of the solar PV module is greatly affected by the environment factors (solar radiation and operating temperature) and another one main factors is dust. These environmental factors will be reduced the electrical efficiency of PV panel due to increase in operating temperature of PV panel. To obtain increased electrical efficiency, the PV panel needs to be cooled by removing the excess heat. The common PV panel cooling method is used water cooling. The second affecting factor is dust, the accumulation of dust on PV panel reduces the efficiency and reduction of power output, thus resulting in loss of power generation. To avoid the reduction in electrical efficiency due to dust we are going to use wiper mechanism.***

Keywords: *efficiency, iot, temperature, pv panel, wiper mechanism.*

1. INTRODUCTION

To get an effective power output solar power plant need to be monitored and controlled. While monitoring for faulty solar panels, connections, dust accumulation, and high temperature on panels we get lower output and other various issues that affect solar performance. So here we propose an automated IOT based solar power monitoring system that allows for automated solar power monitoring and controlling from anywhere over the internet. We use micro-controller AVR atmega16 controller based system to monitor and control solar panel parameters. The efficiency of PV panel is not only strongly depended on solar radiation, but also depends on the operating temperature of PV panels. The effect of low PV cell efficiency due to excessive heating from solar radiation and high operating temperatures. Reduces electrical efficiency, so in that case the PV panel needs to be cooled by removing the excess heat. The common PV panel cooling methods are water cooling, air cooling, and heat pipe cooling. here we used water sprinkler which helps to reduce higher temperature that exceeds above 45 degree automatically by means of Microcontroller. Microcontroller command is passed to relay (ON/OFF) and relay to water sprinkler ON this help to reduce high temperature due to this efficiency of solar panel increased by 3 to 5%.

The major problem is dust accumulation on solar panel, due to this gain at output is low, this leads low efficiency so to overcome this problem of dust accumulation. We used wiper mechanism which cleans panel automatically, so at the output we get 5 to 10% increased efficiency on the solar panel.

IOT BASED TRANSFORMER PARAMETER MONITORING

[4]Department of Electrical Engineering,Sanjeevan Engineering And Technology Institute,Panhala under Shivaji University Kolhapur, Maharashtra, India

Prof. P. P. Kulkarni H.O.D Electrical Engineering
SETI, Panhala.

Department of Electrical Engineering,Sanjeevan Engineering And Technology Institute,Panhala under Shivaji University Kolhapur, Maharashtra, India

Students Name. 1. Patre Nilesh Ananda, 2. Paundakar Rahul Ramdas
3. Powar Roshan Sardar, 4. Teli Dnyanesh Bhikaji
5. Tonape Roshan Bhimarao

Abstract—. This system is about design and implementation of a mobile embedded IOT Based system to monitor and record the bullet word of the distribution transformer namely line currents of all phases, line voltage, oil level, transformer winding temperature and ambient temperature. The system is totally based on IOT , with a single chip microcontroller and different sensors. It is installed at the distribution transformer site and the above parameters are recorded using the analog to digital converter (ADC) connected to microcontroller and obtained parameters are recorded in system memory and output is available on liquid crystal display (LCD).

Keywords-.-**IOT,Microcontroller,ADC,LCD,Sensors, LM35….etc**

1. INTRODUCTION

In a day to life electricity is most important and that protection is quite important in whole electrical system from generating station to distribution side i.e consumer side. Hence it is necessary to monitor the operating condition of distribution transformer when it is loaded. Distribution transformer are one of most important equipment in power network because of large no of transformer distributed over a wide are in power electric system, transformer condition monitoring and controlling is most important issue. Now here transformer are damaged due to oil damage. Oil damage depend on different parameter and environmental condition. Now in this system we are concentrating on temperature of transformer and viscosity of oil. In this system temperature and viscosity monitoring and control action is perform based on microcontroller .In this some sensors are used which is connected to the microcontroller.

2 Microcontroller

Fig.1 AT89S52 microcontroller

The AT89S52 comes from the popular 8051 family of atmel microcontrollers.It is an 8-bit CMOS microcontroller with 8k as flash memory and 256 bytes of RAM. Since it is similar to the trust worthy 8051 architecture these microcontroller are two operating mode namely one is power down mode and second is idle mode respectively. Features od this microcontroller is pins is 40,RAM is 256 bytes, program memory size is 8k flash, architsecture is 8, CPU 8-bit 8051 family.

International Journal of Advances in Engineering and Management (IJAEM)
Volume 2, Issue 6, pp: 263-267 www.ijaem.net ISSN: 2395-5252

Multifunctional Induction Machine

Darshan A. Gaikwad[1], Nitin K. Gawade[2], Akshay S.Jadhav[3], Vaijnath B. Naik[4], Chetan B. Desai[5], Prof. Mr.Prasad P. Kulkarni[6]

Electrical Engineering Department, SETI Panhala, Maharashtra, India
Corresponding author: Darshan A. Gaikwad

Date of Submission: 02-09-2020 Date of Acceptance: 20-09-2020

ABSTRACT:-A three phase ac motor or asynchronous motor is an electric motor in which the rotating magnetic field is produced in the air gap between stator and rotor the current in the rotor is needed to produce torque is induced by RMF generated by the stator winding. The aim of this paper is to present an redesign model for the analysis of Stator winding of induction motor which is redesigned and motor is used as three phase IM,single phase IM,Phase converter as well as welding transformer.

Keywords: Double winding Induction machine; Winding design;Capacitor;Multiphase machine

I. INTRODUCTION

Three phase induction motors are the most frequently encountered in Industry. They are simple and easy to maintain. Recently, multifunction machines may have been received great deal of attention. Generally, multifunction induction machines have been introduced a long time ago. The multifunction induction machine has the double layer stator winding. As we know three phase a.c motors receive electric power from three phase a.c. supply. A three phase induction motor has two main parts: a stationary stator and rotating rotor.

In today's world, in industries an induction motor and the welding transformers are frequently used in the industries for their own applications. To meet their requirement they are used separately in the industries which increases the installation cost of the industry.To overcome this difficulty we are going to implement our proposed model to operate three functions on the same induction motor. The use of multipurpose motors is very convenient for used in mega workshops. Hence the cost require for two machine gets reduces. Also an approach towards the motor performance gets increases.

The principle of operation of three phase induction motor which is works upon the application of Faraday's law of electromagnetic induction. The stator winding are connected to the three phase supply and the rotor circuit is short circuited, the induced voltages in the rotor windings produce rotor current that interact with the air gap field to produce torque. As the induction motor is nothing but generalized transformer, this same concept can be used to implement the motor as welding transformer In fact, an induction motor can be treated as a Rotating transformer i.e. one in which primary winding is stationary but the secondary is free to rotate. As the induction motor is nothing but generalized transformer, this same concept can be used to implement the motor as welding transformer. Welding transformer requires low voltage (50 to 60volts) and high current (upto-A) for joining of two metal parts using electrical welding.

The same motor we can be used as single phase induction motor. The running and starting winding of the single phase operation are placed in same slots that are used for the three phase operation. So at a time giving supply as per for our required operation anyone of them can used to produce excitation in order to start rotation of rotor.A three phase converter is a device that produces three phase electrical power from a single phase source, thus allowing the operation of three phase equipment at a site that only has single phase electrical service these were static phase converter and they have changed little since time. Over the years, other technologies have been employed as a phase converter. There are two common types of phase converter one is static phase converter and second is rotary phase converter.

II. DETAIL MACHINE DESIGN

The main focus of this paper is to design the model of multifunctional induction motor with double layer windings in the same stator and conventional squirrel cage rotor.

DOI: 10.35629/5252-0206263267 | Impact Factor value 7.429 | ISO 9001: 2008 Certified Journal

Water Management and Theft Detection System

#Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala under Shivaji University Kolhapur, Maharashtra, India

Proff. N.S. Jadhav Electrical engineering

SETI, Panhala.

#Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala under Shivaji University Kolhapur, Maharashtra, India

1.Krishna Anandkishor Tiwari, 2.Sanket Tukaram Jadhav

Abstract-

The Water supply to residence and Commercial establishments are provided at a fixed flow rate. There are incidents of extra water drawn by certain users by connecting motor pump to waterlines, which is considered as water theft. In this project it is proposed to develop an embedded based remote water monitoring and theft prevention system by recording water flow rate. In order to implement proposed water supply system each consumer be provided with embedded based water flow monitoring system consisting of a microcontroller to record flow rate using flow sensor and to transmit the same to the Arduino which is also provide with electrically operated solenoid valve to supply water to consumer. The valve turns ON/OFF to stop the water supply, whenever the flow rate exceeds the predefined limit. It is proposed to employ with GSM modem for wireless communication that the information can be passed to particular responsible officer's cell phone for immediate action.

Keywords- *Water flow sensor, Arduino, relay module, LCD I2C module, Solenoid valve...etc.*

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 05 | May 2021 www.irjet.net p-ISSN: 2395-0072

AUTOMATIC LIGHT SWITCHING AND TEMPERATURE BASED FAN SPEED CONTROL USING MICROWAVE, TEMPERATURE AND LDR SENSOR

Siddharth Remane[1], Radhika Sutar[2], Pranav Joshi[3], Digambar Patil[4], Yogesh Naik[5]

[1-4]B-Tech student, Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala.

[5]Professor, Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala.

Abstract - *Since energy is the driving force for necessities, ease and comfort the use of energy has tapered and hence most of the times we tend to disgrace its use, hence the following paper will discuss and emphasize a method for automatic switching of lighting system and temperature apparatus, by checking for the intensity of sunlight, detecting human presence and controlling fan speed depending on the temperature of the room. Our design can be categorized into human detection circuit using Microwave sensor (RCWL-0516), LDR based light detection circuit to detect the sunlight and temperature sensor (DS18B20) based speed control of fans along with its switching circuits. There will be two modules associated, first will be a combination of Microwave sensor and LDR for lighting fixtures and the second module will be a combination of Microwave sensor and a temperature sensor for fans. The basic idea behind this project is to conserve the amount of power which is otherwise wasted in case of absence of an entity or human behaviors. The system will restrict the turning ON/OFF of the lights utilizing sunlight entering the room and turning ON/OFF the fan automatically based on the temperature detected. The design gives the user its flexibility to choose the modes of operation either automated that is based on sensors or just the conventional switching.*

Key Words: Microwave Sensor, Temperature sensor, LDR, Light Intensity, Energy Conservation, Doppler Effect.

1. INTRODUCTION

Automation in the recent years has become a leading trend. Since undertaking of one machine replaces a significant amount of man power, automation has developed its roots and propagated its influence in all the sectors of industries, commerce and now in residencies too. Wherein the generation is made at the most efficient end it is a challenge to transmit this generated supply and above all utilizing the supply efficiently is now, a task. Around the total percentage of the energy utilization 20% of the energy is wasted just because of the negligence and lack of awareness in the people about energy and its usage.

Let me give you an example to explain how exactly the energy is wasted; when the person goes out from the room and forgets to turn the lights OFF, also sometimes we refrain from getting up just because we are being lazy and the lights/fans remain ON unwantedly. The more the human involvement we reduce the more the errors we are going to reduce and conserve energy undoubtedly thus eventually land up reducing minor electrical accidents. Conservation of the energy is as important as generation because generation completely depends upon conservation. 19% of energy use in the world is used for lighting, and 6% of greenhouse emission in the world is derived from this energy.

Energy saving has attracted great attention as a global issue because of recent environmental problems. Most of the people are trying to produce energy using renewable sources and actually investing large amounts of finance in such utilities rather people should try to use the energy efficiently since generation is not the concern, but utilization is! Electricity has its core roots in the generation but when the utilization is not up to the mark there is always a burden on the generating capacities of the generating station. Hence utilization needs to be proper enough to ensure energy conservation. Indulging automation in the system will make system more compact. People are now aware of saving energy that is consumed daily or simply conserving energy which was thus wasted unknowingly. We see violation of energy almost in all the sectors whether it be commercial or industrial. Hence to overcome this power loss we either intentionally have to turn off the lights while leaving the room or just find out a better solution to overcome this power loss which thus leaves us with just one option getting automation in the system. Also this adds up in the account like, indulging automation in the system makes the system more effective and renders it clutter free.

2. CONCEPTUAL DETAILS

2.1 COMPONENTS USED

i. **Arduino Mega-2560:** The Arduino Mega 2560 is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

SMART NOTICE BOARD USING RASPBERRY PI MODULE

[1]Omkar S. Bhutkar,[2]Vipul V. Khot,[3]Bhagyashri A. Patil, [4]Snehal S. Shingare, [5]Asst. Prof. P.P.Kulkarni

[1,2,3,4] UG Student, [5]Asst.Prof. P.P.Kulkarni

[1,2,3,4,5] Department of Electrical Engineering,

Dr. Babasaheb Ambedkar Technological University, Lonere

Sanjeevan Engineering & Technology Institute,Panhala,India

Abstract: Notice boards are playing very important role in our day to day life. By replacing conventional Analog type notice board with digital notice board we can make information dissemination much easier in a paperless community. Here the admin can control notice board through internet. So information can be send anywhere in the world and can be displayed within seconds. Information may be in the form of text, image, pdf etc. PC is used for sending information and Raspberry pi is connected to internet at the receiving side. In addition to this an application which is installed on the admin's mobile phone can serve the same purpose. This application also contains a speech to text converter .So the admin can send text messages through his/her own voice.

Keywords- Notice, Board, Digital, IoT Based

I. INTRODUCTION

In educational institutions, the organization use circulars and notice boards for conveying information to the students. This methodology takes additional time for updating also many students may not be aware of the information displayed on notice boards due to non-eye catching notices. Digital Notice board is one of the ways of displaying notices in which the notices are display on a LCD Display Screen. These notices are changed dynamically .We have to only type the notices and send that notice for displaying on display screen. The Display screen and the System are connected with the help of the different mechanisms. Also another advantage is that more than one notice is visible on the screen as the notices scroll across. Notice board is an essential information gathering system in our life. In our day-to-day life we can see notice boards in various places like, educational institutions, railway stations, shopping malls, Bus stations, offices etc. So we can say that Notice boards are the places to leave public information such as advertise events, announce events or provide attention to the public, etc.

Now days a Separate person is needed to stick those information on the notice board. It will lead to lose of time as well as usage of manpower. In conventional analog type notice boards paper is the main medium for information exchange. We know that information counts are endless. So there is a usage of huge amount of paper for displaying those endless counts of information. The problems faced by the wooden or conventional type notice boards are resolved by the implementation of our digital notice board. It will bring an advanced means of passing notices around in the world in a much easier and efficient way. Due to the popularity of internet, we choose internet as a medium for transferring information. The Internet of things (IoT) is the network of physical devices, vehicles, home appliances and other items embedded with electronics. Software, which enables these objects to connect and exchange data. Each device is uniquely identifiable through its Embedded computing system but is able to inter operate within the existing Internet infrastructure For provide security, we add username and password type authentication system. So only respective authority can send information. Raspberry pi which is the Heart of our system. A monitor is interfaced with Raspberry Pi. So information in the form of text, image and pdf can display on the large screens. Our primary aim is to get more people's attention on the display. By the usage of high definition display devices people can get more attention on the notice board rather than conventional notice boards. In conventional wireless notice board can display only texted messages. But in our newly implemented system can display images and pdf documents in addition to text messages. Because in Educational institutions majority of information given from the higher authorities in the form of images or pdf format. So displaying these types of information make our system more user friendly. Due to the utilization of internet the sender can send message anywhere in the world. There is no range limitation for the successful exchange of information.

Everyone knows what a mirror is. It is an object found in most people's homes. In mirrors, we see our reflections. But what happens when you combine the idea of a mirror with technology? What possibilities are there and how smart could a mirror be? These are some of the questions that inspired my choice of final year project, a project which aimed to develop a smart mirror notice board and a small operating system to power it. The main goal of this project was to [illegible]

International Journal of Research in Engineering, Science and Management
Volume 4, Issue 6, June 2021
https://www.ijresm.com | ISSN (Online): 2581-5792

GSM Based Automatic Energy Meter Reading and Instant Billing System

Snehal Sunil Patil[1], Ashitosh Ramchandra Sutar[2*], Vishal Bhimrao Powar[3], A. A. Toraskar[4]
[1,2,3]Student, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Kolhapur, India
[4]Professor, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Kolhapur, India

Abstract: **Now-a-days, electricity energy demands requested from down-stream sectors in a smart grid constantly increase. And that is ultimately increasing the load demand on the distribution centres. With this increasing demand on smart grid the Advanced Metering Infrastructure (AMI) has turn into the initial ever-present and permanent platform for performing computational operations. Power theft is one of the most significant concerns connected to the implementation strategy of smart grid. The utility companies lose more than $15 billion every year due to power theft around the world based on the estimation data gathered. The Household data automatically reading is important in the process of power system information. It is also an urgent problem that power industries want to solve because the exactness and real time of meter data copy have an effect on the power system information level, management decisions, and economic benefits. To take necessary precautionary actions against these issues the Automatic Meter Reading (AMR) technology is proposed. The energy meter is designed for reading electrical energy consumed in units and in rupees to display on an LCD screen to the user. This data is also provided to the electrical department using GSM technology for billing purposes. In this proposed system, the consumer will get his energy consumption data on real time basis on a LCD display. The same data is sent through GSM modem to the electricity department via SMS. An Arduino UNO is interfaced to the energy meter to get the Watt Hour pulses. The Arduino UNO then processes these pulses according the program written in it, to calculate the units consumed and cost involved. The same data will be sent to the electricity department through the GSM modem via SMS after command given by the Arduino UNO.**

Keywords: **Energy Meter, DB9 connector, Arduino UNO, GSM Modem, e-metering, SIM, Automatic Meter Reading (AMR), LCD.**

1. Introduction

The electrical metering instrument technology has come a long way from what it was more than 100 years ago. From the original bulky meters with heavy magnets and coils, there have been many innovations that have resulted in size & weight reduction in addition to improvement in features and specifications [1]. The existing system has, manual meter reading systems using electro-mechanical meters are installed within the premises of residential or commercial consumers and data on information consumption are collected on a monthly basis. Manpower must be hire to go from domestic after domestic to read energy consumption, record data and communicate with a receiving module. Use of manual meters may possibly convert to meter reading mistakes and errors of leakage [2]. The technology of e-metering (Electronic Metering) has gone through rapid technological advancements and there is increased demand for a reliable and efficient Automatic Meter Reading (AMR) System. This paper presents the wireless GSM energy meter and its associated web interface for automatic billing and managing the collected data. The proposed system replaces the traditional mater reading methods and enables remote access of existing energy meter by the energy provider [3]. Today the metering instrument technology grown up significantly, such that the consumed energy can be calculated mathematically, displayed, data can be stored, data can be transmitted, etc. Presently the microcontrollers or the Arduino UNO are playing major role in metering instrument technology. The present project work is designed to collect the consumed energy data of a particular energy consumer through wireless communication system (without going to consumer house), the system can be called as automatic meter reading (AMR) system.

A. Necessity

1) Existing system

The existing system has, manual meter reading systems using electro-mechanical or digital energy meters are installed within the premises of residential or commercial consumers and data on information consumption are collected on a monthly basis. Manpower must be hire to go from domestic after domestic to read energy consumption, record data and communicate with a receiving module. The block diagram of the existing meter reading system is as shown in fig.1 below.

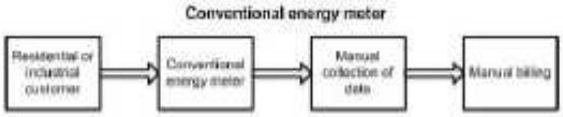


Fig. 1. Existing system

2) Disadvantages of existing system

As an overview this existing system seems to be a simple one. But this traditional system has many limitations as summarized below:

*Corresponding author: ashitoshsutar5006@gmail.com

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

AUTOMATIC PESTICIDE SPRAYING MACHINE

Nishad S. Bargir [*1], Aman S. Vadagaonkar[*2], Kishor M. Kamble[*3]Amol R. Patil[*4], Prof. Mr. Vishal Metkari[*5]

[*1,2,3,4]*Bachelor Student, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.*

[*5]*Assistant Professor, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.*

---------- ***----------

Abstract: The agriculture industry is critical in meeting the population's food needs. There are numerous applications in agriculture where the rate of adoption of new technologies is delayed. Pesticide spraying machines are one of the key applications where modernization is sluggish. Pesticides can be evenly distributed on farms by implementing new innovative techniques in this field. Which lowers pesticide wastage and so minimizes loss of inputs applied on farms, lowering production costs. We employ cutting-edge pesticide spraying technology to achieve increased output with little input.. Nowadays, Indian farmers use antiquated spraying systems and pasties, resulting in pesticide waste and potentially harmful health consequences. Not only have innovations and ideas been developed in this field, but they are not well suited to Indian farming conditions.

Keywords: *Microcontroller, Robot, Agriculture, Sprayer, Farmer etc.*

---------- ***----------

I INTRODUCTION

Agricultural lands are the primary focus of the project. It is quite useful in preventing pest damage to plants. Spraying potentially dangerous chemicals in the restricted space of farm plants is one of the tasks that the robot designed to protect humans from.

The use of chemicals has a tremendous impact on the growth of agriculture in the twentieth century, bringing with it more important benefits, but it also has a negative impact on human health.

STATUS OF AGRICULTURE IN INDIA

India is predominantly an agricultural country, with over 75% of the population dependent on agriculture, either directly or indirectly. For generations, farmers have used the same techniques and equipment. For example, seed sowing, spraying, weeding, and other operations are all performed using the same processes. The development of effective spraying equipment is required for enhanced production.

The bulk of Asia's late-developing countries have a bigger population and lower land productivity than prosperous countries. Reduced productivity is caused by a lack of agricultural electricity and low levels of farm mechanisation, to name a few issues. This is particularly true in India.

STATEMENT OF PROBLEMS

Indian farmers (small, marginal, small and marginal, semi-medium) currently use backpack sprayers that are actuated by a lever. A backpack sprayer is made up of a tank with a capacity of 10 to 20 litres that is carried by two adjustable strapsTo operate this, a constant pumping speed is required, resulting in muscular dysfunction, and the backpack sprayer is unable to sustain pressure, resulting in drifts and dribbling. It takes a lot of effort and time to build up enough pressure. Pumping to operational pressure takes some time as wellFurthermore, while spraying, only a tiny area is covered. Spraying the entire land area takes a long time. Back ache can develop in middle age as a result of carrying a 10-20 litre tank on one's back.

II MODELLING AND ANALYSIS

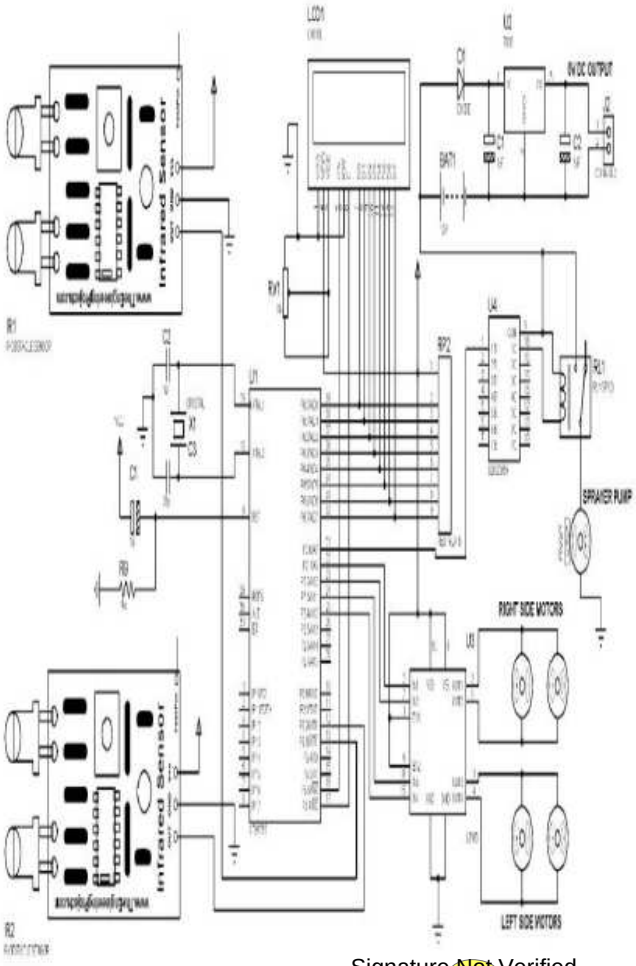


Figure 1: Circuit Diagram

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

THREE PHASE FAULT ANALYSIS AND LOCATION DETECTOR WITH AUTO RESET ON TEMPORARY FAULT AND PERMANENT TRIP OTHERWISE

Pratik L. Patil [*1], Pranav P. Patil[*2], Ranjeetsinh B Dattu [*3]Shreeshailya A Kumbhar [*4], Prof. Mr. Yogesh Naik[*5]

[*1,2,3,4] *Bachelor Student, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.*

[*5] *Assistant Professor, Department of Electrical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, Maharashtra, India.*

Abstract: Failure of any phase in a three-phase system will result in a loss in operating voltage, causing either the device to stop working or a three-phase motor to run at lower voltages, reducing speed and increasing vibration. Our technology is not only designed to cure this issue, but also to protect the appliance from further damage. When a phase fails, the load is immediately turned off; if the phase returns before 5 seconds, the load is switched on because the failure was detected as temporary; however, if the time of failure exceeds 5 seconds, it is treated as a permanent failure because it can cause a problem in the load connected, so it is cut off for a long time until the user presses the reset button; only when the user presses the reset button is it turned back on. As a result, in the event of a transient defect, the project's output resets, while in the event of a persistent fault, it obtains a permanent trip condition.

The project employs the usual concept of Ohms law, which states that when a low DC voltage is provided at the feeder end via a series resistor (Cable lines), the current will be determined by the location of the cable fault. The voltage across series resistors fluctuates as a result of a short circuit (Line to Ground). This is then passed into the Adriano board's built-in ADC, which generates exact digital data for display in kilometers..

Keywords - *Adriano, Relays, Resistors, permanent fault, temporary, etc.*

I INTRODUCTION

The goal of this project is to use an Adriano board to determine the distance of an underground cable fault from the base station in kilometers. In many urban locations, the underground cable system is widely used. When a problem occurs for any cause, the repairing process for that specific cable is tough at that moment.

The basic notion of Ohms law is used in our project, which states that when a low DC voltage is applied at the feeder end through a series resistor (Cable lines), current increases or decreases depending on the position of the cable fault If a short circuit occurs (Line to Ground), the voltage across series resistors changes, which is then transmitted to the Adriano board's inbuilt ADC, which generates precise digital data for display in kilometers.

The project is set up using a collection of resistors that represent cable length in kilometres, and faults are created by a set of switches at each known kilometre to ensure accuracy. An LCD interfaced to the Adriano board displays the fault happening at a desired distance and the associated phase. Not only does our technology fix the problem, but it also protects the appliance from further damage. When a phase fails, the load is immediately turned off; if the phase returns before 5 seconds, the load is switched back on because the failure was only temporary; however, if the time of failure exceeds 5 seconds, it is treated as a permanent failure because it can cause a problem in the load connection. It is turned off permanently at this point, and the system will only restart when the user clicks the reset button again. As a result, in the event of a transient defect, the project's output resets, and in the event of a permanent malfunction, it gets a permanent trip condition.

In the future, this project can be improved by measuring the impedance using a capacitor in an ac circuit, which can even locate the open-circuited cable, as opposed to the short-circuited fault using simply resistors in a Direct Current circuit, as shown in the above proposed project.

Problem definition

This project aims to not only reduce outage time due to defects, but also to provide customers with a higher level of service continuity. Furthermore, successful auto reclosing at high speeds. When it comes to transmission lines, circuits can be the most important aspect in maintaining system stability. Auto reclosing will reclose the circuit into a fault that has not been cleared for those faults that are forever, which may have negative consequences on system stability. The project's main goal is to improve the transmission line's reliability and eliminate the problem. Design: A transformer, voltage regulator, relay, filter, Adriano, diode, resistor, capacitor, and other components are included in the project. A step-down transformer is utilized in this circuit. Their input voltage is 220 volts, and their output voltage is 12 volts. This is due to low voltage fault testing and

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

IoT BASED HAND SANITIZING MACHINE, BODY TEMPERATURE AND HEART RATE MONITORING UNIT WITH FACE DETECTION SYSTEM

Rutuja R Mali[1], Sumit S Mole[2], Priyanka S mane[3], Arifmahamad R Mulla[4], Shrinath M bhopale[5], Prof Nilesh Jadhav[6]

Electrical Engineering Sanjeevan Engineering & Technology Institute[1,2,3,4,5,6]

rutumali9665@gmail.com, sumitmole1782@gmail.com,priyamane1609@gmail.com,arifmahamadmulla@gmail.com

shrinu0255@gmail.com, nilesh.jadhav@seti.edu.in

Abstract: Cleaning or sterilising an object or bodily part, such as hands or the entire body, is referred to as sanitization. Temperature and heart rate monitoring is the process of utilising sensors to measure the temperature and heart rate of a person's body. While sanitization, temperature, and heart rate monitoring were necessary to be automated in order to eliminate person-to-person contact and prevent virus infection.

There is a growing demand for non-contact based hand sanitizer dispensers that efficiently assure zero touch while also keeping hands clean. In addition, a temperature and heart rate monitoring equipment is used to keep track of a person's body temperature and heart rate.

I INTRODUCTION

Automatic facial recognition (AFR) technology has improved dramatically in recent years, and these systems are now frequently employed for security and commercial purposes. For a college, an automated system for human facial recognition in a real-time backdrop to track staff attendance. As a result, Smart Attendance with Real-Time Face Recognition is a practical option for dealing with employees on a daily basis. Because real-time background removal in an image is still a difficulty, the work is extremely demanding. A simple rapid Principal Component Analysis was utilised to recognise the faces observed with a high accuracy rate to detect real-time human faces. The employee's attendance is recorded using the matching face. Employee attendance records are automatically maintained by our system. Manually inputting attendance in logbooks becomes a time-consuming and challenging operation. As a result, we created an effective module that includes facial recognition for managing staff attendance records. The face of the employees is enrolled in our module. This is a one-time registration process, and their image will be saved in the database. Face enrollment necessitates the use of a system because it is a one-time operation. As an employee id, you may use your own roll number, which will be unique for each employee. Each employee's presence will be recorded in a database. The results revealed that the automated attendance management system performed better than the human system. After employee identification, attendance is recorded. Compared to conventional attendance and leave management systems, our software provides far more options with accurate results in a user-interactive way.

Problem Definition:

We studied on the current co-vid situation. The co-vid patient is entering on our collage campus then big problem face to all.

Objectives & Benefits of project.

This initiative has numerous purposes, including: Since the corona virus came out and spread over the world, demand for hand sanitizers has skyrocketed. Hand sanitizers are often administered by pressing a pump with one's hand to spray the sanitizer liquid. As a result, a large number of people come into touch with the pump handle, increasing the danger of viral transmission. As a result, hand sanitizers with an automated pump are compatible. To ensure that the temperature sensed on the transmitter board is presented appropriately on the LCD, the fan will turn on at a particular temperature and the LED indication will work properly. To assure the successful transmission and reception of temperature values using an RF transmitter and receiver.

The Heart Rate Monitoring system was created to detect a patient's heartbeat in order to monitor their heart health. It, on the other hand, keeps track of real-time heartbeats and calculates BPM. The basic goal of a face detection system is to provide a system that uses facial recognition technology to simplify and automate the process of collecting and tracking employee attendance. It is biometric technology that uses a digital picture to identify or authenticate a person. By incorporating IoT into the system, it may be made more secure and efficient. Sensors and small computer processors are included in IoT devices, which act on the data acquired by the sensors.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 06 | June - 2021 ISSN: 2582-3930

Fast Charging of Electric Vehicle

Saurabh Bhoite[1], Akash Shinde[2], Ketan More[3], Pradip Kumbhar[4], Anurag Batte[5], Abhijeet Redekar[6]

Student, Electrical Engineering Dept. SETI, Panhala, Maharashtra, India[12345]

Assistant Professor, Electrical Engineering Dept, SETI Panhala, Maharashtra, India[6]

Abstract - as we seen a development of electric vehicle is a new era of green transportation and also need a support to build a good charging infrastructure. Generally charging mechanism will be provide in to areas i.e. residential and public .As a number of electric vehicles increased we have to increase the public charging stations also, and one major challenge is we have t reduce the charging time of electric vehicle which can be done by increasing the power transfer rate. In this paper we have seen that combination of battery and ultra-capacitor has led to reduce the charging time of electric vehicle. Lithium ion battery and electric double-layer ultra-capacitor is most suitable for doing a fast charging of electric vehicles.

Key Words: Electric vehicle, Fast charging, Charging time, Lithium ion, ultra-capacitor.

1. INTRODUCTION

Due to global warming issue the perspective of public transportation has changed to the greener system. Now days the air pollution of a India has increased drastically. We try to control and India is moving step towards it. Also to the fossil fuel depletion India has changed internal combustion vehicle to the electric operated vehicles. Generally the electric operated vehicles has not only comes under batteries but also using other power sources like as hybrid electric vehicles (HEV)

Mainly the electric vehicles charging have to areas residential charging and public charging. The residential charging means we can charge the electric vehicle in a home. This charging infrastructure is safe and reliable. Also the pubic charging area means there are the charging stations so you can go directly and charge the electric vehicle. As a increasing demand of ev we have work on charging infrastructure of electric vehicle .In this paper we discussed about how we can charge the electric vehicle as fast as possible and give reliable operation to electric vehicle.

CHARGING MODE IN EV`S

Generally electric vehicle charging is stated on two basics mode which has slow charging and fast charging. However in many regions charging station has started to classified in four modes based on its electric characteristics, charging period and charging activity method

Based on charging activity there are two types of methods on board method and off-board method. On mode charging method conducted charging inside the electric vehicles where off-board charging method required the external charger to charge the electric vehicle energy storage system (ESS).

Based on the location, the charging can done in residential area (level 1), public area (level 2) and typical area`s like highway(level 3).

The level 1 means the residential area has operated on single phase 230Vac supply which required almost 6-7 hours to charged full. In public area (level 2) charging stations are build which operated on single phase and three phases 230Vac and 440Vac which required 4-5 hours to charge the electric vehicle. The typical areas will also have operated on three

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 06 | June - 2021 ISSN: 2582-3930

CURD OR YOGURT MAKER

Nilesh S Jadhav[1] , Abhishek S Biraje[2], Shridhar S Patil[3], Jaydev N Vasagadekar[4] , Yogesh Y Patil[5]

Assintant Professor,Electrical Engineering Dept,SETI,Panhala,Maharashtra.India[1]
Students,Electrical Engineering Dept,SETI ,Panhala,Maharashtra[2345]

Abstract - Yogurt or curd is one of the most important fermented milk products in India and have highly beneficial effects on human health. Yogurt or curd is one of the most important fermented milk products in India and have highly beneficial effects on human. There are microorganisms and they demonstrated to positive modulate the intestinal micro flora. The main aim was to study properties of curd and to make healthy curd. The curd is prepared by adding the starter like previous day curd, lemon, curd powder etc. The starter is mixed with the milk which is little bit hot up to 40 degree Celsius. The milk is kept in machine for 1-2 hour for curd production. Then the curd is stored in refrigerator and then it is ready to serve. The curd have so many health benefits and we can eat it daily. The curd has been strongly recommended for curing ailments like dyspepsia, dysentery and other gastrointestinal disorders in Ayurvedas

Key Words: Curd, Fermentated, microorganisms, dyspepsia, dysentery gastrointestinal disorders , Ayurvedas

1.INTRODUCTION

curd is one of the most important fermented milk products in the Indian sub-continent and have been used since the time immemorial. The curd has been strongly recommended for curing ailments like dyspepsia, dysentery and other gastrointestinal disorders in Ayurvedas. This product is also believed to improve appetite and vitality. Some of the beneficial effects of curd are attributed to the antibacterial components formed during the fermentation, low pH that prevents the growth of putrefactive and other undesirable organisms including potential pathogens and increased digestibility.1-3 Curd is a good source of B vitamins, proteins, and calcium which are much easier for the body to digest than when they are present in fresh milk. The curd machine was specifically invented to improve the food standards. The machine can be used in other commercial sectors and also for domestic purposes. Our curd machine is designed to make the household curd in such a way that it fulfill the requirements .This machine can make the curd in less time. The normal home process requires 8-9 hours for curd formation. Our aim is to make the curd in less time and in every season. This Curd machine is easy to handle and compact in size. This machine can make thick and tasty curd. The curd is helpful in prevention of colon cancer, lowering cholesterol, lowering blood pressure, improving immune functions, vitamin production and preventing infections.

2.WORKING

When supply is given to curd machine the heating element starts to heat. On the heating element a pot is placed in which milk is there with starter added in it .The temperature controller is used to maintain the temperature between 35 degree Celsius to 38 degrees Celsius. When the temperature drops below 35 degree Celsius the machine starts and when temperature rises above 38 degree Celsius the machine gets off. Timer is used for time setting and when we set the time and it gets over then machine will get off. After 2-3 hours the fresh curd will get ready to serve in any season

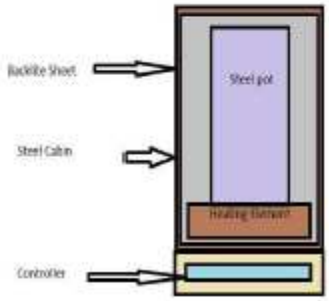


Fig. 2.1 Curd or Yogurt Maker

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Solar Wind Hybrid Power Generation

Snehal Namdev Mitake, Ruturaj Rajendra Bandal, Pragati Anil Kamble, Jaydip Jaysing Sathe, Prof. A. A. Toraskar

Department of Electrical Engineering, Dr. Babasaheb Ambedkar Technology Institute, Sanjeevan Engineering & Technology Institute Panhala, Maharashtra, India

Abstract – Energy has playing an important role in human life and economic development. World total annual energy consumption is increased. While fossil fuel (coal, oil, natural gas) provides three quarter of total. At current energy consumption rate proven coal reserve should last for about 200 years, Oil for approximately 40 years and natural gas for annual 60 years with the contradiction between rapid development. Now a days Non-conventional Power generation is one of the fastest growing sectors. So we select the solar wind hybrid power generation. The sun is the ultimate source of limitless solar energy in the form of light and heat. In a solar power generation system solar panel absorb sunrays and convert it into DC current, that will be used to charge battery. Also wind energy is limitless from the nature. Wind turbine rotate due to the force of wind and its rotor connected with generator also rotate and give AC current. This project involves the solar wind hybrid power generation that will be used to generate electricity. This system will provide the basic electricity requirement for the house. Solar power and wind energy are free making this system viable long-term solution for electrification. Purpose of investment in solar wind hybrid power generation project is to enter in development of green energy technology, which is the only ultimate source of energy for future generation.

Key Words: **Solar energy, wind energy, Hybrid Energy, DC current, PWM charge controller, Vertical axis wind turbine (VAWT),** ***Electricity.***

1.INTRODUCTION: In India most of people living in India where cut off of electricity is very serious problem and we required electricity for almost all the appliance which we used in our day-to-day life. So these is very important part of our life. Now there are two ways to produce electricity one is using Renewable energy source and other by using non-renewable energy sources. But non-renewable energy sources are limited and main drawback of using non-renewable energy sources are environment pollution. So we used renewable energy sources to produce electricity. Solar energy is present through a day but the intensity of the solar radiation depends upon the intensity of the sun and unpredictable shadows. Similarly wind energy is the fastest growing sector of clean energy. Wind energy is able to supplying large amount of power but it has intermittent in nature. The main drawback of both solar and wind system are unpredictable in nature and because of that continuity of the output power cannot be maintain and system become unreliable.

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Voice Controlled Wheel Chair System Using Bluetooth

Pranita Medhe[1] Nikita Desai[2]

Akash Patil[3] Sonali Misal[4]

Snehal Khot[5] Prof. Mr.Arvind Bhandari

Electrical Engineering Department, SETI Panhala, Maharashtra, India

ABSTRAC

The main objective of VOICE CONTROLLED WHEEL CHAIR SYSTEM project is recommended to c0ntrol a wheel chair by using speech recogniti0n. The system is designed to c0ntrol a wheel chair using the v0ice of pers0n. The 0bjective of this pr0ject is to facilitate the movement of people, who are disable or handicapped and elderly people who are not able to move well. The g0al of this system will all0w certain people t0 live a life with less dependence 0n others for their movement as a daily need. Speech rec0gnition techn0l0gy is a key techn0l0gy which will provide a new way of human interaction with machine or tools.

Key Words: Android Application ,Wheel chair, physically challenged, ultra sonic Sensor, voice command ,HC-05 Bluetooth module, DC motors ,Arduino UNO micro-controller.

INTRODUCTION

Voice 0perated wheelchair is the m0dified versi0n 0f the manual wheelchair. It is 0perated 0n the (i.e. commands such as forward, left, right, stop, etc.)voice of the patient .The wheelchair does not require any person to move it as it is automated with motors. Voice of an independent speaker is send through the android app, which is paired to HC-05 and interfacing of the Arduino and HC-05 converts the voice signal sand with the help of L298D .

Driver m0t0rs are driven and hence the wheelchair m0ves in the directi0n directed fr0m the independent speaker.

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

SMART DRYER

Parikshit Kudalkar [1] ,Tushar Katkar [2], Satish Kamble[3], Krishnat Kamble [4], Mahendra Kamble [5], Prof. Prasad Kulkarni[6]

Student, Electrical Engineering Sanjeevan Engineering & Technology Institute[12345]
Professor, Electrical Engineering Sanjeevan Engineering & Technology Institute[6]
parikshitkudalkar4@gmail.com[1], tusharkatkar0709@gmail.com[2],kamblesatish3204@gmail.com[3],kkamble0891@gmail.com[4], mahendrakamble1996@gmail.com[5],prasad.kulkarni@seti.edu.in[6]

Abstract The solar drying system uses solar energy to heat air and dry any food substance loaded, which is beneficial not only in that it reduces wastage of agricultural produce and aids in its preservation, but it also makes transportation of such dried produce simple and promotes people's health and welfare. The design and building of a residential passive solar food drier are presented in this work. The dryer is made up of a solar collector (air warmer) and a drying chamber with fruit and vegetable trays that are both connected. The air that enters via the air intake is heated in the solar collector and heaters before being used in the drying chamber (removing the moisture content from the food substance or agricultural produce loaded). The design was created using a hybrid method, which provides a more dependable approach for accurate design specifications. The container's iron body (painted), input and outlet fans (air ventilation system), mild steel metal sheet, and net trays for waste were all built with locally accessible materials.

Keywords: *Solar drying; Solar collector; Agriculture produce; Optimum temperature*

I INTRODUCTION

One of the methods of food preservation is drying. The key to preventing rotting is to use a drying technique that removes enough moisture from the food. When it comes to food drying, the aim is to eliminate moisture as soon as possible at a temperature that does not adversely influence the food's flavour, texture, or colour. Traditional drying methods, such as sun drying and hot air convection drying, take longer to thoroughly dry the goods.

We created a drier for drying agricultural items quickly and efficiently in this project. For drying agricultural goods, we employ a lower pressure environment (vacuum), which allows the liquid to evaporate without raising the temperature. When used in conjunction with heat, vacuum drying may be a very effective way of drying. The smart drier dries the items without sacrificing their quality. The inexpensive cost of the smart dryer makes it suitable for both industrial and domestic use. When compared to traditional procedures, the drying time is shortened. A vacuum chamber, vacuum pump, heat source, temperature and humidity control system, and several auxiliary systems make up the device. In comparison to traditional methods, this gadget only requires a tiny space and may operate in a fully enclosed natural setting. It has a lot of practical utility as well as social and economic benefits.

Drying is the oldest method of preserving agricultural products, and it is a time-consuming and energy-intensive process. The use of alternative renewable energy resources has become more important as a result of rising fossil fuel prices and scarcity. Using renewable energy sources such as solar energy to dry agricultural goods is environmentally friendly and has a lower environmental effect. In underdeveloped nations, sun drying is a common and cost-effective method for drying food items. However, the process of drying is extremely slow and highly reliant on weather conditions. The poor quality of sun-dried items is mostly due to uneven drying, dust and dirt mixing, and insect and microbe contamination. In certain cases, bad weather causes the entire batch of goods to deteriorate. Solar drying is a possible alternative to sun drying for the drying of fruits and vegetables in impoverished nations. Due to significant investment and running expenses, mechanical drying, which is mostly employed in industrialised nations, is not suitable for small farms in developing nations.

II.AIM AND OBJECTIVE

1. The use of heat under regulated conditions to eliminate the water present in foods via evaporation to generate solid items is referred to as drying. Evaporation, on the other hand, produces concentrated liquid products.

2. The primary goal of drying is to increase the shelf life of foods by lowering their in water activity.

3. In the absence of adequate water, microorganisms that cause food deterioration and decay, as well as numerous enzymes that promote undesirable changes in the chemical makeup of food, are unable to grow, proliferate, or operate.

III. DESIGN OF GFRG BUILDING

The use of heat under regulated conditions to eliminate the water present in foods via evaporation to generate solid items is referred to as drying. Evaporation, on the other hand, produces concentrated liquid products. The primary goal of drying is to increase the shelf life of foods by lowering their in-water activity. In the absence of adequate water, microorganisms that cause food deterioration and decay, as well as numerous

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

BASIC HELIOSTAT MODEL FOR SMALL SCALE INDUSTRY

1st :- Omkar Patil
Electrical Engineering Sanjeevan engineering & technology institute
omkarpatil6181@gmail.com
2nd:- Akshay Patil
Electrical Engineering Sanjeevan engineering & technology institute
akshay9823421316@gmail.com
3rd:- Akash Sankpal
Electrical Engineering Sanjeevan engineering & technology institute
akashcop10@gmail.com
4th:- Vaishnav Kamble
Electrical Engineering Sanjeevan engineering & technology institute
vaishnavkamble5@gmail.com
5th:- Shubham Gawade
Electrical Engineering Sanjeevan engineering & technology institute
shubhamgawade3838@gmail.com
6th:- Prof. Nilesh S.Jadhav
Electrical Engineering Sanjeevan engineering & technology institute
nilesh.jadhav@seti.edu.in

Abstract: The central receiver system (CRS), which comprises of a heliostat field, receiver, and power production unit, is one form of concentrated solar power (CSP) technology. Heliostats are simply mirrors that concentrate sun energy at a single spot on a receiver at the top of a tall tower. Starting with the first heliostat initiatives in the early 1970s and continuing now, there has been a general trend to increase heliostat size from around 12 m2 to around 150-200 m2, with many counter instances of considerably smaller heliostats appearing in recent years.

I INTRODUCTION

The expense of the tower limits its height. The receiver's weight and wind age area are the two most essential aspects in the tower's design. In some areas, seismic factors are also crucial.

As previously mentioned, the fluid choice has an impact on the weight and size of a receiver. A 380 MW receiver's weight can range from 250,000 kg for an exterior liquid sodium receiver to 2,500,000 kg for a cavity air receiver. If a surrounding heliostat field is employed, these would be positioned at the top of a 140 to 170 m tower. Steel frame structure, utilising oil derrick design procedures, or concrete, employing smokestack design approaches, are the two proposed tower designs. Steel frame towers are less expensive at heights less than 120 metres, whereas concrete towers are less expensive at higher heights, according to cost assessments.

Storage System-

Even during periods of fluctuating insolation (clouds) or after sunset, a storage mechanism allows the steam turbine to function under constant circumstances. It is made up of two primary components: hot and cold storage tanks.

An electric generator turns mechanical energy into electrical energy.

INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact Factor: 6.078
(Volume 7, Issue 3 - V7I3-1755)
Available online at: https://www.ijariit.com

Smart IoT based chicks brooding system

Shravan Savagave
shravansavagave007@gmail.com
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

Omkar Uday Gavali
Omgavali1694@gmail.com
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

Ashutosh Arvind Gaikwad
Ashutosh407@gmail.com
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

Arbaz Rajmuhammad Mujawar
Arbazmujawar3743@gmail.com
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

Vishwajit Ajit Gaikwad
gaikwadvishwajit1999@gmail.com
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

Arvind M. Bhandare
arvind.bhandare@sjeti.edu.in
Sanjeevan Engineering and Technology Institute, Panhala, Maharashtra

ABSTRACT

Brooding is the most critical period in the life of a chicken. During brooding period, day old broiler chicks do not have the capability to warm themselves, and if not properly monitored chicks would die because of the change in weather. This would mean a big loss to the poultry farmer or owner, this study aimed to explore smart sensing during brooding period. This process could help monitor the temperature and humidity of the chicken coop easily during brooding period and notify the farmer immediately. The researcher developed a prototype using DHT22 sensor with Arduino Microcontroller and GSM Module. The prototype was tested and evaluated in terms of reliability. The Brooding is the most crucial period in the life of a broiler chicken. This period is when the systems are still in the development stage and the immune system is still delicate and cannot fight diseases. The feathers are not yet fully grown and the chicks are still learning to eat and drink. Since day old chicks do not still have the capabilities to keep their body warm. They are very in danger to the environmental conditions like temperature and humidity level. It leads to sickness and worst death of if they are exposed to colder temperature.

Keywords: GSM module, PT100 and DHT22 Sensor, Solar Hybrid power system, Arduino UNO Micro-controller, Transformer, Converter, MPPT Charge controller.

1. INTRODUCTION

The Brooding is the most crucial period in the life of a boiler chicken. This period is when the systems are still in the development stage and the immune system is still delicate and cannot fight diseases As the old chicks which are born just in days or which has completed a week can just be very compitable to live as there is no feathers are yet grown they can't capable to keep a body warm, They are very vulnerable to the environmental conditions like temperature and humidity level. It could lead to sickness and worst death of the chicks if they are exposed to colder temperature ,If this happens, this could mean a big loss to the poultry farmer or owner. Usually, small scale farmers set up brooding by using cluster rule. If the chicks clustered away from the lamp it means the heat is too hot. If the chicks clustered under the lamp it means the heat is not enough to warm the chicks. The suggested temperature in the chicken coop for the 0-7 day's old chicks is 95°F. Chicks are not advisable to stay outside the chicken coop because of their sensitivity to weather. Week 2 is 90°F and chicks start to fly so lamp should be ensured that chicks cannot reach it. Further, other poultry farmers place the chicks in a partitioned barn for supplementary heat from the other chicks during brooding. This period continues up to 11 days until the full area of the barn can accommodate the chicken when they grow. During the first week of brooding, relative humidity should be monitored daily to avoid dehydration and respiratory diseases and it should not be below 50%. The recommended relative humidity for brooding period is from 50%-70%. However, a very high relative humidity has bad effects to chicks. It may increase the growth of microbial organisms that could be harmful for the health and survival of the chicks. So poultry farmers need to ensure that the chicken coop relative humidity and temperature is properly monitored to prevent diseases and promote good growth that leads to higher profit in the poultry. This is also to make sure that the chicks are always comfortable. To do this, smart sensing was explored for brooding This could reduce the time in spending in the chicken coop just to check the environmental condition of the chicken coop. smart sensing is now a trend now a day. With the use of the different sensors and microcontrollers, it becomes easier to monitor the different activities or environmental conditions. Just like in a poultry farm, smart sensing can also be used. Using Arduino Microcontroller, DHT 22 sensor and GMS Module. This would be a big help in monitoring the temperature and humidity in the chicken coop. This smart

Automatic Gold Sphere Drill Machine

Prof.A.A.Toraskar[1], Mr. Aditya Pokarnekar[2], Mr. Vipul Mali[3], Mr. Shubham Khondre[4]

[1] Professor, Electrical Engineering, SETI, Maharashtra, India
[2] Student, Electrical Engineering, SETI, Maharashtra, India
[3] Student, Electrical Engineering, SETI, Maharashtra, India
[4] Student, Electrical Engineering, SETI, Maharashtra, India

ABSTRACT

The gold a sphere machine drill machine was created to scale back the negative effects of a manual drilling the sphere, like sphere cracking, breaking, bending, and a range of alternative things that may be entirely eliminated by utilizing this machine-driven a drilling machine. This full model plays a big half in an automation within the Automatic drill machine Arduino UNO, At mega 16, Stepper motor, Servo motor, the dc motor, a lcd, Keyboard, Power supply, and conjointly a mechanical ARM. Because of a crack bending and alternative impacts, this full machine drill machine model can stop the sphere from desirous to be redesigned.

Keyword : - *At mega 16, Arduino UNO, Stepper Motor, DC Motor, Servo Motor, 7 Segment Display, Keyboard.*

1. INTRODUCTION

An automatic drilling machine reduces the negative impacts of manually drilling the sphere, such as spherical cracking, a sphere breakage, and a variety of other issues that may be totally avoided with this model. This entire model, which includes Arduino UNO with Mega 16 processor, a stepper motor, dc motor, a servo motor, a screen, a keyboard, and a power supply, will play a critical role in an automation. When goldsmith drills a gold sphere manually, the circumference of the sphere is quite short, making it more difficult to drill it; nevertheless, the sphere is broken during this procedure, requiring the goldsmith to reprocess and construct a new sphere. This makes it is highly long and time-consuming an operation; also, the efforts required for a precise spherical design and the hole creation manually make it rather tough; therefore, drilling it manually speeds up the procedure significantly.

2. WORKING PRINCIPLE

When goldsmith drills a gold sphere by the hand, the diameter of the gold sphere is so tiny that drilling it is quite tough. The sphere is damaged during the manual procedure, requiring the goldsmith to reprocess and create a new sphere. As a result, that's very complex and time-consuming procedure. However, the drilling process is considerably faster than other traditional processes. In the present technology, DC Motors and Servo Motors are used for the drill. In this method, spheres are put on a conveyor belt and then secured to a tray. The gold spherical diameter sized holes in the tray is where the sphere is held in a place. The servo and stepper motors are turned on by the microcontroller. As a result, the drilling operation begins with mechanical arms and a mechanized drill. The drill is the same size as the threads used to make gold necklaces.

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

R&D ON SELF-CHARGEABLE MULTI-TECHNOLOGIES OF E-BIKE

Rushiraj S. Bedage[1], Mrunalinee G. Gaikwad[2], Amit K. Shitole[3], Vinayraj B. Salokhe[4], Rutuja B. Parit[5], Yogesh R.Naik[6]

[1,2,3,4,5]*Final Year Student, Dept. of Electrical Engineering, SETI Panhala, Maharashtra, India*

[6]*Assistance Professor, Dept. of Electrical Engineering, SETI Panhala, Maharashtra, India*

***Abstract*: - The paper describes the performance and environmental analysis of a Self-chargeable electric bike. The main advantage of this approach consists of the E-bike having Self- rechargeable while running by using five techniques, Regeneration from Alternator- Bike Inertia reused to nullify load torque of an Alternator, regeneration from Advance Regenerative Breaking- Separately electrical Breaking system is used Along with mechanical breaking System Results improve regeneration efficiency, regeneration from Wind Power- Windage loss is compromised by converting kinetic energy into electrical, Regeneration from Solar- Internal Solar Modules mounted on bike body & External Solar Modules, Regeneration from Thermocouple- its minor generation only used for cooling fans supply at controller & Buck-boost converter. In this E-bike Dual Battery system is implemented to improve Voltage Regulation of main Battery & improve performance, Reliability, Efficiency. Emergency Back-up Range is also providing at the time of main battery drain-out completely. The operational principle of purposed self-chargeable E-bike is practically analyzed and the performance is demonstrated and recorded**

Keywords: - E-Bike, Regeneration, Electrical Breaking, Dual Batteries, Buck-Boost convertor, Energy Transformation, Back-upRange.

I INTRODUCTION

In recent days, the promotion of non-motorized modes of transport is increasing as part of a more sustainable eco-mobility vision. In particular, the mode that was most influenced is E- Bikes, due to Strong problems related both to the air quality and to the use of petroleum [1] the fact that it is eco-friendly, Fast and flexible, cut back expenses, noiseless, pollution-free, zero- emission, and electrically driven. With soaring fuel costs and environmental concerns, electric vehicles are becoming popular. The charging equipment low-emission renewable energy sources, thus reducing the amount and cost of energy drawn from the electrical grid [2-9]

1.1 Motivation for the project work

True mobility is the most attractive feature of both handheld devices and electric vehicles [10] There are plenty of pros and cons surrounding the modern electric vehicle. At the heart of all-electric automobiles are the batteries. Electric- powered vehicles require charging stations, and for people to travel long distances there needs to be a network of such stations located strategically. Also recharging of batteries often takes about 3 hours And of course, there's the charging equipment you need to carry along.

1.2 Aims & Objectives

For all of these problems of EV, Self-charging Techniques are useful to enhance the Range, performance & efficiency of E-bike. The E-bike having Self-rechargeable while running is the key for all ongoing problems in the electrical automobile industries. It can be done with the following Self- recharging techniques we implied,

Regeneration from Alternator while running, It's high-speed load high current alternator. An alternator generates electrical power which again feedbacks to the battery charging system. It will only turn On Charging while breaking or bike running on slope accordingly E-bike's total load torque. The bike Inertia was reused to nullify the load torque of an Alternator. Regeneration from Advance Regenerative Breaking, in this System Separately electrical Breaking system is used Along with mechanical Breaking System. When Breaks applied 1st half Breaking is only Electrical one, after adding another half of the break both electrical & mechanical Breaking is applied automatically. It results improve regeneration efficiency. Regeneration from Wind Power consists of four wind blowers mounted on the front side of the E-bike's body hence windage loss is compromised. The kinetic energy available when the bike is running is converted into electrical energy and feeds back to the charging system of the battery. Regeneration from Solar, in contain two parts Internal Solar Modules mounted on body & External Solar Modules both are used to charging of E-bike. We can connect any kind of solar module externally to E-bike charging system. Regeneration from Thermocouple, in this we reuse heat dissipated by controller & converter by using a thermocouple and transform it into electrical energy. The minor generation from thermocouple is only used for supply to cooling fans at controller, Buck-boost converter & Motor. In this E-bike Dual Battery system is implemented to improve Voltage Regulation of the main Battery by diverting another electrical lighting load to a second battery. This second battery recharge itself from solar cells mounted on the body. The emergency Back- up Range is also provided at the time of main battery drain-out completely from the second battery system.

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

ELECTRICAL CULTIVATOR OR TILLER BY USING THE SOLAR PANEL

Chandradeep Bhimrao Bhoite[1], Sourabh Dinkar Basrikatti[2], Suraj Bharmu Patil[3], Sangram Sambhaji Patil[4], Vivek Ramdas Bate[5], Prof. Vishal M. Metkari[6]

Department of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala Maharashtra, India[1,2,3,4,5,6]

Abstract: This report details a student's design, manufacture, analysis, control, and testing operations for a motor-powered tiller for agricultural labour. We need to look at non-conventional energy sources to tackle these concerns with fossil fuels. In order to implement this concept, we created a solar-powered electrical tiller. The vehicle is meant to have two-wheel drive and may be utilised for shuttle service as well as short distance travel. All industries, including agriculture, are seeing fast expansion in the modern period. To meet the future food demands, the farmers have to implement the new techniques which will not affect the soil texture but will increase the overall crop production.

Its primary goal is to minimise personnel, which is difficult to come by in today's market, as well as to shorten working hours. Because it has the potential to be significantly superior to the traditional methods of cultivating land using labour or a bull. One of the greatest roadblocks to increasing agricultural output is a lack of mechanisation or automation.

Soil cultivation is one of the most time-consuming tasks in the garden, but it is also one of the most useful. Soil cultivation enhances the structure of the soil by reducing soil compaction and increasing aeration. This increases the amount of oxygen accessible to plant roots while also improving water drainage. It also allows plant roots to act more freely and reach deeper into the soil. I would report on the design, manufacture, analysis, control, and experimental work in this project, which is considered suitable engineering education.

Keywords: *Electric cultivator, Motor-powered tiller, Agricultural business, House gardening,*

I INTRODUCTION

Agriculture is India's economic backbone. As a growing country, agriculture and businesses based on agricultural products play a critical role in the Indian economy. Agriculture and agriculture-based industries and enterprises support the majority of India's population. One of the many farm mechanisation tools is the soil tiller and weed eater. In comparison to tractors, soil tillers and weeds are nontraditional in terms of labour displacement. In boosting soil tiller and weeds, particularly given that the majority of farmers have limited plots of land. As a result, they can't afford more expensive tractors. Therefore, the soil tiller and weed should become useful machine in the internal cleaning of crops and digging of soil which having small distance between them like groundnuts, sugarcane, soya bin crops, cultivation of paddy, in particularly, and other crops in general for the smaller farmers.

Energy is one of the most important needs for human survival on earth. We are dependent on one form of energy or the other for fulfilling our needs. One such form of energy is the energy from fossil fuels. We use energy from these sources for generating electricity, running automobiles etc. But the main disadvantages of these fossil fuels are that they are not environmental friendly and they are harmful.

We need to look at non-conventional energy sources to tackle these concerns with fossil fuels. In order to implement this concept, we created a solar-powered electrical tiller. The vehicle is meant to have two-wheel drive and may be utilised for shuttle service as well as short distance travel. All industries, including agriculture, are seeing fast expansion in the modern period. Farmers must apply innovative practises that do not alter soil texture while increasing total crop productivity in order to fulfil future food demands.

Its main purpose is to reduce the number of employees, which is tough to come by in today's market, as well as to reduce working hours. Because it has the potential to be far superior to traditional land cultivation methods that rely on labour or a bull. Lack of mechanisation or automation is one of the most significant impediments to boosting agricultural productivity.

Soil cultivation is one of the most time-consuming tasks in the garden, but it is also one of the most useful. Soil cultivation enhances the structure of the soil by reducing soil compaction and increasing aeration. This increases the amount of oxygen accessible to plant roots while also improving water drainage. It also allows plant roots to act more freely and reach deeper into the soil.

A graduate student concerned in environmental issues, ageing society, agricultural business, and design and manufacturing proposed the electric tiller. Year after year, the number of individuals working in agriculture fell, but the number of older people climbed. Despite the fact that labour-saving machines such as tractors and tillers have been used to replace traditional agricultural tasks, human effort is still required. For example,when the work is conducted in a narrow area like the

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

ENERGY AUDIT AND RECOMMENDATION TO THE REDUCE COST OF ELECTRICITY

Prof. P.G.Gurav[1], Pranoti Khade[2], Rahul Shinde.[3], Yogesh Maske[4], Amit Kamble[5], Kartika Maske.[6]

Assistant Professor, Electrical Engineering Dept,SETI, Panhala, Maharashtra, INDIA[1]

Students, Electrical Engineering Dept, SETI, Panhala, Maharashtra, INDIA[2,3,4,5,6]

Abstract: India is now experiencing a significant electricity shortage. Transmission and distribution losses continue to rise as a result of demand and supply imbalances. The frequency of the grid has reduced, as has the plant load factor. Plant equipment is harmed by fluctuations in state grid frequency. Peak demand puts more strain on power generating and usage equipment, resulting in higher energy costs.

I INTRODUCTION

India's industrial sector is the country's largest energy consumer, accounting for over half of the country's total commercial energy. Obsolete technology, lower capacity, utilisation, causal metering and monitoring of energy usage, poorer automation, raw material quality, and poor handling are the primary causes of greater specific energy consumption in Indian businesses. The first stage in an energy conservation programme is to continuously analyse industrial energy usage and relate it to production.

To improve productivity and reduce energy expenditures, an energy audit entails effective planning, directing, and controlling of supply and the input-output ratio of energy use. According to the Energy Conservation Act of 2001, an energy audit is defined as the verification, monitoring, and analysis of energy use, as well as the submission of a technical report with recommendations for improving energy efficiency, a cost-benefit analysis, and a plan to reduce energy consumption. Energy audit is a systematic way of monitoring industrial energy use and pin pointing the cause of loss.

IMPORTANCE OF ENERGY SAVING& ENERGY CONSERVATION

A. As per electricity Act 2001 Energy Audit Needed.

B. As per demand in industrial sector we are not supplying electricity to fill demand gap.

C. Wastage of electricity in commercial sectors as well in residential sector can be conserved.

D. Indian industries are not adapting the new technology.

E. In this way increasing bill in economical &social

Type of Energy Audit

Energy Audit can be classified into the following two types.

1) Preliminary Audit

2) Detailed Audit

The type of Energy Audit to be performed depends on:

- Function and type of industry
- Depth to which final audit is needed, and
- Potential and magnitude of cost reduction desired

II.AIM:

Energy audit and implementation of recommendations to reduce consumption and cost of electricity.

III.OBJECTIVE

i) Carry out detailed energy audit.

ii) Analyze the data from the energy audit.

iii) Make suggestions based on the audit findings.

iv) Suggestions for putting the suggestions into action.

v) The cost of implementing the recommendation.

vi) Complete the indicated projects' payback time.

vii) Putting the finishing touches on the recommendations.

viii) Data analysis after suggestions have been implemented.

ix) Using a monthly energy bill to demonstrate cost-effective electricity use.

x) Demonstrating the value of an energy audit and implementing recommendations that aren't limited to electricity.

IV BLOCK DIAGRAM

1. 4 M.T. Hopper

There are two hoppers used to feed waste material to plant. Each hopper is of 4 MT. In that, one hopper used for crushed core sand and another one is used for waste raw black sand. Flow of sand can be maintained with the mechanical sliding dampers and VFD driven trolley under the hopper. This is also helpful to utilize proper mixing of waste crushed core sand and waste raw black sand. 4x4 Inches Screens are given to hopper for separation of big size of wastages from material Ex. Plastic, glass and paper waste.

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

DOUBLE HOLDER WELDING TRANSFORMER

Pramod Gurav[1],Neha Kagale[2],Sonali Gadage[3],Roshni Patil[4],Abhishek Patil[5],Abhijeet Todkar[6]

Assistant Professor, Electrical Engineering Dept, SETI, Panhala, Maharashtra, India[1]Students, Electrical Engineering Dept, SETI, Panhala, Maharashtra, India[2,3,4,5,6]

Introduction :

A welding transformer has two circuits one is primary and other is secondary circuit. These two winding have no electrical connections but magnetically they are coupled together. The main function of transformer is to change high voltages low amperage ac power for welding. The input voltage to transformer may be 440 V or 220V Generally a welding transformer is a step-down transformer .In welding transformer there are generally Voltageis controlled by using

1)Choke

ii) By using Rotory Switch

In welding transformer choke is connected in series with the secondary circuit in order to control or vary current. Also choke can absorb voltage fluctuations choke is important for stability of arc.

In case of Hand methods of arc welding usually a current range of 60 Amps to the 250Amp at a voltage 30 to 40 Volts for a good welder .As per standard 100 Volt is maximum open circuit voltage for the welding.

By using choke to vary or control current the separate space is required .Now again we can control current by moving core that means we can vary flux linking with

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 06 | June - 2021 ISSN: 2582-3930

SURFACE CLEANING DIS-INFECTION MACHINE

Arvind Bhandare[1],Roshan Rote[2],Dhiraj Khot[3],Shubham Patil[4],Umesh Khond[5],Nilesh Bachankar[6]

Assintant Professor,Electrical Engineering Dept,SETI,Panhala,Maharashtra.India[1]

Students,Electrical Engineering Dept,SETI ,Panhala,Maharashtra[23456]

Abstract – The global COVID-19 pandemic due to the novel corona virus SARS-CoV-2 has challenged the availability of traditional surface disinfectants. The aim of the present work is to contribute the fight against the spread of Covid-19, in hospitals, public transport, class room, and any enclosed areas. In this study, we have adopted the physical disinfection method by using UVC light as agent. The UVC devices are studied and classified according their disinfectant units, combined disinfection agents, mobilities. The robot can kill 99.99% bacteria and virus.

Our UV robot has one 15 watt of UV tube mounted bottom of UV robot body. Our UV robot based on Micro-controller with HC-05 bluetooth controller which operates from any mobile device. In addition, we tested the effective nessof cleaning Corynrbactiruim diphtheria, Sarmatia marcescence bacteria sample plates located 2 inches away from our UV robot to be within 10 seconds after exposure of UV light.

Key Words **:** Ultraviolet light (UV-C), Microcontroller, Disinfection, Bluetooth controller, Robot.

1.INTRODUCTION

As COVID-19 spreads across the world, hospitals have become ground zero for the coronavirus. Surfaces contaminated with SARS-CoV-2 pose a grave threat to the safety of staff and patients. To minimize the risks for their staff, hospitals are utilizing disinfection robots to sanitize surfaces. Read on and learn more about how some of those robots kill 99.99 percent of germs.

Currently, surface can be an excellent way for the spread of dangerous infectious diseases. The number of bacteria, viruses, fungi and parasites present on the surfaces. There are many technologies for disinfection of surface, but the most effective are UV-C tube that clean the viruses. Now Making a dis-infection machine using uv-c light (rays) for surface cleaning. That machine will clean the surface and also kill the bacteria. Which is operates on smartphone and machine Control from Microcontroller.

Previously human being was use liquid solution as well as moffer for cleaning purpose. Which was takes more efforts and huge man power. That time surface cleaned by regularely but not properly. And standard cleaning procedure by using solution by human cannot clean or reduce microorganisms. But Now a days the robot are used for cleaning purpose. Which is operates from mobile device as well as IOT. The robot cleans bacteria, viruses as well as dust and wet surface. The UV-A and UV-B lights are uses for decoration purpose. But UV-C light is uses for cleaning surgical ward in hospital. Which kill 99.9% Bacteria and viruses. So In our robotics system we have used a UV-C light for cleaning. Which is most important now a days because of Covid-19 situation. Our robot is operates from Bluetooth controller which reduce human effort and secure from corona virus. The Microcontroller based robot useful in covid center also hospitals and homes.

Therefore to eliminate all the problems on Covid-19 situation, our team designed UV-C type robot that can operates by using mobile phones in room which clean entire with or without human interaction.

2.MODEL DESIGN

Apart from Arduino, which is the main controlling module of the project, there are two other important modules that you have to be familiar with in order to implement the Bluetooth Controlled Robot project. They are the HC-05 Bluetooth Module and the L298N Motor Driver Module.

Fig -1: Bluetooth Module

Philips TUV 8W G8 T5 UVC Lamps distribution channel partner of Philips special lighting-Netherland also we have stock of osram display optic lamps at

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 06 | June - 2021 ISSN: 2582-3930

CONTROLLED HOME APPLIANCES USING BRAIN DETECTOR

Pramod Gurav[1],Sandip Patil[2],Dhairysheel Devalkar[3],Yash Powar[4],Kashinath Khot[5],Shubham Bichakar[6]

Assintant Professor,Electrical Engineering Dept,SETI,Panhala,Maharashtra.India[1]

Students,Electrical Engineering Dept,SETI ,Panhala,Maharashtra[23456]

Abstract – Nowdays human want to do work in less time with less efforts. This project describes on controlling few home appliances by using a brain sensor which will be placed on human head and be connected to computer through BCI technique and we can turn on off appliances form one place by our brain wave frequency. In this technique brain sensor will be connected to computer and will measure our brain waves frequency. This project will be more helpful for differently able people or paralyzed people.

Key Words **:** BCI Brain Computer Interface, brain wave, frequency, appliances, paralyzed.

1.INTRODUCTION

In todays world home automation has become necessary. Automation minimizes effort of human. Because of automation our tome is well utilized. This system can control home appliances using brain wave sensor and also can measure brain wave frequencies. The main part of our project are

1.1 Brain wave sensor

1.2 Android application

The brain wave sensor measures the waves and frequency levels in brain and sends to microcontroller. The android application is developed to connect the sensor , the microcontroller and the Bluetooth module to each other.

2.MODEL DESIGN

The system consists of a brain wave sensor that is paired with android application which is developed to allow the user to control the system. The android application is paired with microcontroller using HC-05 bluetooth module .the connection between sensor, application and microcontroller is done via Bluetooth. The system allows user to switch on or off appliances using attention and concentration levels. The following figure shows hardware design of project -

Fig- 1: Hardware model

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

SMART EGG INCUBATOR

Susmita M. Chougule[1],Virashree B. Desai[2],Pooja S. Gaikwad[3],Shweta S. Kamble[4] Prof. Vishal T. Metkari[5]
Electrical Engineering Department, SETI Panhala ,Maharashtra, India
susmitac1999@gmail.com,
vbdesai0999@gmail.com,gaikwadpooja28398@gmail.com,shwetaskamble1998@gmail.com,vishal.metkari@seti.edu.in

---

Abstract: For the chicken farmers, hatching the eggs in a big number is a problem to producing the chicks which incubate by hens manually. In this paper we develop the system of eggs smart incubator. The incubator system based on Arduino Uno can control the temperature, humidity, and rotate the eggs automatically. In addition, Internet of Things (IoT) system can help farmers to monitor the smart incubator from anywhere in the world. The eggs smart incubator be applied to hatching the eggs at Farm show the best result to hatching the quail eggs. The quail eggs successfully hatched 88.55%, 0.41% defective, 1.84% hatch but dead, and 9.20% not hatch by 490 eggs in 21th days of incubate period

Keywords: *Eggs smart incubator, Microcontroller, Hatching eggs, IoT, Automatic control*

I INTRODUCTION

In this paper, The eggs incubator is a device to keep the efficient temperature and humidity for hatching process. By using incubator, we does not need hen,to incubate the egg manually. For this reason, this device can help for farmers to hatch an eggs and produce the big numbers of chickens. Researchers have to build the incubator for various egg, such as for Chicken, quail, Turtle, Partridge, and other. For the incubating system, we developed the incubator to automate the adjustment system, such as the temperature, humidity, egg rotation, and other which based on the microcontroller, IoT, and other. In this project we the development of hen eggs smart incubator for eggs hatching system. The incubator can control the temperature, humidity, and rotate the eggs automatically based on microcontroller. In addition, the incubator based on Internet of Things (IoT) system using PC/smartphone can help the farmers to monitoring the smart incubator from a distance. Finally, the eggs smart incubator be applied to hatching the egg at Farm for 21 days incubate period.

II CIRCUIT DIAGRAM

In this system, we are using Arduino as our main controller. It has 2 sensors input and 2 setpoint inputs. All these inputs are Analog input. It has total 6 Analog inputs 14 Digital input/output pins. Out of these 6 inputs we are using 4 inputs only. we are using LM35 as our temperature sensor and HS220 has humidity sensors. The microcontroller compares sensor values with their respective set-points. If the temperature is less than its set-point then the heater is turned ON and if its above setpoint it will turn OFF the heater. The operation of humidity sensor is opposite. Humidity sensor is above setpoint then Fan will be ON and humidity sensor is below set point then Fan will OFF. There will be a dead band of 2% for humidity set points.

Turning ON/OFF heater and exhaust fan is controlled by relays. As the relay turns on/off the heater/fan gets on/off. Relays are controlled by the microcontroller. There is also a stepper motor which will rotate a tray in 45 degree. We need the stepper motor drive which rotate the stepper motor.

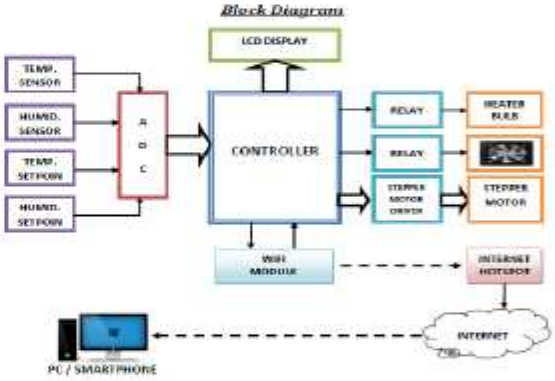


*Fig.1.*Block Diagram

III INCUBATOR DEVELOPMENT

In this Incubatorcontroller like as a Arduino, Temperature sensor, Humidity sensor, temp and humidity set-points, Stepper motor, Heater was used.

A) Arduino Board-

In the first development Arduino Uno was used. Ardunio uno is a microcontroller board. It has14 Digital input/output pins (of which 6 pins are used as a PWM). In this Arduino 6 Analog input pins are present. Its operating voltage is 5V and maximum power is 40mA. Its internal resistor is 20-50 Kohms..

Fig.2. Arduino Board

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

SMART HELMET BY USING MICROCONTROLLER

Sanyogita Suryawanshi[1], Prof. Y. R. Naik[2]

BTech Student, Department Of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala.[1]
Professor, Department Of Electrical Engineering, Sanjeevan Engineering and Technology Institute, Panhala[2]

Abstract: ***Road accidents in our country are increasing day by day. Most of the accidents occur due to not wearing helmet, which can cause severe head injuries or even fatality of the rider. So it is necessary to make it mandatory to wear helmet while riding on a bike. In this project I have made a prototype of smart helmet. It has an Infrared sensor inside the helmet, which will detect whether the rider is wearing helmet or not. The bike will not start until the rider will wear the helmet. There are two modules on is mounted on helmet and another is mounted on vehicle. Infrared sensor is attached with the helmet module and Microcontroller is attached to the vehicle module. These two modules will communicate wirelessly using Radio frequency transmitter and receiver with microcontroller.***

Keywords: *Sensor, Infrared Sensor, Transmitter, Microcontroller.*

I INTRODUCTION

Safety and security is very important aspect of our life. Majority of people of our country prefer two wheelers as compared to other vehicles due to low cost and simplicity. Two wheelers are invented for making human life better but it affects on human beings in the form of accidents.Now a day's most of the human deaths and severe injuries to people occurs because of two wheeler road accidents. According to a research, for every four minutes there is a one death being reported in our country. Hence helmets are very important to avoid severe head injuries and deaths. These road accidents can be avoided by using SMART HELMET.

The main purpose behind this project is to design a smart helmet to avoid accidents and to make the journey safe. The idea of this project comes from our responsibilities towards society. Even though there have been continuous awareness from the government authorities, most of the people do not heed them. The main aim of this project is to make it mandatory for rider to wear Helmet while riding.

There are two important criteria which will be verified by this helmet first is to check whether the rider is wearing the Helmet and second is to check that the rider is just keeping it throughout the journey or not. The IR sensor will check if the person is wearing the Helmet or not. If the person is not wearing helmet, the vehicle module will not start the bike. The bike will start only when the rider will wear the Helmet. If using Smart Helmet while riding becomes mandatory, it will help to reduce number of accidents occurs every day as well as it will reduce death ratio caused by accidents.

II COMPONENTS USED:

I. SOLAR PANEL :

Fig.2.1:- Solar Panel

Solar energy is freely available in nature so we can use that energy to charge the battery connected in circuit. The battery used in the circuit is of rechargeable. Here, Solar Panel of 3 volt is used to charge that battery. It is placed on the top of helmet where solar panel will get maximum sunrays and achieve maximum efficiency.

II. BATTERY:

Fig. 2.2:- Battery

The battery is used to give supply to the overall helmet circuit including IR sensor. The rating of Battery is 3.7 volt 2600mAh. It is Replaceable and Rechargeable. It can be charged by connecting USB to the battery charging module and also by

'TRAFFIC SIGNAL MODIFICATION FOR THE EMERGENCY VEHICALES'

[a]*Department of Electrical Engineering, Sanjeevan Engineering And Technology Institute, Panhala under Dr. Babasheb Aambedakar Technology University Lonare, Maharashtra, India*
Prof.P.P.Kulkarni H.O.D. Electrical Department
Prof. Priyanka Sengupta Project Guide Electrical Department

Students Name

1. Ramesh Dhondiram Patil
2. Sanket Babaso Khot
3. Pooja Aanad Prabhavale
4. Priyanka Aanad Prabhavale
5. Sukrut Milind Tamhankar

Abstract— Traffic bottleneck and transportation delay on downtown area requirements are increasing worldwide. Traffic signal is compelling issue to control traffic light in vehicle system. To improve the safety for both stroller and the vehicle traffic signal is important. Emergency vehicles like Ambulance, police vans, fire vegans etc. have responsibility to reach the destination location quickly. Due to traffic signals they may be delayed for rescue operations. Our project define how traffic signal lights will detects emergency vehicles, how to wield the traffic light how to provide free way to emergency vehicles. This RFID techniques deals with multivehicle, multilane, multi junction road area. It provides efficient time management scheme in which a dynamic time schedule is worked out in real time for passage of each traffic column. The real time operation for the system imitate the judgment of traffic policeman on duty. The proposed active RFID traffic control avoids problems that usually arise with standard traffic control system.

Keywords— RFID, Traffic Signal, CONTROLLER, MICROCONTROLLER 8051. Transmiter and Reciver

I. Introduction

With the increasing number of vehicles, traffic bottleneck and transportation delay on downtown areas are increasing worldwide, therefore it is practically important to develop, verify and approve simple yet powerful models that help in designing and improving safety and efficiency of transportation. It is compelling issue to control traffic light in road vehicles system. The main reason is that traffic signal are used to manage incompatible for use of road space often at road junctions by allocating the road side of a different sets mutually adaptable traffic movements during distance time intervals. The traffic light control system regulates pleasant and guide transportation for the purpose of improving safety and efficiency of vehicles. Now a days most of the industrialized countries are used fixed time strategies for traffic light control.

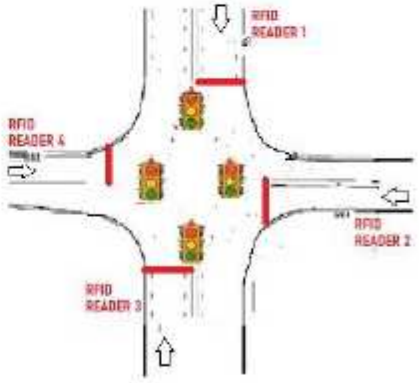


Fig :- Emergency vehicle warning system using RFID

|| Volume 6 || Issue 6 || June 2021 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

THREE PHASE BLDC MOTOR CONTROLLING USING BOOST CONVERTER

Mote Amarjeet
Electrical Engineering Sanjeevan engineering & technology institute
Petkar Akshay
Electrical Engineering Sanjeevan engineering & technology institute
More Rushikesh
Electrical Engineering Sanjeevan engineering & technology institute
Kamble Shilpa
Electrical Engineering Sanjeevan engineering & technology institute
Prof.Sengupta Priyanka
Electrical Engineering Sanjeevan engineering & technology institute

---

Abstract: Brushless DC Motor overcomes several issues of the brushed DC Motor and has been wide applied in numerous fields. the event of BLDCM system needs reliable operation, glorious performance of management algorithmic rule, low value and short development cycle. The dominance of BLDC motor exploitation Boost device is proposed in this study. The driving system's flexibility is increased by using a PIC microcontroller. The BLDC motor is driven by a three-part driver circuit that makes use of MOSFETs. The proposed system is configured for desired speed and leverages Hall device signals from the motor. The results confirm the driving operation that was established.

Keywords: *Brushless DC motor (BLDCM), Hall sensors, Microcontroller.*

I INTRODUCTION

A brushless DC motor (BLDC) is an electrically commutated DC motor without brushes. In comparison to DC motors, BLDC motors employ an electrical electrical switch rather than a mechanical electrical switch, making them far more dependable. Because rotor magnets create the rotor's magnetic flux in a BLDC motor, BLDC motors have a greater potency. It's possible because of their high performance in terms of high potency, quick response, and weight, as well as proper management, high reliability, maintenance-free operation, brushless construction and reduced size, a high force-to-motor-size magnitude relationship, and thermal overload and below-load protection.

Microcontrollers have many advantages over microprocessors. These ICs are less costly and may be utilised in a variety of applications, including appliances, automotive engines, and text and processing equipment. They provide high-resolution management and decrease management loop delays due to their increased performance. These cost-effective controls allow for the reduction of force ripples and harmonics, as well as the enhancement of dynamic behaviour across all speed ranges.Power parts and input filters can be optimised using sleek waveforms. Switching electrical devices from traditional digital control to microcontroller control enhances operating efficiency while conserving energy and allowing the use of smaller, less expensive motors.

The goal of this project is to design a dominating mistreatment boost converter for BLDC motors. The performance of convertor settings will be evaluated and identified using a variety of PWM switch schemes. The system's open loop and closed-loop speed management has been completed, and the results have been collated to validate the effective designed drive functioning.

Block Diagram Of The Control System

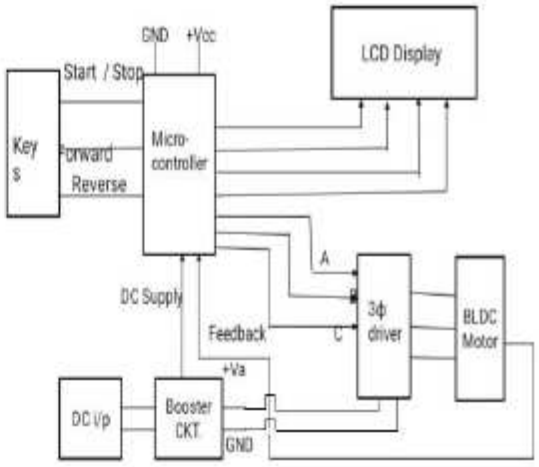


Fig 1: Block diagram of propose system

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

Design and Study of a Three-Wheeled Transport Vehicle's Front Helical Coil Suspension Spring

Rajat Kumthekar[1], Dr. Gajanan Koli[2], Prof. A. A. Katkar[3]

[1]*Student, Department of Mechanical Engineering, Sanjeevan Engineering and Technology Institute, Kolhapur, Maharashtra, India.*
[2]*Professor, Department of Mechanical Engineering Sanjeevan Engineering and Technology Institute, Kolhapur, Maharashtra, India.*
[3]*Professor, Department of Mechanical Engineering Sanjeevan Engineering and Technology Institute, Kolhapur, Maharashtra, India.*

Abstract - *The functionality of the suspension and steering system must maintain an appropriate balance along with a strong supporting structure that strengthens the design and adds to comfortable driving. The design should be low-cost and light-weight as possible without compromising the required strength. This project result gives an optimized front suspension spring of three-wheeled passenger vehicles and offers modifications to improve the vehicle's directional stability. This improved suspension spring is also suitable for smaller versions of the three-wheeler passenger vehicle. The material IS 4454 is used in this study.*

Key Words: **Finite Element Analysis, Three Wheeler Suspension Spring, Weight Optimization, IS 4454**

1.INTRODUCTION

The suspension system of a three-wheeled vehicle must be adequately constructed in order to drive it comfortably and with firm control. The driver will be unable to direct the engine's power unless he or she gains strong control of the vehicle. As a result, without a suspension system, all other parameters for automotive performance, such as horsepower, torque, and 0-100kmph acceleration, are useless. As a result, the suspension system is one of the most crucial elements of a vehicle.

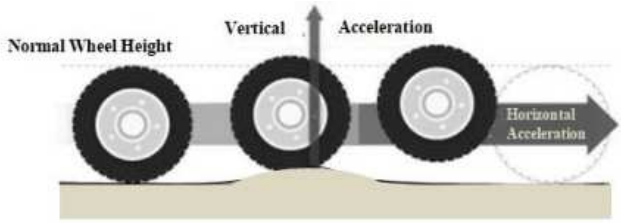


Fig -2: Concept of suspension working

The suspension system's aim is to give road grip through maximum friction between the tyre treads and the road surface, to guarantee adequate steering stability and handling, and to keep the occupants comfortable.

Whenever there is a surface irregularity, the wheel will experience a vertical acceleration. All of the wheels send vertical energy to the frame, which moves in the same direction, in the absence of intervening structure such as suspension spring. The wheels barely make touch with the road in this situation. When a wheel goes over a bump, the wheels slam back into the road due to gravity's downward force.

Therefore, it is necessary to have a mechanism that absorbs the vertically-accelerated wheels' energy allows the frame and body to ride pleasantly and without disruption while the wheel follows bumps in the road can make controlling the vehicle and driving more comfortable.

2. PROBLEM DEFINITION

After a thorough examination of the vehicle's issue, it was discovered that when the driver releases the steering wheel, the vehicle quickly drifts to the right side. Because of the weight of the suspension components, the vehicle drags to one side. The front suspension spring was modified and optimized to deal with this issue.

Design and Development of Expt. Setup for Plasma Coating for Textile Roller Drum

Ranjeet Baburao Chougule
PG Student
Department of Mechanical Design Engineering
Sanjeevan Engineering Technology University, Panhala, Kolhapur, India

Ajit Ashok Katkar
PG Student
Department of Mechanical Design Engineering
Sanjeevan Engineering Technology University, Panhala, Kolhapur, India

Koli G. C.
Assistant Professor
Department of Mechanical Design Engineering
Sanjeevan Engineering Technology University, Panhala, Kolhapur, India

Abhijit Babaso Chopade
PG Student
Department of Mechanical Design Engineering
Sanjeevan Engineering Technology University, Panhala, Kolhapur, India

Abstract

In most of the textile industries as well as paper making machine, rollers are major component is used for rolling mechanism which is always in contact with product like textile cloths, papers. Continuous rolling action causes wear and tear of the roller's surface, which leads to uneven distribution of the cloths and papers as these products are having thickness in microns. So after such wear of roller, it is coated with the same material as roller using plasma coating technique. Now a day's manual techniques are used for plasma coating which consumes more time and requires extra labors resulting in high cost for coating. In this project we designed and developed a new mechanism using lead screw, tail stocks, motors, belt drives etc. for semi-automated plasma coating mechanism for roller coating. This mechanism uses lead screw for movement of the plasma coating gun, hence requires less labors and it has arrangement for coating two rollers simultaneously. Tailstock and chuck mechanism is used for holding of roller while AC motors are used for rotation of chuck with the help of the belt and drive arrangement.

Keywords: Textile, Roller, Plasm-Coating, Tailstock

I. INTRODUCTION

Coating techniques are becoming more and more important for the added value to the technical textiles. It improves and widens the spectrum of functional performance criteria of textiles and thus their use grows significantly, given the diversification of uses for technical textiles. The traditional process for coating required more time and higher value to the manufacturer. The use of appropriate technology with modern machines is the key to textile coating success. Productivity of the machine is essential but flexibility in the range of production speeds, high level of process monitoring, and automation are also essential factors to fulfill technical criteria. But this high automation required higher initial cost, so we design the semiautomatic plasma coating setup which minimizes the initial investment and also the production cost.

II. LITERATURE REVIEW

The literature review for the dissertation project outlined in the previous chapter falls under this heading.

Jovana Ruzicl, Miroljub, Dusan [1] discussed different thermal spray coating methods for applying metallic and non-metallic coatings. The coating material is heated to either a molten or semi-molten state and then directed toward a surface which is to be coated using carrier gases or injection jets. Plasma spraying materials are typically powder, and they require a carrier gas to be fed into the plasma jet that flows between the heated cathode and the cylindrical nozzle-shaped anode.

Sagar Amin, Hemant Panchal [2] have discussed about surface coating which is cost-effective way to produce materials, equipment, and machine components with desirable surface qualities like corrosion, erosion, and wear resistance. To attain the desired qualities, various coatings are utilized. Thermal spray coating is the most successful methods for protecting new parts against wear, high-temperature corrosion, and erosion, as well as for forming strong and heavy coatings that extend the material's life. This article discusses the fundamental principles, benefits, applications, and comparisons of different spraying methods like Plasma Spray, Flame Spray, and High Velocity Oxy-Fuel Spray (HVOF).

Armelle Vardelle, Christian Moreau, Nickolas J. Themelis, Christophe Chazelas[3] have given information about plasma spraying which merely thought to be a significant technology wherein all the key parameters have been observed and addressed. Morever, some complex interactions between the conducting fluid and plasma torch operation are still unknown. Simulations of the plasma spray method are now surfacing, posing new scientific questions. These relatively new approaches enable the fabrication

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 06 | June 2020 www.irjet.net p-ISSN: 2395-0072

SMART CITY WASTE MONITORING SYSTEM USING ANDROID APPLICATION

RITESH SHUKLA[1], MITESH BORKAR[2], PIYUSH PETKAR[3], DHANRAJ DESAI[4], JEEVAN GURAV[5] Prof. M.M. HAJARE[6]

[1,2,3,4,5,6]*Department of Computer Science and Engineering, Shivaji University, Kolhapur, Maharashtra, India.*

Abstract - *Smart city evolvement is a service for monitoring the city in order to measure waste level and conditions of roads in real-time and to alert the municipality, via Pictures. The web application takes input from the user and send it onto the WAMP server in the form of HTTP request which is then enter into the database using SQL queries. In returns the database sends Boolean/results sets to the WAMP server which is then process by network in the form of XML code. The Same procedure is followed by android application. It sends warning messages generated by the users to the municipality via Pictures when the waste is present in particular amount; the garbage, sewage, road etc. related issues are solved immediately. Application will be running 24/7 using cloud technology.*

Key Words - ***GPS, Image Processing, Cloud DATABASE. Client Based Login, MYSQL***

1. INTRODUCTION

One of the major problems that the developing countries including India are facing today is the problem of waste management. Wastes are those organic and inorganic waste materials produced by various activities of the society. India generates 62 million tons of waste every year, of which less than 60% is collected and around 15% processed. 70% of the sewage is untreated. Sewage is waste water and excrement conveyed in sewage. Sewage (or domestic wastewater or municipal wastewater) is a type of wastewater that is produced by a community of people. Waste will cause public health problems if not managed properly.

The government of India has taken many initiatives and implemented new technologies and methods by giving loans for setting up composting plants to encourage proper management of waste since the 1960s but in recent times, the Government has proposed various effective initiative including the Swachh Bharat Campaign which helped to overcome those ideas of waste management.

Following those principles, we think of developing a mobile application which will help to collect this waste.

2. PROPOSED SYSTEM ARCHITECTURE

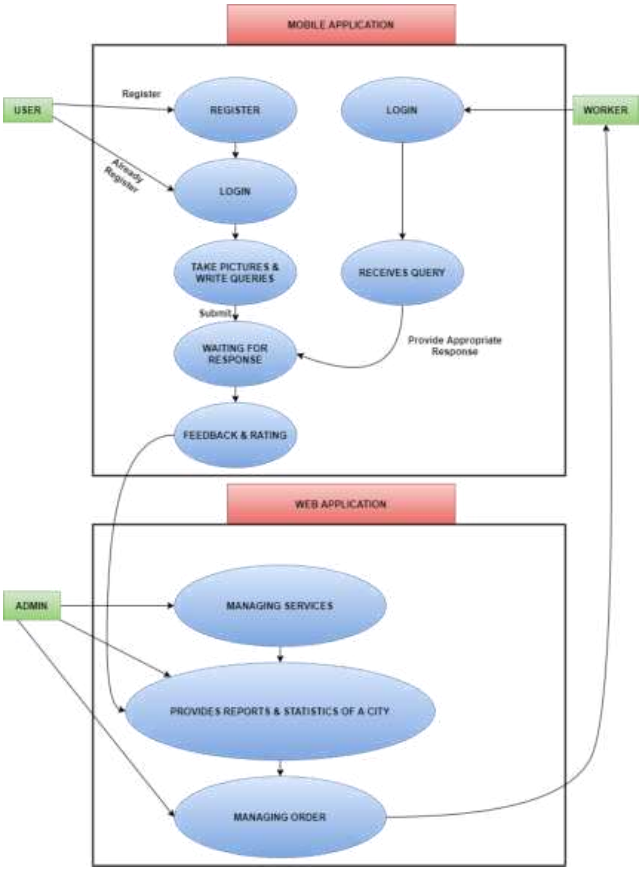


Fig: Use-Case Diagram

The proposed system architecture consists of user authentication services request and conformation. As per there is a requirement of authorized user so as to start the registration process where user registers themselves, after the registration is successful the respective user gets his/her username and password, so that only authorized user gets the access. In our system, the user will capture the photo of waste which he wants cleaned using the tool provided by our app. After capturing the photo, the related information along with its LOCATION is retrieved by database through WEB

An Effective and Optimal Approach for Computational Resource utilization to Improve Computational Accuracy in Grid Computing Environment

Prof. Hajare Mangesh [1], Prof.Pujari Shankar Suryappa [2]

[1,2]Assistant Professor, Sanjeevan Engineering & Technology Institute Panhala. Kolhapur(Maharashtra) India

---

Abstract – In modern days, due to the rapid technological advancements, improving computational accuracy in grid computing has become an essential area of research. Grid computing has raised a new field, differentiated from traditional distributed computing. It concentrates on large-scale resource sharing, innovative forms and in some instances, high-performance orientation. A grid is a network of computational devices that may conceivably span many continents. The grid serves as a whole and complete system for organizations by which the maximum utilization of resources is accomplished. The computational resource utilization is a means which involves resource management and effective job sharing among the resources. Therefore, it is considered to be very valuable in grid systems. These methods are applicable for various systems depending upon the requirements of the computational grid, the type of environment, resources, virtual machines and job profile it is supposed to work with. Each of these models has its qualities and demerits which forms the subject matter of this survey.

Keywords: Grid computing, Distributed systems, Load balancing, Resource allocation, scheduling.

1. Introduction

Grid computing has been growing over the past few years as a means of immense computing power and resource sharing. Grid computing is a distinctive type of parallel computing that relies on complete computers connected in a network by a conventional network interface providing commodity network, compared to the lower productivity of inventing and constructing a smaller form of supercomputers. Grid Computing openly seeks and is capable of adding an infinite number of computing devices into any grid environment, adding to the computing capabilities of the grid.

At present, a very complex set of technology challenges need to be encountered, and the appropriate grid computing solution environment needs to be designed to mitigate these challenges. Grid computing solutions are constructed using a variety of technologies and open standards. This computing provides extremely high-performance mechanisms to access remote computing resources seamlessly.

The quantity and quality requirements for some business related advanced computing applications are day-by-day becoming more and more complex. The industry has now realized that they need, and are conducting numerous complex scientific experiments, advanced modeling scenarios, genome matching, astronomical research, the wide variety of simulations and real-time portfolio management. These requirements can exceed the demands and availability of installed computational power within an organization. The computational grid computing has now become a reality and yet inexpensive computational power for its customers.

The grid provides a scalable, secure and reliable mechanism for collective utilization of computational and other resources. As the computational resources (CPUs) in Grid are heterogeneously scattered and are of the variety of architectures, it becomes necessary to learn and understand the various behavioral parameters. This additional information will provide more effective scheduling and allocation of computational resources to solve complex problems more accurately.

2. Literature Review

For a practical and in-depth understanding of the behavior of computational resources, it is imperative to set a schedule of resource allocation [1] for a given objective. The authors proposed two techniques such as MMS and EMS for job scheduling in Grid. Whenever the scheduler has jobs to schedule, MMS and EMS select the resources based on maximum suitable mapping and exact mapping of job requirement value with resource capable value respectively. The Job manager can monitor the execution of the job and returns the results after the successful completion.

The resource management system may consider the resource economy [2]. Effective resource allocation may consider market participants, resource consumers, and resource owners. The authors investigate the pricing of resources in dynamic Grids based on the computational commodity market of CPU resources. The several categories of CPU are characterized by execution speed. The cost and performance may be used interchangeably in executing jobs which help the selection of suitable resources.

Speed Control of Single Phase Induction Motor Using Cycloconveter

Prasad Kulkarni* Pavan B. Bhosale[1], Rushikesh M. Kadam[2],
Omkar J. Marathe[3], Sushant S. Patil[4], Tejas M. Patil[5]

*Associate Professor,Dept.of Electrical Engineering , Sanjeevan Engineering And Technology Institute,Panhala under Shivaji University Kolhapur, Maharashtra, India

1-5, UG Students, Dept of Electrical Engineering , Sanjeevan Engineering And Technology Institute,Panhala

Email:(Prasad.kulkarni@seti.edu.in*, pavanbhosale1017@gmail.com[1], rushikadam1297@gmail.com[2], ommarathe1513@gmail.com[3], sushantpatil053@gmail.com[4], 97tejasp@gmail.com[5])

Abstract

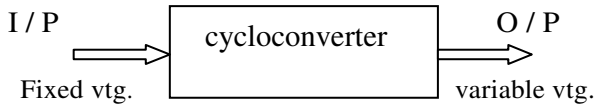
Induction motor is a constant speed machine but it requires variable speed in some applications. So it is necessary to vary the speed of motor. The speed of motor is depends on supply frequency and no of poles but after construction of motor speed can't changed by changing no of poles. This paper examines the use of cycloconverter to vary the speed of motor. the cycloconverter device which is work on relation between speed and frequency. The microcontroller used in this project is the brain of our project which is programmed to change the speed with some steps instructions by the operator. Microcontroller sends the instructions to triggering circuit according to choice of operator. As frequency changes speed also changes.

Keywords- Cycloconverter, Single Phase Induction Motor, Frequency, Motor Speed.

1. INTRODUCTION

Speed control of induction motor is necessary in various applications. There are several methods for the speed control of induction motor. But cyclo-converters are used in very large variable frequency drives with ratings. A cycloconverter is controlled through the timing of its firing pulses, so that it produces an alternating output voltage. The development of the semiconductor devices has made it possible to control the frequency of the cycloconverter according to the requirement and deliver a controlled power with the help of semiconductor switching devices like Thyristors, MOSFET's in order to get alternating output of variable frequency. The quality of the output waveform improves if more switching devices are used. Single phase induction motors are widely used in many applications. Improvements in its performance mean a great saving in electrical energy consumption. Thus, a cycloconverter has the facility for continuous and independent control over both its output frequency and voltage.

2. CYCLOCONVERTER



International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075 (Online), Volume-9 Issue-6, April 2020

Analysis of Effect of SiC Reinforcement on Microstructure and Hardness of Al 6061 and Al 7075

Katkar Ajit Ashok, Girish D. P. Koli, Gajanan Chandrashekhar

Abstract: ***In past few decades use of Aluminium Alloys and Aluminium Metal Matrix Composites have increased tremendously. Due to their light weight, corrosion resistance and excellent electrical and thermal conductivity they are fit many automotive and aeronautical applications. In this paper analysis of effect of SiC reinforcement on microstructure and hardness of Al 6061 and Al 7075 is presented. It is clearly evident that, addition SiC to base material changes its microstructural grain formation and size, uniform distribution of grain in the material will enhances mechanical properties. Also the hardness increases with increasing in weight percent of reinforcement composition..***

Keywords: Aluminium Alloys ,Microstructure, Hardness, Metal Matrix Composites

I. INTRODUCTION AND LITERATURE REVIEW

Metal matrix composites are the composites made by metal with additional metal, ceramic or may be organic compounds. Improvement in mechanical properties is the ,main reason for which the reinforcements is done[1].According to Mathew et al.[2] Aluminum as a handy lightweight automotive material with considerable cost savings. They conducted milling trials on 6061 aluminum and derived a relationship between feed and surface quality. They carried a significant work to improve the productivity in milling operation of 6061 aluminum with respect to improvement in surface roughness and cycle time. In most of MMCs, Al-alloy-based composites are attracting the researchers around the world [3].

According to them depth of cut has a significant influence on cutting force, but an insignificant influence on surface roughness. Tulasiramarao et al. [4] carried out investigation on various forces such as cutting force, feed force and the axial force with the variation in speed for different materials like aluminum, brass, and mild steel. It has been observed that as the speed increases, the forces also increase up to certain limit and then decreases with any further increase in speed i.e., forces developed at 630 rpm are higher compared to 400 rpm and 1000 rpm.

Revised Manuscript Received on April 30, 2020.
* Correspondence Author
Katkar Ajit Ashok *, Assistant Professor, Sanjeevan Engineering Technological University, Panhala, Kolhapur, India.
Dr. Girish D. P., Professor, Government Engineering College, Ramanagara, Karnataka, India .
Gajanan Chandrashekhar, Assistant professor, Sanjeevan Engineering Technological University, Panhala, Kolhapur, India .

Thamban et al[5] carried out machining of machining of 6061-T6 Aluminium alloys using diamond coated and uncoated tungsten carbide end mills under dry conditions. They found that diamond coating of the tools was performed using CVD process. According to Bonollo et al.[6] recent

foundry processes for Al-alloys, low pressure die casting has many benefits like elevated yield, exceptional control of operative parameters, fine metallurgical and technological quality.

II. METHODOLOGY AND EXPERIMENTAL DETAILS

For this stuidy two base materials Al 6061 and Al 7075. Are selected and SiC particle reinforcement is done using casting process. The details are shown in Table 1 and 2.

Table 1. Chemical composition of Aluminium 6061

Models	Reinforcements	
	Al 6061	SiC
1	100%	0%
2	98%	2%
3	96%	4%
4	94%	6%
5	92%	8%

The Al 6061 alloy with 200µm size SiC particles (reinforcement) are used for fabrication of MMC and Al 7075 alloy with SiC 200 µm size particles (reinforcement) are used for fabrication of MMCs. Al 6061 and Al 7075 ingots are melted in electrical resistance furnace and different weight percents silicon carbide reinforcement is added to get following composition composite specimens. The BHN is calculated according to the following formula:

$$B.H.N. = \frac{2*P}{\pi*D\left(D-\sqrt{D^2-d^2}\right)}$$

Where
BHN = the Brinells hardness number
P = the imposed load in kg