

ISBN No. 978-93-5457-951-6

WAINGANGA BAHU-UDDESHIYA VIKAS SANSTHA'S
Wainganga College Of Engineering & Management
Nagpur

(An Autonomous Institute)

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur
University (RTMNU)

PROCEEDING OF

INTERNATIONAL CONFERENCE ON

**Innovation in Engineering, Science
and Management**
ICIESM-2K24

Edition-3



Editor

Dr. Bharat Chede

Dr. Pradeep Dahikar



**INTERNATIONAL CONFERENCE ON
Innovation in Engineering, Science and
Management (ICIISM-2024)**

Nagpur, India
6th April- 2024

Preface

The “*International Conference on innovation in Engineering, Science and Management (ICIESM-2024)*” is being organized by *Wainganga College of Engineering & Management (WCEM)*, Nagpur, on the 6th April, 2024.

Wainganga College of Engineering & Management has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Nagpur in Maharashtra.

The “*International Conference on innovation in Engineering, Science and Management*” was a notable event which brings Academia, Researchers, Engineers, Industry experts and Students together.

The purpose of this conference is to discuss applications and development in area of “**Engineering, Science and Management**”.

The International Conference attracted over 180 submissions. Through rigorous peer reviews 48 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

Message from Minister



HON'BLE NITIN GADKARI
Minister, Road Transport and Highways
Government of India

I am pleased to know that Wainganga College of Engineering and Management, Wardha Road, Nagpur has organized International Conference on Innovation in Engineering, Science and Management (ICIESM-24) on April 6, 2024. I welcome the delegates at Nagpur, extend my best wishes to the event and wish success to the efforts of the organizers. I

The participants and r the youths attending the event are lucky enough as they are going to be enlightened by experts from the field and will get chance to get acquainted with the modern trends in the various sectors. Wish a grand success to the conference. With Regards!

Message from Chief Patron



HON'BLE Dr. SOMDATTA B. KARANJEKAR

Chairman, WCEM, Nagpur

The members of the organizing committee and myself are very proud to present the 3rd International Conference on Innovation in Engineering, Science and Management (ICIESM-2024) under the theme of: “Innovation in Engineering, Science and Management” and welcome all participants to Nagpur City on 6th April, 2024. The conference aimed at expanding the program by including all aspects related Engineering, Science and Management, developing and integrating components for production as multidisciplinary approach. The diversity of specializations and related themes will enable us to achieve our targeted mandate and vision. About 150 authors and attendees, from all over India and abroad including unique Key Note speakers will show us their recent developments in varied fields in Engineering, Science and Management. The hard work and dedication of all the members of organizing, scientific, technical and financial committees during the preparation for this conference is highly appreciated. Without them the event would not have been possible. I would like to assure that our role will not end at this stage; we are totally committed to follow up all the details during the day of the conference, looking towards more fruitful future cooperation for the benefit of our regions and the world as well. My personal respect goes out to all of you.

Message from Chief Patron



HON'BLE Dr. B.B. KARANJEKAR
Vice Chairman, WCEM, Nagpur

"In this competitive world, we are aimed to produce skilled and "competent engineers, manager, entrepreneurs and responsible citizens. We are committed to provide devoted faculty and best infrastructure to students. Through regular academic monitoring and personal attention towards every students, we make students to academically their hidden qualities. We develop students in the institute academically, technically with personality development and encourage them by providing opportunities for Innovation, research with the help of institute industry interface so that our students can compete globally." Ultimately, we have to make our Institute world class.

Message from Director



Dr Bharat Chede
Director, WCEM, Nagpur

I am very happy to know that “International Conference on Innovation in Engineering Science and Management” ICIESM- 2023 is been organized in Wainganga college of Engineering and Management. With the advancement of science and technology, there is rapid industrialization all over the world in every field for getting an improved and strong innovation. The development referring to new technologies, including innovation and research, have thrown challenges before the engineers and the managers. Future technologies will change the life of human being, leading to novel ideas and innovations with new concept and hypothesis resulting into useful outcome with better product/process and managerial aspects. This will give further an important effective tool to study Engineering. The theme of conference is to discuss innovations in Engineering, Science and Management. I am confident that the deliberations of conference will bring a very useful outcome with innovations. I wish the conference a grand success.

Message from Advisor



Dr. Pradeep Dahikar
Advisor, WCEM.

It is with great pleasure that I welcome you to join the 4th Engineering Conference ICIESM-2024, held in Wainganga college of Engineering and Management, Nagpur, Maharashtra, India.

The successful outcome of ICIESM, previous edition held in April 2022, this event has grown considerably in terms of both the number of visitors and delegates, along with the size of the conference.

ICIESM-2024 will provide an excellent opportunity for regional and international operators and owners as well as technology, product and service providers to connect, network and discuss how to develop innovative ideas and feasible solutions that will address the growing needs of all the industries.

Message from Convener



Convener

Prof. Bhavesh A. Bohra
Assistant Professor, ME, WCEM



Co- Convener

Prof. Sachin Zade
HOD, MCA, WCEM.



Co- Convener

Prof. Monika Ingole
Assistant Professor, CSE, WCEM

Our privilege and honor to welcome you all to ICIESM- 2024, on 6th April 2024 at Wainganga College of Engineering and Management, Nagpur.

The main goal of organizing this conference is to share and enhance the knowledge of each and every individual in this fast-moving Information Era. We have given a good opportunity for those who have a thirst in knowing the present technological developments and also share their ideas. Additionally, this conference will also facilitate the participants to expose and share various novel ideas. The conference aims to bridge the researchers working in academia and other professionals through research presentations and keynote addresses in current technological trends. It reflects the growing importance of Intelligent Computing systems as a field of research and practice for contribution and better opportunities in technology. You will get ample opportunities to widen your knowledge and network. Outside of the conference, I hope that you would/will enjoy some of the many attractions found in and around our beautiful campus of WCEM.

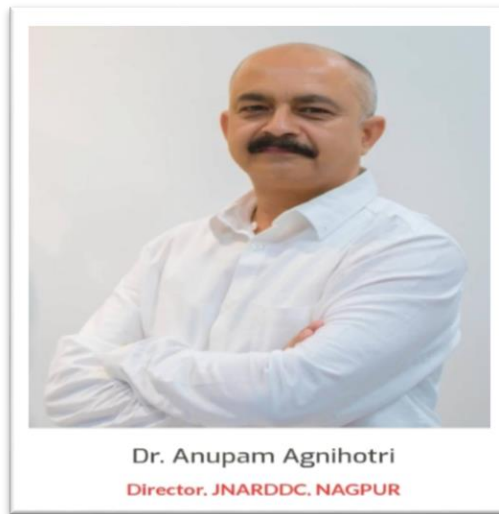
We want to thank in advance the conference committee for extending their valuable time in organizing the program and all the authors, reviewers, and other contributors for their sparkling efforts and their belief in the excellence.

We cordially invite all the enthusiasts to participate with full vigor in this celebrated event which can give immense exposure and global opportunities to all.

ICIESM-2024

*International Conference on
Innovation in Engineering Science
and Management (ICIESM)*

Keynote Speakers



Dr. Anupam Agnihotri,

Director, JNARDDC, Nagpur

(Jawaharlal Nehru Aluminium Research Development & Design Centre)

Nagpur.

He obtained his PH.d. in Metallurgy from VNIT, Nagpur. He has 30 years of experience in Research. Recently, At Jawaharlal Nehru Aluminium research Development And Design Centre Dr. Anupam Agnihotri is serving as Director since 2014. He has published and presented research papers in various national as well as international journals & conferences. Dr. Anupam Agnihotri also held the post of Director at National Institute of Miners Health, Nagpur. He has also served as Director at Bharat Gold Mines.

ICIISM-2024

*International Conference on
Innovation in Engineering Science
and Management (ICIISM)*

Nagpur, India, 6th April 2024

Organizing Committee

Chief Patron

Dr. Somdatta Karanjekar

Chairman

Dr. Bramhanand Karanjekar

Vice- Chairman

Wainganga Bahu-Uddeshiya Vikas
Sanstha, Nagpur

Patron

Dr. Bharat Chede

Director, WCEM

Steering Committee Chairs

Prof. Swapnil Choudhary

HOD, MECH, WCEM

Prof. Rahul Bhandekar

HOD, CSE, WCEM

Prof. Rupali Dasarwar

HOD, AIDS, WCEM

Prof. Ankita Khandait

HOD-EE, WCEM

Prof. Pallavi Deotale

HOD, CIVIL, WCEM

Prof. Prafulla Puri

HOD, Applied Sciences, WCEM

Dr. Janvi Rathi

HOD, Management, WCEM

Prof. Malvika Saraf

HOD, ETC, WCEM

Convener

Prof. Bhavesh Bohra

Assistant Professor,ME,WCEM

Co-Convener

Prof. Monika Ingole

Assistant Professor,CSE,WCEM

Prof. Sachin Zade

HOD, MCA,WCEM

Working Committee Members

Prof. Sujata Dake

Assistant Professor,CSE,WCEM

Prof. Priyanka Deshmukh

Assistant Professor,EE,WCEM

Prof. Nidhi Jejurikar

Assistant Professor,CIVIL,WCEM

Prof. Gayatri Pawar

Assistant Professor, Applied Sciences,WCEM



CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
1	Vehicle Number Plate Identification And Recognition Of Number Plate Using Deep Learning Based On Approaches In Image And Videos <ul style="list-style-type: none"> ➤ <i>Manisha Dhargawe</i> ➤ <i>Prof. R.Y Bhandekar</i> ➤ <i>Prof. Monika Ingole</i> 	1
2	I Student Portal : Innovative Solution for Automate the Academic management system using django and python <ul style="list-style-type: none"> ➤ <i>Prof. Rahul Bhandekar</i> ➤ <i>Mr. Sanket Rathod</i> ➤ <i>Mr. Harshal Balpande</i> 	1
3	WSN-Based Data Acquisition System for Collecting Environmental Pollution Factors for Green City <ul style="list-style-type: none"> ➤ <i>Sneha G. Gobade</i> 	2
4.	Android Based Image Steganography <ul style="list-style-type: none"> ➤ <i>Prashant Khetade</i> ➤ <i>Shubhangi Kuhikar</i> ➤ <i>Pooja Bhaisare</i> ➤ <i>Priyanka Somankar</i> ➤ <i>Achal Landekar</i> 	2
5.	Online Voting System <ul style="list-style-type: none"> ➤ <i>Monika ingole</i> ➤ <i>Shrikant Mandhare</i> ➤ <i>Shubham Raktasinge</i> ➤ <i>Nikita Badne</i> 	3
6.	Agrowork <ul style="list-style-type: none"> ➤ <i>Prof. Bhagyashri Dongare</i> ➤ <i>Sakshi Chaudhari</i> ➤ <i>Dnaneshwari Bhonde</i> ➤ <i>Aniket Chandewar</i> ➤ <i>Amey Kadwe</i> 	3
7.	Automatic timetable generator using php language” <ul style="list-style-type: none"> ➤ <i>Rahul Bhandekar</i> ➤ <i>Rutuja Nanhore</i> ➤ <i>Anjali Meshram</i> ➤ <i>Dolly Kshirsagar</i> ➤ <i>Nikhil Patle</i> 	4
8.	Sign Language Translation: Bridging Gaps in Communication <ul style="list-style-type: none"> ➤ <i>Sujata Dake</i> ➤ <i>Manthan Kawathe</i> ➤ <i>Nikhil Gharat</i> ➤ <i>Gevit Nimkar</i> ➤ <i>Swetal Suryawanshi</i> 	4

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
9.	Efficient classroom monitoring using internet of things ➤ <i>Prof. Bhagyashri D. Dongare</i> ➤ <i>Sanjana P. Bhoyar</i> ➤ <i>Vaishnavi R. Bhure</i> ➤ <i>Sanjana R. Marode</i>	5
10.	Multi-tiered password authentication system ➤ <i>Hashali Ragite</i> ➤ <i>Bhushan Bankar</i> ➤ <i>Samiksha Mule</i> ➤ <i>Vicky Amborkar</i>	5
11	Cyber hacking breaches prediction and detection ➤ <i>Prof. Alsaba Naaz</i> ➤ <i>Maivis Sheikh</i> ➤ <i>Vaishnavi Narnaware</i> ➤ <i>Sneha Chilkapure</i> ➤ <i>Kranti Bhatwalkar</i>	6
12	Determine the Decision Driving Strategy of an Autonomous Vehicle ➤ <i>Prof. Rahul Bhandekar</i> ➤ <i>Ashish Thengare</i> ➤ <i>Prof. Monika Ingole</i>	6
13	Digital voting system ➤ <i>Prof. Rashmi Kannake</i> ➤ <i>Ashutosh Upadhyay</i> ➤ <i>Shruti Ghusar</i> ➤ <i>Kunal Markam</i> ➤ <i>Ajit Patle</i>	7
14	Fake News Detection Using Machine Learning ➤ <i>Sparsh Gajbhiye</i> ➤ <i>Achal Kale</i> ➤ <i>Dr. Manish T. Wanjari</i>	7
15.	Smart campus surveillance and guidance system ➤ <i>Rahul Bhandekar</i> ➤ <i>Hritika Belekar</i> ➤ <i>Pallavi Kurve</i> ➤ <i>Mohmmad Farman ur Rahman</i> ➤ <i>Mohammad Taifur Shaikh Feroz Ahmed</i>	8
16.	Gracefit Tracker ➤ <i>Prof. Tara Shende</i> ➤ <i>Mr. Tushar Pawar</i> ➤ <i>Miss. Gayatri Naik</i>	8

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGENO
17.	Kanban Board System Using Node JS ➤ <i>Prof. Rashmi Kannake</i> ➤ <i>Payal Domale</i> ➤ <i>Komal Shrivastav</i> ➤ <i>Grishma Patle</i> ➤ <i>Shreekant Jadhav</i>	9
18	A Survey of Deep Learning-Based Lane Detection Methods for Autonomous Vehicles: Comparison and Future Directions ➤ <i>Ashish S. Waikar</i> ➤ <i>Dr. Manish T. Wanjari</i>	9
19	Exploring Email Auto Deletion ➤ <i>Prof. Harshali Ragite</i> ➤ <i>Mr. Manav Neware</i> ➤ <i>Mr. Saurabh Deotale</i> ➤ <i>Mrs. Rohini Durugkar</i> ➤ <i>Mrs. Prachi Paturkar</i>	10
20	Bus Pass Management System ➤ <i>Prof. Nikita Nandapure</i> ➤ <i>Ritik Shid</i> ➤ <i>Diksha Parate</i> ➤ <i>Trupti Awadhut</i> ➤ <i>Kirti Dekate</i>	10
21	Rocket Landing Using Reinforcement Learning ➤ <i>Prof. Prashant Khetade</i> ➤ <i>Dipa Shende</i> ➤ <i>Saachi Singh</i> ➤ <i>Chetan Kathane</i> ➤ <i>Shital Dambhare</i>	11
22	Smart Virtual Voice Assistant Using Python ➤ <i>Prof. Rashmi Kannake</i> ➤ <i>Pranmya Kale</i> ➤ <i>Nikhil Dongre</i> ➤ <i>Vipul Kshirsagar</i> ➤ <i>Yogesh Tajane</i>	11
23	Predictive Fields: Revolutionizing Agriculture with Machine Learning Crop Forecasting ➤ <i>Prof. Tara Shende</i> ➤ <i>Aman Mende</i> ➤ <i>Gayatri Mate</i> ➤ <i>Sanghadip Devatale</i> ➤ <i>Roshan Sukhare</i>	12

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
	Career Recognition & Academic Counseling (CRAC Bot) ➤ <i>Mr. Satish Khode1</i> ➤ <i>Prof. Rahul Navkhare</i>	
25	Workers Power : On Demand Service ➤ <i>Rahul Bhandekar</i> ➤ <i>Mayuri Nalgopalwar</i> ➤ <i>Rohit Bopche</i> ➤ <i>Kirti Bhoyar</i> ➤ <i>Sakshi Mule</i>	12
26	“Iot based smart bridge and monitoring system” ➤ <i>Rupali Dasarwar</i> ➤ <i>Tanmay Talwekar</i> ➤ <i>Linta Mendhe</i> ➤ <i>Harsh Damke</i> ➤ <i>Khushi Markande</i>	13
27	Driver drowsiness system using python and machine learning ➤ <i>Prof. Rahul Bhandekar</i> ➤ <i>Mr. Manish Tembhare</i> ➤ <i>Mr. Himanshu Pardhi</i> ➤ <i>Miss. Pranali Dekate</i> ➤ <i>Miss. Shivani Amrute</i>	13
28	Revolutionizing Content Digestion: Unleashing the Power of Bidirectional and Auto-Regressive Transformers in AI-Powered Automatic Text Summarization. ➤ <i>Ms. Vaishali V. Jikar,</i> ➤ <i>Dr. Gurudev B. Sawarkar</i> ➤ <i>Ms. Rupali Dasarkar</i> ➤ <i>Ms. Minakshi Dobale,</i>	14
29	Revolutionizing Healthcare: Advancing Patient Care through Prescription Digitization" ➤ <i>Yogita Popat</i> ➤ <i>Ajita Dhekne</i> ➤ <i>Hrut Munjewar</i> ➤ <i>Prof. S. H. Jawale</i> ➤ <i>Prof. K. S. Deosarkar</i>	14
30	Obstacle avoidance & surveillance robot ➤ <i>Harshali Ragite</i> ➤ <i>Shubham Biradar</i> ➤ <i>Shubham Motghare</i> ➤ <i>Janhvi Hate</i> ➤ <i>Rut Bijanpalliwar</i>	15

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
31	Indian fake currency detection using django framework & image processing with python language ➤ <i>Minakshi Dobale</i> ➤ <i>Aakanksha Bawankule</i> ➤ <i>Usha Kshirsagar</i> ➤ <i>Kanchan Lakhere</i> ➤ <i>Gayatri Burlawar</i>	15
32	Location Tracking System using QR code ➤ <i>Minakshi dobale</i> ➤ <i>Shubham Kumbhare</i> ➤ <i>Sanket Dudhe</i> ➤ <i>Sahil Wase</i> ➤ <i>Sandip Bawane</i>	16
33	IoT based fish feeding and water monitoring system ➤ <i>Sujata Dake</i> ➤ <i>Sumit Parate</i> ➤ <i>Lalita Rakshak</i> ➤ <i>Yadneshwar Patle</i> ➤ <i>Sunil Vishwakarma</i> ➤ <i>Prof. Minashi Dobale</i>	16
34	Gesture Recognition for Sign Language With AI ➤ <i>Mr. Aniket Deshbhratar</i> ➤ <i>Mr. Himanshu Harode</i> ➤ <i>Mr. Chirag Hamare</i> ➤ <i>Prof. Supriya Jawale</i> ➤ <i>Prof. Kaveri Deosarkar</i>	17
35	Heart disease prediction using artificial intelligence and machine learning ➤ <i>Prof. Tara Shende</i> ➤ <i>Prof. Rahul Bhandekar,</i> ➤ <i>Kiran Pustod</i>	17
36	Face Identification And Blurring the Face Using Deep Learning Based Approaches In Videos ➤ <i>Ms. Chandan D. Sawarkar</i> ➤ <i>Dr. Gurudev B. Sawarkar</i> ➤ <i>Ms. Rupali Dasarwar</i> ➤ <i>Ms. Minakshi Dobale,</i>	18
37	Plant Disease Detection Using Deep Learning-Based Convolutional Neural Networks With Transfer Learning Algorithms. ➤ <i>Ms. Ashmita Ghongade¹</i> ➤ <i>Dr. Gurudev Sawarkar</i> ➤ <i>Prof. Rupali Dasarwar</i> ➤ <i>Prof. Minakshi Dobale</i>	19

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
38	Smart wearable device for women safety <ul style="list-style-type: none"> ➤ <i>Monika Ingole</i> ➤ <i>Pranay Chide</i> ➤ <i>Ajit Ukey</i> ➤ <i>Araju Chamlate</i> ➤ <i>Aarti Ukey</i> 	19
39	Smart stick for the blind person <ul style="list-style-type: none"> ➤ <i>Rupali dasarwar</i> ➤ <i>Sakshi dhoble</i> ➤ <i>Akash chachere</i> ➤ <i>Junaid pathan</i> ➤ <i>Raj bhosle</i> 	20
40	Development Of Ceiling Fan Cleaning Machine <ul style="list-style-type: none"> ➤ <i>Prajwal Wanjari</i> ➤ <i>Mangesh Thakre</i> ➤ <i>Rahul Asutkar</i> ➤ <i>Sanju Nagpure</i> ➤ <i>Dikeshkumar Bagchawar</i> ➤ <i>Pro.Swapnil M Choudhary</i> ➤ <i>Dr.SomdattaKaranjekar</i> 	20
41	Air powered car <ul style="list-style-type: none"> ➤ <i>Rakesh Patle</i> ➤ <i>Sunil Katre</i> ➤ <i>Saurabh Padole</i> ➤ <i>Piyush Tandulkar</i> 	21
42	Automated Irrigation System in farming by Solar Energy <ul style="list-style-type: none"> ➤ <i>Khilendra Sharanangat</i> ➤ <i>Prof. Swapnil Choudhary</i> ➤ <i>Dr. Somadatta Karanjekar</i> ➤ <i>Dr. Bharat Chede</i> ➤ <i>Prof. Suhas Wankhede</i> 	21
43	Design & Development Of Smart Fire Safety System Fore-Vehicles Using IOT” <ul style="list-style-type: none"> ➤ <i>Sandip Patorkar,</i> ➤ <i>Prof. Swapnil Choudhary</i> ➤ <i>Dr. Somadatta Karanjekar</i> ➤ <i>Dr. Bharat Chede</i> ➤ <i>Prof. Suhas Wankhede</i> 	22
44	Using Cognitive IOT In Vehicle System for On Actual Time Monitoring of CO ₂ Emission with Temperature and Alcohol Detector <ul style="list-style-type: none"> ➤ <i>Mukesh Radhesham Pardhi</i> ➤ <i>Prof. Swapnil Choudhary</i> ➤ <i>Dr. Somdatta Karanjekar</i> ➤ <i>Dr. Bharat Chede</i> ➤ <i>Prof. Suhas Wankhede</i> 	23

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGENO
45	Monitoring of pollutants in the air of Pune City ➤ <i>Nidhi Mishra</i> ➤ <i>Nidhi Sharma</i>	24
46	Dc motor speed controller using ic 555 ➤ <i>Chaitanya Kukwas</i> ➤ <i>Dipanshu Chauhan</i> ➤ <i>Lina Behare</i> ➤ <i>Vinod Tiple</i> ➤ <i>Rohit Kumbhare</i> ➤ <i>Prof. Priyanka Deshmukh</i>	24
47	Hybrid Grid Connected Solar Powered Inverter ➤ <i>Nehal Lanjewar</i> ➤ <i>Ashish Bhandarkar</i> ➤ <i>Bhushan wakade</i> ➤ <i>Jiwan kashiti</i> ➤ <i>Akash Rathod</i> ➤ <i>Dr. D.R.Tutakne</i>	25
48	Negative phase sequence and the over voltage protection relay ➤ <i>Snehal matale</i> ➤ <i>vidya pachare</i> ➤ <i>aditya sayam</i> ➤ <i>vikas rathod</i> ➤ <i>swapnil budhe</i> ➤ <i>Prof. Pravin Mandvikar</i>	25

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
49	Wireless mobile charger ➤ <i>Yash Badwaik</i> ➤ <i>chirag bisen</i> ➤ <i>kartik rahangdale</i> ➤ <i>yugendhar dolas</i> ➤ <i>Shruti lengure</i> ➤ <i>Prof. Ankita Khandait</i>	26
50	IOT based banana ripening chamber monitoring & controlling unit <hr/> ➤ <i>Kunal khawashi</i> ➤ <i>Malvika saraf</i> ➤ <i>Arvind Padole</i>	26
51	Smart autonomous nurse assistant robot(SANAR) <hr/> ➤ <i>Dr Janvi Rathi</i> ➤ <i>Prof. Prashant Gulhane</i> ➤ <i>Prof Ritesh Masade</i>	27
52	Digital twin applications in vehicular system ➤ <i>Pratik Ashok Khobragade</i> ➤ <i>Prof. Malvika U. Saraf</i>	27
53	Review on Development of Smart Fire Safety System for Vehicles Using IOT ➤ <i>Manjutai B. Ambade,</i> ➤ <i>Prof. Arvind M. Padole,</i> ➤ <i>Prof. Malvika Saraf</i>	28
54	Iot based virtual doctor robot ➤ <i>Malvika Saraf</i> ➤ <i>Saurabh Mungale</i> ➤ <i>Shweta Shewade</i> ➤ <i>Pooja Thorath</i> ➤ <i>Pratik Ingole</i> ➤ <i>Surandra Kathane</i>	28
56	Enhancing Meteorological Studies: Cloud Amount Measurements for Better Weather Predictions ➤ <i>Uday Shende</i> ➤ <i>Prof. Malvika Saraf</i>	29

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
57	<p>A Review on Development of Eco-Friendly Bricks Using Foundry Sand, River Sand, Fly Ash and Cement</p> <ul style="list-style-type: none"> ➤ <i>Tejas Raut</i> ➤ <i>Lalit Shende</i> ➤ <i>Yamini Agashe</i> ➤ <i>Dhanashree Dhole</i> ➤ <i>Payal Shiwarkar</i> ➤ <i>Prof. Gaurav Hingwe</i> 	30
58	<p>Comparative Analysis of Conventional Concrete with Fiber-Reinforced Concrete</p> <ul style="list-style-type: none"> ➤ <i>Shital Shahare</i> ➤ <i>Praful Gavhare</i> ➤ <i>Pranay Gaykwad</i> ➤ <i>Dikeshkumar lanjewar</i> ➤ <i>Bhagyashri Kawale</i> ➤ <i>Prof. Nidhi Jejurikar</i> 	30
59	<p>A review paper on light generating concrete</p> <ul style="list-style-type: none"> ➤ <i>Om Baywar</i> ➤ <i>Divya Pardhi</i> ➤ <i>Shivam Mahajan</i> ➤ <i>Gaurav Kale</i> ➤ <i>Tukaram Khupse</i> ➤ <i>Prof. Kajal Pachdhare</i> 	31
60	<p>A review on analysis of different type of truss considering railway bridge loading</p> <ul style="list-style-type: none"> ➤ <i>Pragati Vilas Gaikwad</i> ➤ <i>Er .Mithilesh Kapse</i> ➤ <i>Prof. Pallavi Deotale</i> 	31
61	<p>Ultra High Performance Concrete with Rice husk Ash and Fly ash</p> <ul style="list-style-type: none"> ➤ <i>Sharad A. Galmale</i> ➤ <i>Nayan U. Patil</i> ➤ <i>Urvashi R. Jambhulkar</i> ➤ <i>Dhanshri K. Zade</i> ➤ <i>Yukta P. Chikankar</i> ➤ <i>Prof. Subham C. Ingole</i> 	32
62	<p>Analysis on properties of m-30 and m-90 grade of concrete and its effects</p> <ul style="list-style-type: none"> ➤ <i>Sanjay Mangal Ghate</i> 	32

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
63	Innovating Construction: Cotton Thread as an Admixture in Cement Bricks <ul style="list-style-type: none"> ➤ <i>Chandni Kapse</i> ➤ <i>Gulshan Borade</i> ➤ <i>Dishant Dighore</i> ➤ <i>Kunal Patle</i> ➤ <i>Sachin Bhange</i> ➤ <i>Pallavi Deotale</i> 	33
64	An experiment study on concrete with grade of m25 by using e-waste <ul style="list-style-type: none"> ➤ <i>Ashwin M. Raut</i> ➤ <i>Jatin N. Roshanghede</i> ➤ <i>Nabil M. Hashmi</i> ➤ <i>Dr. Tejash Patil</i> 	33
65	Enhancing Ultra High-Performance Concrete by Integrating Rice Husk Ash and Fly Ash" <ul style="list-style-type: none"> ➤ <i>Nitesh B. Thikare</i> ➤ <i>Ketan. S. Hedau</i> ➤ <i>Pranay. V. Wasnik</i> ➤ <i>Harshal. P. Padole</i> ➤ <i>Parag. B. Zode</i> 	34
66	Navigating the Generation Gap in the Workplace: Strategies for Effective Communication and Collaboration <ul style="list-style-type: none"> ➤ <i>Amaan khan</i> 	34
67	Cosmetic industry & csr – an overview <ul style="list-style-type: none"> ➤ <i>Prof. Dr.Ujawala Narkhede</i> ➤ <i>Prof. Ankita Hatkar</i> 	35
68	Unleashing the Power of Artificial Intelligence: Revolutionizing Enterprises' Digital Marketing Strategies <ul style="list-style-type: none"> ➤ Shabnam S Khan 	35
69	Mathematical Modelling of Some Chemical Structure Graph <ul style="list-style-type: none"> ➤ <i>Prafulla Puri</i> ➤ <i>Vivek Korde</i> 	36
70	Enhancing Employee Well-being and Mental Health in the Workplace Strategies for Modern Organizations <ul style="list-style-type: none"> ➤ <i>Prof. Ketaki Kukde</i> ➤ <i>Dr. Nitin Ganorkar</i> ➤ <i>Dr. Vijayshree Mohabiya</i> 	36
71	Application of Energy Management System of Smart Houses with Smart Grid <ul style="list-style-type: none"> ➤ <i>Prof. Ankita Khandait</i> ➤ <i>Prof.Sagar Rahangdale</i> ➤ <i>Prof.Bhavesh Bohra</i> 	37

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
72	mCharger for 12 volt batteries with automatic shut-off <ul style="list-style-type: none"> ➤ <i>Badal D. Alwalwa</i> ➤ <i>Gokul J. Goche</i> ➤ <i>Gaurav V. Chikte</i> ➤ <i>Ruchita D. Bambole</i> ➤ <i>Umesh G. Bonde</i> 	38
73	Minimizing penalty by engaging apfc unit for industris <ul style="list-style-type: none"> ➤ <i>Sagar Rahangdale</i> ➤ <i>Ankita Khandait</i> 	38
74	Utilizing a programmable logic controller (PLC) to control conveyor belt <ul style="list-style-type: none"> ➤ <i>Dhanshri S. Dahule</i> ➤ <i>Sakshi D. Sontakke</i> ➤ <i>Pratiksha K. Thakare</i> ➤ <i>Ajaj N. Khan</i> ➤ <i>Divya A. Bawane</i> 	39
75	Experimental Study On Autoclaved Aerated Concrete Blocks as Energy Efficient Building Construction Materials <ul style="list-style-type: none"> ➤ <i>Raj Kanojiya</i> ➤ <i>Komal Yelgure</i> ➤ <i>Mayur Lanjewar</i> ➤ <i>Ajay Burile</i> 	40
76	Review paper on execution of residential building and compare with 'sap2000 <ul style="list-style-type: none"> ➤ <i>Sumitsingh R. Suryawanshi</i> ➤ <i>Prof. Nidhi Jejurikar</i> 	41
77	Review Paper on performance of footing on inclined pile stabilized slope <ul style="list-style-type: none"> ➤ <i>Avi Yuvraj Nagpure</i> ➤ <i>Prof. Nidhi Jejurikar</i> 	41
78	A Review Paper on "U-Boot Beton: The Concrete Saver <ul style="list-style-type: none"> ➤ <i>Akshaykumar</i> ➤ <i>Udaysingh Yadav</i> ➤ <i>Prof. Gaurav Hingwe</i> 	42
79	Analysis of Multistorey (G+7) RCC Structure using STAD.PRO & AutoCAD <ul style="list-style-type: none"> ➤ <i>Arti M. Sorte</i> ➤ <i>Prayas Borkar</i> ➤ <i>Chaitanya G. Dhande</i> ➤ <i>Jayesh Tamshetwar</i> ➤ <i>Sohil Mehram</i> 	42

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
80	Utilization of sugarcane bagasse ash as supplementary cementitious material in concrete <ul style="list-style-type: none"> ➤ <i>Amitdada Kashiwar</i> ➤ <i>Shubham barai</i> ➤ <i>Arman Badole</i> ➤ <i>Ishika Jambudkar</i> ➤ <i>Kshitij Thate</i> 	43
81	Design and Implementation of a Rotating Solar Panel System Controlled by ATMEGA328 Microcontroller for Optimal Energy Generation. <ul style="list-style-type: none"> ➤ <i>B. Parodhe</i> ➤ <i>M. Pathan</i> ➤ <i>Chaitanya S. Zade</i> ➤ <i>Ashish B. Badkhal</i> ➤ <i>Sameer S. Raut</i> 	43
82	Memristors for Logic Designs : An Emerging Technology <ul style="list-style-type: none"> ➤ <i>Malvika Saraf</i> 	44
83	High Power Factor PWM Controlled single phase Fan regulator <ul style="list-style-type: none"> ➤ <i>Prof. Pravin K Mandvikar</i> ➤ <i>Prof. Arvind M. Padole</i> ➤ <i>Prof. Priyanka Deshmukh</i> ➤ <i>Prof. Ankita Khandait</i> 	44
84	Review on bio-medical waste management <ul style="list-style-type: none"> ➤ <i>Sunil Bhandarwad</i> ➤ <i>Kalyanswami Borkar</i> ➤ <i>Ayush Pasine</i> ➤ <i>Rupali Shendurkar</i> ➤ <i>Ayan Sethiya</i> 	45
85	Review on study of defects on dongargaon flyover. <ul style="list-style-type: none"> ➤ <i>Suyog Nagalwade</i> ➤ <i>Prajyot Nimgade</i> ➤ <i>Karan Shende</i> ➤ <i>Savita Katre</i> 	46
86	Urban Fire Risk Assessment and Green Spaces Correlation: A Geospatial Analysis of Five Zones of Nagpur City <ul style="list-style-type: none"> ➤ <i>Kirti Vijay Thakare</i> ➤ <i>Dr. Kiran Megharaj Tajne</i> 	46
87	A Fruit and Vegetable Peeler with Integrated Peel Storage. <ul style="list-style-type: none"> ➤ <i>Sumit Rathod</i> ➤ <i>Samirrodin Khatib</i> ➤ <i>Mukesh Rathod</i> ➤ <i>Gulfam Ansari</i> ➤ <i>Dr. Durwesh Jhodkar</i> ➤ <i>Dr. Somdatta Karanjekar</i> 	47

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
88	Controllable Power Factor And Efficiency Improvement of Three Phase Induction Motor Using Extinction Angle Control <ul style="list-style-type: none"> ➤ <i>Krutika D. Gaikwad</i> ➤ <i>Arvind M. Padole</i> ➤ <i>Pravin K. Mandvikar</i> 	48
89	PWM Controlled DC Drive With AC Input <ul style="list-style-type: none"> ➤ <i>Prof. D. R. Tutkane</i> ➤ <i>Shikha Upadhyay</i> ➤ <i>Shubhangi Nikhade</i> ➤ <i>Shital Tiwade</i> ➤ <i>Sameer Bopche</i> ➤ <i>Dipak Tembare</i> 	48
90	Development of an Automatic Sorting system for Objects on a Height Basis <ul style="list-style-type: none"> ➤ <i>Swapnil Choudhary</i> ➤ <i>Swapna V. Ghodeswar</i> ➤ <i>Dr. Somadatta Karanjekar</i> ➤ <i>Dr. Bharat Chede</i> ➤ <i>Bhavesh A. Bohra</i> 	49
91	Modified Existing Conventional Meter Into Smart Meter <ul style="list-style-type: none"> ➤ <i>Prof. Priyanka Deshmukh</i> 	51
92	Using iot and big data for evidence-based urban policy in smart cities: possibilities, difficulties, and epistemological issues <ul style="list-style-type: none"> ➤ <i>Dr. Shilpa Kalambe</i> ➤ <i>Dr. Ujwalamalkhandale</i> ➤ <i>Bhojraj N. Kale</i> ➤ <i>Dr. Sanjay Jain</i> 	52
93	Iot-Enabled Smart Energy Grid: Possible Applications and Challenges <ul style="list-style-type: none"> ➤ <i>Dr. Shilpa Kalambe</i> ➤ <i>Dr. Sanjay Jain</i> ➤ <i>Dr. Pradhnya More</i> ➤ <i>Dr. Ujwala malkhandale</i> ➤ <i>Bhojraj N. Kale</i> 	52
94	Fabrication of window cleaner machine <ul style="list-style-type: none"> ➤ <i>Roshan Kose</i> ➤ <i>Swapnil Chaudhary</i> ➤ <i>Dhananjay Nandanwar</i> ➤ <i>Mukul Harinkhede</i> ➤ <i>Anurag Khade</i> ➤ <i>Darshan Lichade</i> 	53

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
95	Optimizing Testing Lab Efficiency: A Case Study on Lean Manufacturing Tools <ul style="list-style-type: none"> ➤ <i>Mahobiya Vijayshri</i> ➤ <i>Somdatta karanjekar</i> ➤ <i>Jaju S.B</i> ➤ <i>Durwesh jhodkar</i> 	53
96	Implementation of three phase residual circuit breaker <ul style="list-style-type: none"> ➤ <i>Arvind. M. Padole</i> ➤ <i>Pravin Mandvikar</i> ➤ <i>D. R. Tutkane</i> 	54
97	Comparative approach of sensing element used in Photo-Luminescence <ul style="list-style-type: none"> ➤ <i>Mr. Devidas B. Sonkusare</i> ➤ <i>Mr. Vikram R. Nevhal</i> ➤ <i>Dr. Pradeep B. Dahikar</i> 	54
98	Fabrication of strip-making machine from scrap plastic bottles. <ul style="list-style-type: none"> ➤ <i>Aditya Chawke</i> ➤ <i>Payal Rakshe</i> ➤ <i>Dhanshri Meshram</i> ➤ <i>Premlata Nagpure</i> ➤ <i>Ravindra Raut</i> 	55
100	A research review paper on green manufacturing technology <ul style="list-style-type: none"> ➤ <i>Priyanka A. Dubey</i> ➤ <i>Payal A. Ghangare</i> ➤ <i>Suhas T. Wankhede</i> ➤ <i>Swapnil Choudhary</i> 	56
101	A research review paper on prevention of railway accident using arduino based safety system <ul style="list-style-type: none"> ➤ <i>Payal A. Ghangare</i> ➤ <i>Priyanka A. Dubey</i> ➤ <i>Bhushan Meshram</i> ➤ <i>Dhiraj Bahe</i> 	56
102	Integration of vertical axis wind turbine with flywheel <ul style="list-style-type: none"> ➤ <i>Suhas wankhede</i> ➤ <i>Swapnil Chaudhary</i> ➤ <i>Rahul khudre</i> ➤ <i>Sarang ragit</i> ➤ <i>Akash dhangol</i> ➤ <i>Abhinay singh</i> 	57
103	Optimization of Carbon Injection System in Steel Melting Shop: A Case Study <ul style="list-style-type: none"> ➤ <i>Divya Shrivastava</i> ➤ <i>Shrikant Shrivastava</i> ➤ <i>vijayshri mahobiya</i> 	57

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
104	Automatic timetable generator using php language" <ul style="list-style-type: none"> ➤ <i>Rahul Bhandekar</i> ➤ <i>Rutuja Nanhore</i> ➤ <i>Anjali Meshram</i> ➤ <i>Dolly Kshirsagar</i> ➤ <i>Nikhil Patle</i> 	58
105	Pyridine Catalysed Metal Free Amination of Aromatic Acids with Hydrazine <ul style="list-style-type: none"> ➤ <i>Prof. Digambar Girhe</i> 	59
106	Exploring Block chain for Enhanced IoT Security: A Two-Layer Approach to Authentication and Authorization <ul style="list-style-type: none"> ➤ <i>Prof (Dr.) Ajay Kumar Sharma</i> ➤ <i>Renu Goswami</i> 	59
107	A comprehensive solar modeling and programming simulation tool employed in designing a continuous solar-powered adsorption refrigeration system.: Trnsys 16 <ul style="list-style-type: none"> ➤ <i>Prof. Mithlesh Pande</i> 	60
108	Speech Improvement Using An Efficient Adaptive Filter <ul style="list-style-type: none"> ➤ <i>Prof. Gaurav Patel</i> ➤ <i>Prof. Harshal Shelar</i> ➤ <i>Prof. Shishir Dadich</i> ➤ <i>Prof. Harshal.chaughule</i> 	60
109	Restricted Entry Zone Intrusion Notifier System with Alarm <ul style="list-style-type: none"> ➤ <i>Adarsh k navghare</i> ➤ <i>Amay P Acharya</i> ➤ <i>MohitKumar R Turkar</i> ➤ <i>Dipak L Rahangdale</i> ➤ <i>Ajay Y baghele</i> 	61
110	Innovating Construction: Cotton Thread as an Admixture in Cement Bricks <ul style="list-style-type: none"> ➤ <i>Chandni Kapse</i> ➤ <i>Gulshan Borade</i> ➤ <i>Dishant Dighore</i> ➤ <i>Kunal Patle</i> ➤ <i>Sachin Bhangre</i> ➤ <i>Pallavi Deotale</i> 	61
111	Monitoring of pollutants in the air of Pune City <ul style="list-style-type: none"> ➤ <i>Nidhi Mishra</i> ➤ <i>Nidhi Sharma</i> 	62
112	An approach towards Virtual Intelligent SoftLab On Smartphone Application Development <ul style="list-style-type: none"> ➤ <i>Bhaskar Yadao Kathane</i> ➤ <i>Kishor Madhukar Dhole</i> ➤ <i>Sachin Y. Zade</i> 	62

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
113	Smart services management system ➤ <i>Sujata Dake</i> ➤ <i>Sabanam Sahare</i> ➤ <i>Sneha Tandekar</i> ➤ <i>Atharv Dharme</i> ➤ <i>Ritiksha Kambale</i>	63
114	Dc to dc variable converter ➤ <i>Ms .Nikita Sathwane</i> ➤ <i>Ms .Kalyani Chandel</i> ➤ <i>Ms .Kalyani Agashe</i> ➤ <i>Ms .Sonali Jaiswal</i> ➤ <i>Ms .Laxmi Patle</i>	63
115	Integration of Real Time Analytics and Unified Information Management with Intelligent Process in Big Data and Analytics ➤ <i>Dr. Vaibhav R. Bhedi</i>	64
116	Design experimental apparatus for flamespray pyrolysis ➤ <i>Leena Magarde</i> ➤ <i>Pankaj Nagpure</i> ➤ <i>Shubham Thakre</i> ➤ <i>Pragati Kharbade</i>	64
117	Single Phasing preventer, cum voltage unbalance Relay for Protection of Three Phase Induction Motors ➤ <i>Prof. Prafulla Puri</i> ➤ <i>Dr. D.R.Tutakne</i> ➤ <i>Dr Somadatta Karanjekar</i> ➤ <i>Dr.Bharat Chede</i> ➤ <i>Prof. Pravin Mandvikar</i> ➤ <i>Prof. Sagar Rahangdale</i>	65
118	Multilevel Smart Car Parking System with Horizontal Rotary Mechanism ➤ <i>Jyoti M. Kumbhare</i> ➤ <i>Ashutosh D. Bagde</i> ➤ <i>Sarvesh Chaudhari</i> ➤ <i>Yash Balapure</i>	65
119	Industrial robotic arm using raspberry pi ➤ <i>Rupali Dasarwar</i> ➤ <i>Nayan Thakre</i> ➤ <i>Kundan Tikale</i> ➤ <i>Tejas Randive</i> ➤ <i>Adarsh Dhoke</i>	66
120	IOT Based Industrial Cloud Monitoring System for Hazardous Emissions ➤ <i>Mr.Vikram Ramesh Nevhal</i>	66

CONTENTS

SR.NO	TITLE AND AUTHORS	PAGE NO
121	Accident detection system with gps , gsm and buzzer ➤ <i>Prof. Swapnil Chaudhary</i> ➤ <i>Vishal Bopche</i> ➤ <i>Mrunal Thawkar</i> ➤ <i>Priyanka Bawane</i> ➤ <i>Pradya dhok</i>	67
122	Experimental analysis of tool wear and cutting force during machining of EN24 grade steel using nanoparticle based cutting fluid ➤ <i>Durwesh Jhodkar</i> ➤ <i>Akhilesh Choudhar</i> ➤ <i>y Tapus Bajpai</i> ➤ <i>Rakesh Haldkar</i>	67

**VEHICLE NUMBER PLATE IDENTIFICATION AND
RECOGNITION OF NUMBER PLATE USING DEEP LEARNING
BASED ON APPROACHES IN IMAGE AND VIDEOS**

Manisha Dhargawe¹, Prof. R.Y Bhandekar², Prof. Monika Ingole³

¹Student of M-Tech Computer Science Engineering Department in WCEM, Nagpur

^{2,3}Assistant Professor of M-Tech Computer Science Engineering Department in WCEM, Nagpur
dhargawemanisha61@gmail.com, rahulbhandekar@gmail.com

ABSTRACT

The need for improved security and effective transportation solutions is greater than ever in the quickly changing world of technology. Given the exponential expansion billion automobiles on the road throughout the previous ten years, tracking individual vehicles has grown more difficult. This research presents a novel approach to automatic vehicle monitoring by deploying security cameras placed on roads. Because it is understood that getting access to CCTV footage in real time might be a laborious procedure, this work uses an effective deep learning model the You Only Look Once (YOLO) architecture for object detection. The four main steps of the suggested method are as follows: first, the video material is transformed into photos, and next, each frame's automobiles are identified.

Key Words: Number plate, easyocr, Deep Learning Model, OpenCV.

**I STUDENT PORTAL: INNOVATIVE SOLUTION FOR
AUTOMATE THE
ACADEMIC MANAGEMENT SYSTEM USING DJANGO AND
PYTHON**

Prof. Rahul Bhandekar¹, Mr. Sanket Rathod², Mr. Harshal Balpande³

¹Department of Computer Science & Engineering, Wainganga College of Engineering
& Management, Nagpur, Maharashtra, India.

^{2,3}Department of Computer Science & Engineering, Wainganga College of Engineering & Management,
Nagpur, Maharashtra, India.

rahulbhandekar@gmail.com, sanketrathod059@gmail.com, harshalbalpande28@gmail.com

ABSTRACT

The iStudent portal is an innovative solution for academic management system using Python, Django, HTML, CSS, and JavaScript. This innovative web-based platform revolutionizes attendance and marks management, consolidating records and expediting leave request processing. It boasts a user-friendly interface tailored for both educators and students, prioritizing data security to student database and privacy. Developed through various stages, it follows best practices to ensure scalability, maintainability, and security. The iStudent portal project solves the issues of manually tracking attendance and grades in schools. It offers a customizable solution to improve efficiency and transparency, making the management process easier.

Keywords: Academic Management, Attendance Management, Marks Management, Leave Request Processing, Web-Based System, Python, Django, Record-Keeping, Educational Institutions.

WSN-BASED DATA ACQUISITION SYSTEM FOR COLLECTING ENVIRONMENTAL POLLUTION FACTORS FOR GREEN CITY

Sneha Ghanshyam Gobade¹

¹Department of Computer Science & Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

snehagobade7@gmail.com

ABSTRACT

The development of a portable intelligent weather monitoring station greatly enhances environmental monitoring and management. The device utilizes IoT technology to provide real-time measurement and analysis of meteorological and air quality indicators, giving significant insights into environmental conditions. The monitoring station's hardware components consist of an ESP32 board for data transfer, a DHT11 sensor for measuring temperature and humidity, and MQ2, MQ3, and MQ135 sensors for detecting different gases. The intelligent weather monitoring station is created to be versatile and portable, enabling straightforward deployment in various environments. The compact size and wireless connectivity allow easy integration into current systems, making data collecting and transfer more efficient.

Keywords: Smart weather monitoring station, IoT technology, Environmental monitoring, Air quality, Real-time data, Data transmission, Blynk platform, Portable design, Green city

ANDROID BASED IMAGE STEGANOGRAPHY

Prashant Khetade¹, Shubhangi Kuhikar², Pooja Bhaire³, Priyanka Somankar⁴, Achal Landekar⁵

¹Assi. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}B. Tech Student, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Basically, Image Steganography is the process of hiding information which can be text, images or video inside the cover image. Android Based Image Steganography is a simple android application that implements steganography concepts. In this project Image Steganography is used so that text-messages can be hidden securely in an image. Here, the Sender is uploading an image which hide the secret message. Sender should upload image, add a secret Message and a secret key in order to encode the message and hide it in the image. Receiver can decode the message with secret key shared by sender. The main advantage of steganography algorithms is because of its simple security mechanism.

Keywords: Steganography, Upload Image, Encoding, Decoding, Secret Message, Secret Key, Encryption technology, Android Application

ONLINE VOTING SYSTEM

Monika Ingole¹, Shrikant Mandhare², Shubham Raktasinge³, Nikita Badne⁴

¹Asst. Professor, Department of Computer Science and Engineering, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

^{2,3,4}B.Tech Student, Department Of Computer Science and Engineering Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

ABSTRACT

This research paper introduces a secure online voting system aimed at modernizing the electoral process. By incorporating advanced techniques and user-friendly interfaces, the system ensures both security and accessibility. Additionally, the system's design prioritizes inclusivity, accommodating diverse demographics and streamlining the voting process. The implementation of advanced technologies in elections becomes more effective, beneficial and valuable to eliminate the fraud attempts in voting, to get accurate voting results and to raise the voter turnout. This is a project proposal document for developing a Web-based Social Election Platform to handle elections and have a social aspect to allow engagement between candidates voters. This is to ease voting by people during any elections. It consists of the current background of the manual voting system and problems associated with it and how we are going to overcome them through the proposed system. With this system in place, the users in this case shall be given sample time during the voting period. They shall also be trained on how to vote online before the election time. Overall, this research contributes to the advancement of democratic practices by offering a reliable and efficient online voting solution.

AGROWORK

Prof. Bhagyashri Dongare¹, Sakshi Chaudhari², Dnaneshwari Bhonde³, Aniket Chandewar⁴, Amey Kadwe⁵

¹Asst. Professor, Department of Computer Science and Engineering, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

^{2,3,4} B.Tech Student, Department Of Computer Science and Engineering Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

ABSTRACT

The agriculture industry faces a significant challenge in finding skilled and experienced workers in rural areas. The "Agrowork" web application aims to address this issue by providing an innovative online job portal for the agriculture sector. The platform consists of three modules: the farmer module, the Contractor module, and the admin module. Farmers can register and create profiles, access a database of available contractors, and review their profiles and ratings. Contractors can register with their suitable workers who best fit for particular work and highlight their skills, experience, and preferred job types. The platform allows users to search for job opportunities based on location, job type, and other criteria. The user-friendly platform has a simple registration process for both farmers and workers. Farmers can create job advertisements, which are reviewed by an administrator and published on the platform. The platform is accessible from any device with an internet connection, making it easy to use from anywhere.

Keywords: Contractor Module, Agriculture Sector, Rural Areas, Workers, Farmers, Web, Profiles, Create,Registration,Job,Platform,Jobadvertisement,Experienced.

AUTOMATIC TIMETABLE GENERATOR USING PHP LANGUAGE

Rahul Bhandekar¹, Rutuja Nanhore², Anjali Meshram³, Dolly Kshirsagar⁴, Nikhil Patle⁵

¹Asstt. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}BTech Student, Department of, Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

The manual system of preparing time table in colleges with large number of students is very time consuming and usually ends up with various classes clashing either at same room or with same teachers having more than one class at a time. These are just due to common human errors which are very difficult to prevent in processes such as these. To overcome these problems people usually taking the previous year's timetable and modifying it but still it is at edicios job to incorporate changes. To overcome all these problems we propose to make an automated system. The system will take various inputs like details of students, subject sand class rooms and teachers available, depending upon these inputs it will generate a possible time table, making optimal utilization of all resources in a way that will best suit any of constraints or college rules.

SIGN LANGUAGE TRANSLATION: BRIDGING GAPS IN COMMUNICATION

Sujata Dake¹, Manthan Kawathe², Nikhil Gharat³, Gevit Nimkar⁴, Swetal Suryawanshi⁵

¹Assi. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}BTech Student, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

This paper presents the "Sign Language Translator," a revolutionary tool designed to facilitate communication between sign language users and those who do not understand sign language. Utilizing advanced technologies such as computer vision and machine learning, this tool converts sign language into written language in real-time. It has been trained to recognize a wide range of sign language gestures from different parts of the world, making communication more accessible for everyone. The Sign Language Translator, known as Gesture2, has undergone extensive testing to ensure high accuracy in its translations. Additionally, the development process involved collaboration with sign language experts to refine and improve the tool's performance.

Keywords: Real-time translation, Bridging communication gap, Accessibility, Computer vision, Machine learning, Collaboration with sign language experts.

EFFICIENT CLASSROOM MONITORING USING INTERNET OF THINGS

Prof. Bhagyashri D. Dongare¹, Sanjana P. Bhojar², Vaishnavi R. Bhure³, Sanjana R. Marode⁴

¹Asst. Professor, Department Of Computer Science And Engineering, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India.

^{2,3,4}B.Tech Student, Department Of Computer Science And Engineering, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India.

ABSTRACT

The "IoT-Based Classroom Attendance Monitoring System" is a project designed to automate recording student attendance in a classroom setting. This system employs IoT modules, specifically IR sensors and NodeMCU, to accurately count the number of students entering and exiting a classroom. The captured data is transmitted to the Firebase Realtime Database for storage and retrieval. The project also utilizes the Angular framework to create a user-friendly frontend for accessing attendance records stored in Firebase. The 'Efficient Classroom Monitoring' (ECM) is a project designed to automate recording student counts in a classroom setting. This system employs IoT modules, specifically IR sensors and NodeMCU, to accurately count the number of students entering and exiting a classroom. The captured data is transmitted to the Firebase Realtime Database for storage and retrieval.

MULTI-TIERED PASSWORD AUTHENTICATION SYSTEM

Hashali Ragite¹, Bhushan Bankar², Samiksha Mule³, Vicky Amborkar⁴

¹Assi. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4}B.Tech Student, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

In an increasingly interconnected digital world, online security has become a paramount concern. As recent cyber threats, exemplified by the Pegasus attack, have demonstrated the ever-growing sophistication of malicious actors, there is a pressing need to innovate and fortify authentication systems. In response to this urgency, we introduce a robust "MULTI-TIERED PASSWORD AUTHENTICATION SYSTEM", a multi-layered approach aimed at bolstering website protection and preventing unauthorized access. The motivation for our project arises from the disconcerting reality that cybercriminals can operate undetected for extended periods, exploiting vulnerabilities in traditional authentication methods. The Pegasus attack, which allowed intruders to compromise mobile phones without users' awareness, serves as a stark reminder of these vulnerabilities.

CYBERHACKING BREACHES PREDICTION AND DETECTION

Prof. Alsaba Naaz¹, Maivis Sheikh², Vaishnavi Narnaware³, Sneha Chilkapure⁴, Kranti Bhatwalkar⁵

¹Asst. Professor, Department of Information Technology, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

^{2,3,4,5}B. Tech Student, Department of Information Technology, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

ABSTRACT

In a generation where cyber security threats have become more and more sophisticated, the need for sturdy prediction and detection structures to guard in opposition to cyber hacking breaches is a paramount. This mission affords a singular technique to deal with this concern, using Machine Learning techniques, in particular the Random Forest Classifier, to accurately expect and locate ability cyber hacking breaches. Implemented in Python, the proposed device makes use of a cautiously curated dataset of 5457 URLs, encompassing 87 extracted features. Crucially, the dataset maintains a balanced composition, precisely divided between 50% phishing and 50% legitimate URLs. The project's number one consciousness lies in correctly figuring out cyber threats at the same time as minimizing fake positives. Through rigorous schooling and evaluation, the carried out consequences display the system's fantastic performance.

Keywords: Cybersecurity, Machine Learning, Random Forest Classifier, and Phishing Detection.

DETERMINE THE DECISION DRIVING STRATEGY OF AN AUTONOMOUS VEHICLE

Prof. Rahul Bhandekar¹, Ashish Thengare², Prof. Monika Ingole³

²Student of M-Tech Computer Science Engineering Department in WCEM, Nagpur

^{1,3}Assistant Professor of M-Tech Computer Science Engineering Department in WCEM, Nagpur

ABSTRACT

Autonomous vehicles represent a significant technological advancement poised to revolutionize transportation systems worldwide. A critical aspect of Autonomous vehicles lies in their decision-making capabilities, wherein they must navigate complex environments while ensuring passenger safety and adhering to legal and ethical guidelines. The driving style of a moving, autonomous vehicle that is not totally determined by external factors (such as pedestrian traffic, road conditions, etc.) ignoring the state of the interior of the car. In order to determine the optimal approach for an autonomous car, this paper suggests "A Driving Decision Strategy (DDS) In light of ML for an Autonomous Vehicle," which takes into account both external and internal vehicle components. The advent of autonomous vehicles has brought about a paradigm shift in transportation, promising safer and more efficient journeys..

Key Words: Autonomous vehicles, Driving Decision Strategy, Multilayer Perceptron, Genetic Algorithm, Random Forest Classifier

DIGITAL VOTING SYSTEM

Prof. Rashmi Kannake¹, Ashutosh Upadhyay², Shruti Ghusar³, Kunal Markam⁴, Ajit Patle⁵

¹ Asst. Professor, Department Of Information Technology, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India.

^{2,3,4,5} B.Tech Student, Department Of Information Technology, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India.

ABSTRACT

In India, there are two types of system for voting in general i.e., paper based and electronic machines based. However, both of the process have some disadvantages of its own. The current voting system is also that much not safe and efficient. The voter who is not eligible can also cast its vote by fake means causing voter's identity authentication problems. Also, unlike many countries, in India the online voting hasn't been implemented yet. In this project, we proposed a online voting system that uses facial recognition of the voter to cast vote. In our method we've got 3 modules withinside the vote casting process: viz. Super Admin, Admin & User. The super admin enrolls all the election areas and candidates for that area. Admin have to add the voters via a voter enrolment form along with their photographs. At the time of elections, the voter can generate their one-time code using face recognition. This code is used to access the user module. In user module, the voter can cast their vote to a particular member that they want. The super admin then release the results after the voters are done voting. The results are viewed in the user panel, addressing the voter identity authentication issue.

Keywords: Voting System, Authentication, Election Security, and Facial Recognition.

FAKE NEWS DETECTION USING MACHINE LEARNING

Sparsh Gajbhiye¹, Achal Kale², Dr. Manish T. Wanjari³

^{1,2,3} Department of Computer Science, SSESA's, Science College, Congress Nagar, Nagpur
sparshgajbhiye1812@gmail.com¹, aachalkale2607@gmail.com², mwanjari9@gmail.com³

ABSTRACT

Fake news on social media and news, articles etc. poses a significant concern due to its potential to cause harm to society and the nation. It can spread false information about a country, including fabricating government expenses, leading to various societal problems. The proliferation of fake news and scams coincided with the advent of the internet, aimed at misleading people, gaining followers, and even perpetuating psychological conflicts. The dissemination of news across multiple media platforms without adequate fact-checking has exacerbated the issue of fake news, making it a pervasive problem. We discuss a novel approach to detecting fake news by leveraging the Scikit Learn library for data processing and Natural Language Processing (NLP). The model utilizes TF-IDF vectorization for feature extraction, enabling the identification of key patterns in textual data and converting text into numerical data. In this research paper we implement the experimentation on a Fake News Detection Algorithms such as machine learning algorithms, including Logistic Regression Support Vector Machine, Decision Tree and Random Forest and produce the results of fake news.

Keywords: Fake News Detection (FND), Machine Learning (ML), TF-IDF vectorizer, Stopwords, Stemming, Tokenization, Logistic Regression (LR), Random Forest, SVM, Decision Tree

“SMART CAMPUS SURVEILLANCE AND GUIDANCE SYSTEM”

Rahul Bhandekar¹, Hritika Belekar², Pallavi Kurve³, Mohammad Farman ur Rahman⁴, Mohammad Taifur Shaikh Feroz Ahmed⁵

¹ Assi. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

The goal of the Smart Campus Surveillance-Based Guidance System is to help educational institutions have access to more sophisticated surveillance equipment so they can assign students to the right classes. Students in the classes they are enrolled in will benefit from this, as well as help with monitoring them while they are on campus. This allows the surveillance to identify students who choose to attend or skip class. When a student skips class, the system will identify which subject they will be studying for and whether the lecture will begin at that moment. If the lecture is already underway, the system will alert the lecturer and the head of department that "the student is bunking the lecture." On the other hand, the bunking system is the foundation of this project. This is how monitoring determines whether or not a pupil is bunking. This project is to use cutting-edge surveillance technologies to improve student security and guidance on university campuses. Our system combines physical infrastructure with intelligent technologies to deliver enhanced services, decision-making, and sustainability. Our initiative seeks to address the issue of students becoming lost on campus or skipping lessons, which can cause social and intellectual issues. The program keeps track of students' Utilizing a real-time guidance system, the system directs students' movements to their designated classrooms. Keywords: Computer vision, object detection, real-time alerts, face identification.

GRACEFIT TRACKER

Prof. Tara Shende¹, Mr. Tushar Pawar², Miss. Gayatri Naik³

^{1,2,3} Department of Computer Science & Engineering,
Wainganga College of Engineering & Management, Nagpur, Maharashtra, India
tarashende@gmail.com¹, tp99011@gmail.com², naikgayatri286@gmail.com³

ABSTRACT

In light of the global obesity epidemic exacerbated by widespread sedentary lifestyles, it becomes imperative to prioritize Living a healthy lifestyle. for overall well-being. Fitness, which significantly impacts Quality of life related to health., often faces obstacles due to the expenses and limitations associated with personal trainers. While independent workouts can be advantageous, they also carry risks without proper supervision, potentially leading to serious mistakes. To tackle these challenges, the GraceFit Tracker emerges as an innovative web application that seamlessly incorporates advanced AI technology into fitness regimens.

Keywords: AI-powered fitness, Real-time pose detection, Motivation for exercise, Privacy-focused fitness, Web-based platform, JavaScript programming, Fitness monitoring, Move Net technology, OpenAI integration.

KANBAN BOARD SYSTEM USING NODE JS

Prof. Rashmi Kannake¹, Payal Domale², Komal Shrivastav³, Grishma Patle⁴, Shreekant Jadhav⁵

¹Asst. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India
rashmikannake11@gmail.com¹

^{2,3,4,5} Student, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India
payaldomale2@gmail.com², komalshrivastav813@gmail.com³, patlegrishma6@gmail.com,
shreejadhav7448@gmail.com⁵

ABSTRACT

In the dynamic landscape of project management, efficient task organization and workflow optimization are essential for maximizing productivity and ensuring timely project completion. The Kanban Board Project presents a novel approach to project management by harnessing the power of Kanban methodology and integrating it into a user-friendly digital platform. This innovative solution is tailored to address the evolving needs of modern project teams, providing a streamlined and visual framework for task management, collaboration, and progress tracking. Drawing inspiration from the principles of kanban, the Kanban Board Project offers a flexible and intuitive interface that allows users to visualize their workflows, prioritize tasks, and manage work in progress effectively.

Keywords: Kanban Methodology, Node JS, Digital Platform, Web Based System, React JS, Efficiency

A SURVEY OF DEEP LEARNING-BASED LANE DETECTION METHODS FOR AUTONOMOUS VEHICLES: COMPARISON AND FUTURE DIRECTIONS

Ashish S. Waikar¹, Dr. Manish T. Wanjari²

^{1,2} Dept. of Computer Science SSES's Science College, Congress Nagar, Nagpur (MS), India.
aswaikar123@gmail.com¹

ABSTRACT

Lane detection, the process of identifying lane markings as approximated curves, is widely used for lane departure warning and adaptive cruise control in autonomous vehicles. In this research paper, we discussed a comprehensive survey of recent visual-based lane detection methods, especially those based on deep learning. We provide qualitative and quantitative comparisons with several existing state of the art methods. Additionally, we undertake a comparative evaluation of some pre-existing lane detection models on a small subset of the TuSimple dataset, offering insights into their performance under controlled conditions. We also discussed the advantages and limitations of the existing methods and suggested some possible directions for future research. In this paper we implement the existing methodologies and produce the results. Keywords: Lane detection, ResNet, CNN, Python, Deep Learning, Pytorch, TuSimple, lane segmentation, Classification, Transformer

EXPLORING EMAIL AUTO DELETION

**Prof. Harshali Ragite¹, Mr. Manav Neware², Mr. Saurabh Deotale³,
Mrs. Rohini Durugkar⁴, Mrs. Prachi Paturkar⁵**

¹Information Technology, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

^{2,3,4}Information Technology, Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India

ABSTRACT

Email overload is a prevalent issue in modern communication, where users are inundated with a deluge of messages daily. To mitigate this overload, automated email deletion mechanisms have gained traction. However, the effectiveness and user satisfaction with such systems remain largely unexplored. This paper presents a study aimed at investigating the impact of email auto deletion on user behavior and satisfaction. Through a user-centric approach, we conducted a series of experiments involving participants from diverse demographics to understand their email management habits and preferences. Participants were exposed to different auto deletion settings, including time-based deletion, sender-based deletion, and machine learning-driven deletion algorithms. We assessed the impact of these settings on users' email processing efficiency, stress levels, and overall satisfaction. Our findings reveal nuanced insights into the effectiveness of email auto deletion strategies.

BUS PASS MANAGEMENT SYSTEM

Prof. Nikita Nandapure¹, Ritik Shid², Diksha Parate³, Trupti Awadhut⁴, Kirti Dekate⁵

¹ Asst. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

^{2,3,4,5} Student, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

ABSTRACT

Python's bus pass management system serves as a comprehensive platform for handling bus pass operations efficiently. This system facilitates the management of various aspects, including pass issuance, renewal, and tracking. It incorporates a user-friendly interface enabling passengers to apply for passes online, reducing physical paperwork. The system employs a database to store passenger information securely, including personal details and pass validity. It utilizes Python's robust features to automate processes, such as pass validation and expiry notifications, ensuring a seamless user experience. Administrators can monitor pass utilization, track revenue, and generate insightful reports for decision-making purposes. Furthermore, this system supports various pass types, accommodating diverse user requirements like monthly, weekly, or daily passes. It integrates payment gateways for online transactions, enhancing convenience for passengers. Additionally, it incorporates security measures to prevent fraudulent activities, safeguarding the integrity of the pass issuance process.

Keywords: Pass Management, Online Pass Generate, Web-Based system, Python, Django

ROCKET LANDING USING REINFORCEMENT LEARNING

Prof. Prashant Khetade, Dipa Shende, Saachi Singh, Chetan Kathane, Shital Dambhare

Department Of Computer Science And Engineering , Wainganga College Of Engineering And Management, Nagpur, Maharashtra, India.

ABSTRACT

This paper investigates the use of underpinning learning in autonomously landing rockets. We introduce an innovative system employing deep underpinning learning to produce a dependable and flexible control system for accurate and secure rocket descent. The model undergoes training in simulated surrounding emulating real-world wharf scripts, showcasing its successful adaption to physical rocket levees. Our findings emphasize the effectiveness of underpinning learning in refining wharf strategies, offering promising advancement in independent space disquisition by studying these we believe that the rocket is going to safely land on space.

SMART VIRTUAL VOICE ASSISTANT USING PYTHON

Prof. Rashmi Kannake¹, Pranmya Kale², Nikhil Dongre³, Vipul Kshirsagar⁴, Yogesh Tajane⁵

¹Asst. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India
rashmikannake11@gmail.com¹

^{2,3,4,5} Student, Department of Computer Science and Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India
pranmya.kale@gmail.com², nikhildongre470@gmail.com³, vipulkshrsgr@gmail.com⁴,
ytajane854@gmail.com⁵

ABSTRACT

Voice assistants have evolved from being mere technological novelties to indispensable tools in our daily lives. Their capability to understand and respond to human voice commands has transformed how we interact with technology. In today's fast-paced world, voice assistants offer invaluable assistance, allowing us to multitask efficiently and stay organized. The widespread adoption of voice assistants is a testament to their utility and convenience. People from all walks of life have seamlessly integrated these programs into their daily routines, relying on them for tasks ranging from setting reminders to controlling smart home devices. This widespread acceptance is evident in the popularity of platforms like Google's smartphone-based assistant, which has become so user-friendly that even young children can navigate it effortlessly. The surge in adoption can be concluded as increasing reliance on smartphones, which has become unavoidable in modern society. Voice assistants like Amazon's Alexa have further cemented their place in our lives by bridging the gap between users and the Internet of Things (IoT).

Keywords: Voice Assistant, Python, Virtual Assistant, Smart Assistant, Alexa, Google Assistant

**PREDICTIVE FIELDS: REVOLUTIONIZING AGRICULTURE
WITH MACHINE LEARNING CROP FORECASTING**

**Prof. Tara Shende¹, Aman Mende², Gayatri Mate³, Sanghadip Devatale⁴,
Roshan Sukhare⁵**

^{1,2,3,4,5}B. Tech, Department of Information Technology, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

This research project focuses on precision agriculture, using advanced machine learning techniques to improve crop management. The project consists of three main components: Crop Recommendation using the Random Forest algorithm with an updated dataset, Fertilizer Recommendation using a data-driven approach, and Plant Disease Detection using Convolutional Neural Network (CNN) Res Net architecture. The Crop Recommendation module uses the Random Forest algorithm to provide farmers with recommendations for optimal crop selection, boosting agricultural productivity. The Fertilizer Recommendation segment uses a data-driven approach, combining soil composition analysis with an extensive fertilizer database to recommend precise fertilizers based on soil nutrient levels. This approach optimizes resource utilization and contributes to sustainable agricultural practices.

Keywords: Precision Agriculture, Machine Learning, Crop Recommendation, Random Forest Algorithm, Fertilizer Recommendation, Convolutional Neural Network (CNN) Res Net, Plant Disease Detection

WORKERS POWER : ON DEMAND SERVICE

Rahul Bhandekar¹, Mayuri Nalgopalwar², Rohit Bopche³, Kirti Bhojar⁴, Sakshi Mule⁵

¹ Assi. Professor, Department of Information Technology and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Information Technology and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

"Workers Power On-Demand Service" revolutionizes employment by seamlessly connecting skilled workers with on-demand job opportunities, offering flexibility and autonomy. With a user-friendly interface and transparent rating systems, quality is maintained while workers enjoy control over their workload and schedules. Employers benefit from a readily available pool of talent, reducing project lead times and adapting to fluctuating demands. Fair compensation and a collaborative environment enhance productivity and job satisfaction. Ultimately, our platform envisions an empowered workforce shaping a more efficient and equitable job market, where individuals thrive on their terms. Keywords: Workers Power On-Demand Service, Efficient job market, Skilled workers, Flexibility, User-friendly interface, Collaborative environment.

“IOT BASED SMART BRIDGE AND MONITORING SYSTEM”

Rupali Dasarwar¹, Tanmay Talwekar², Linta Mendhe³, Harsh Damke⁴, Khushi Markande⁵

¹Assi. Professor, Department of Artificial Intelligence and Data Science, RTMNU University
Nagpur/ Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}B. Tech, Student, Department of Artificial Intelligence and Data Science, RTMNU University

ABSTRACT

Bridges are essential components of modern infrastructure, facilitating the movement of people and goods while connecting communities. As society grapples with the challenges of aging infrastructure and the increasing demands on transportation systems, the concept of a "smart bridge" emerges as a promising solution. Smart bridges leverage cutting-edge technologies and innovative design principles to enhance their performance, safety, and longevity. Smart bridges equipped with an autonomous water-level responsive elevation system represent an innovative and adaptive approach to infrastructure design. These bridges are engineered to detect rising water levels and automatically adjust their height to mitigate the risks of flooding and ensure the uninterrupted flow of transportation. This abstract explores the concept of a smart bridge with a water-level responsive elevation system, emphasizing its potential to enhance resilience and safety in the face of changing weather patterns and climate-related challenges.

**DRIVER DROWSINESS SYSTEM USING PYTHON AND
MACHINE LEARNING**

**Prof. Rahul Bhandekar¹, Mr. Manish Tembhare², Mr. Himanshu Pardhi³, Miss.
Pranali Dekate⁴, Miss. Shivani Amrute⁵**

Department of artificial intelligence and data science, Wainganga College Of Engineering &
Management, Nagpur, Maharashtra, India.

ABSTRACT

This abstract introduces an advanced drowsiness detection system leveraging cutting-edge artificial intelligence (AI) technologies. Drowsy driving poses a significant threat to road safety, leading to accidents, injuries, and fatalities worldwide. To address this critical issue, our research pioneers a novel approach that combines computer vision and machine learning to develop a proactive drowsiness detection system. Our system utilizes a multi-modal sensor setup, including facial recognition, eye tracking, and steering wheel monitoring, to continuously assess the driver's state. By analyzing facial expressions, eye movements, and steering behavior, the AI model can accurately identify signs of drowsiness in real-time.

Keywords: Drowsiness detection. machine learning ,python, deep learning,cv2,dlib

**REVOLUTIONIZING CONTENT DIGESTION: UNLEASHING THE POWER
OF BIDIRECTIONAL AND AUTO-REGRESSIVE TRANSFORMERS IN AI-
POWERED AUTOMATIC TEXT SUMMARIZATION.**

Ms. Vaishali V. Jikar, Dr. Gurudev B. Sawarkar, Ms. Rupali Dasarkar, Ms. Minakshi Dobale
¹**Student**, Artificial Intelligence & Data Science Engineering, Wainganga College of Engineering
and Management, Nagpur

Email Id: vaishalijikar@gmail.com

^{2,3,4}**Assistant Professor**, Computer Science & Engineering, Wainganga College of Engineering
and Management, Nagpur

Email Id: sawarkar92@gmail.com

ABSTRACT

This research project seeks to transform the landscape of automatic text summarization by synergizing the capabilities of Bidirectional and Auto-Regressive Transformers. By leveraging Bidirectional Transformers for comprehensive context understanding and Auto-Regressive Transformers for coherent summarization, we aim to develop an advanced AI-powered summarization system. This system will address the limitations of existing methods, provide contextually relevant and concise summaries, and enhance content curation, news article summarization, and information retrieval. Through rigorous evaluation and comparative studies, we anticipate demonstrating the superior performance of our model, ushering in a new era of content digestion and knowledge extraction in the digital age. **Keywords:** AutoRegressive transformer, Text Summarization, bidirectional transformer, BART, Chatboat.

**"REVOLUTIONIZING HEALTHCARE: ADVANCING PATIENT
CARE THROUGH PRESCRIPTION DIGITIZATION"**

**Yogita Popat¹, Ajita Dhekne², Hrut Munjewar³, Prof. S. H. Jawale⁴, Prof. K. S.
Deosarkar⁵**

^{1 2 3}Student, ^{4 5}Asst. Professor

^{1 2 3 4 5}(Department: Artificial Intelligence & Data Science,

College: Priyadarshini College of Engineering, Near CRPF, Hingna Road, Nagpur – 440019,
Maharashtra (India))

ABSTRACT

Handwriting is the skill of expressing thoughts, ideas and language. Over the years, doctors have been well known for having illegible cursive writing and it has been a generally accepted thing to do. It is not ideal for them to write a prescription quietly and methodically, because they will deal with dozens of patients every day and will be overwhelmed with work. As a result, their handwriting is illegible. This can result in messages or prescriptions consisting of short forms and writing that the typical person or pharmacist will not be able to read correctly, causing prescriptions to be misspelled. So we will use a recognition system to create a tool that can convert doctors' handwriting into a digital readable format. Digitizing medical records, especially in relation to prescription management, has proven to be a critical task in modern healthcare systems. **Keywords :-** CNN (Convolutional Neural Network), RNN (Recurrent Neural Network), LSTM (Long Short Term Memory), TensorFlow, Keras.

OBSTACLE AVOIDANCE & SURVEILLANCE ROBOT

**Harshali Ragtie¹, Shubham Biradar², Shubham Motghare³, Janhvi Hate⁴,
Rut Bijanpaliwar⁵**

¹ Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

An obstacle avoidance and surveillance robot is an autonomous machine that is designed to navigate through an area of disaster (environment) while avoiding obstacles in its path. The robot typically uses sensors such as GPS for accurate location tracking with longitude and latitude coordinates, also ultrasonic, camera, or LIDAR to detect obstacles and sends signals to its control system to take appropriate actions to avoid them. This can include changing the robot's direction, slowing down, or stopping altogether. In recent years, there has been a significant amount of research on obstacle avoidance robots, with various approaches being explored. These approaches include using computer vision techniques such as object detection and recognition, machine learning algorithms, and more traditional sensor-based methods.

Keywords: GPS, GSM, Temperature Sensor, Ultrasonic Sensor, Camera.

INDIAN FAKE CURRENCY DETECTION USING DJANGO FRAMEWORK & IMAGE PROCESSING WITH PYTHON LANGUAGE

**Minakshi Dobale¹, Aakanksha Bawankule², Usha Kshirsagar³, Kanchan Lakhere⁴, Gayatri
Burlawar⁵**

¹ Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Computer Science Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Counterfeit currency poses a significant threat to the economy and financial stability of any nation. In India, the prevalence of fake currency notes presents a pressing challenge for both individuals and institutions. This paper proposes a novel approach to detect Indian fake currency using image processing techniques implemented in Python. The system utilizes advanced image processing algorithms to extract key features and characteristics unique to genuine Indian currency notes. These features include watermark patterns, security threads, microtext, and other intricate details embedded in the currency design. The proposed system employs techniques such as edge detection, texture analysis, and pattern recognition to distinguish between authentic and counterfeit currency. This project is created using Django framework and image processing technique. The suggested system employs image processing to identify genuine currency from counterfeit money. The Python programming language has been used to create the software in its entirety. In this project user can select the note image and then selected image will be pass through the algorithm to detect whether the note is real or fake.

Keywords: Fake Currency, Image Processing, Grayscale Conversion, Segmentation, pre-processing, Feature Extraction, machine learning.

LOCATION TRACKING SYSTEM USING QR CODE

**Minakshi Dobale¹, Shubham Kumbhare², Sanket Dudhe³, Sahil Wase⁴,
Sandip Bawane⁵**

¹ Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Since every aspect of life is technology-based, location tracking has become an important part of many applications, from logistics management to personal security. In this article, we propose a QR code-based location tracking system that aims to provide a simple and effective solution for the instant tracking of people or objects. The system uses QR (Quick Response) codes, a two-character barcode technology that can store a lot of information, including address information. Each QR code is unique and assigned to a specific location, such as a room, building or headquarters. Users interact with the system by scanning the QR code using a smartphone equipped with a QR code reader. After scanning, the application retrieves the embedded data and sends it to a central server for processing. The central server is equipped with a data management function to store and manage location data obtained by scanning QR codes. It manages location updates, combines them with existing information, and stores updated information about the current location of each tracking location. **Keywords:** Generative AI, LLM, Chatbot, AI-learning Management systems, academic counseling

IOT BASED FISH FEEDING AND WATER MONITORING SYSTEM

**Sujata Dake¹, Sumit Parate², Lalita Rakshak³, Yadneshwar Patle⁴, Sunil
Vishwakarma⁵**

¹ Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} BTech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Feeding fish properly is very important for the health and growth of the fish in your aquarium. However, due to their busy lifestyles, many fish owners have problems with regular feeding. With the emergence of IoT technology, many smart solutions have been developed for aquariums. However, there is still no research or innovation on how fish should be fed in smart aquariums. The IoT-based automatic fish feeding solution is designed to feed fish in aquariums or fish farms. The system uses microcontrollers and sensors to track fish feeding times and food items. The solution is connected to the internet and can be accessed remotely via a web application. Users can adjust feeding parameters according to the fish's needs. The IoT-based fish feed system is designed to provide fish owners with a simple and practical way to feed and monitor their fish from anywhere. **Keywords:** Aquaculture, microcontroller, fish farm, internet of things, sensor, temperature

GESTURE RECOGNITION FOR SIGN LANGUAGE WITH AI

Mr. Aniket Deshbhratar¹, Mr. Himanshu Harode², Mr. Chirag Hamare³

Prof. Supriya Jawale⁴, Prof. Kaveri Deosarkar⁵

^{1,2,3,4,5}Department Of Artificial Intelligence & Data Science,

Priyadarshini College Of Engineering, Nagpur 440019

ABSTRACT

People with speech or hearing impairments frequently utilize sign language, which is a system of visual motions and signs. It's crucial to comprehend the gestures these people use to communicate in order to integrate them in the community of verbal communicators. Those who don't utilize the gesture in everyday life frequently don't grasp what it means. In this study, we suggest a method for identifying the alphabet and gestures that each hand movement provides. The goal of this project is to create a real-time sign language identification system for deaf and dumb people utilizing Python programming, OpenCV, and deep learning techniques like YOLOv5 and Convolutional Neural Networks (CNN). To recognize and track hand gestures and other important items in the video stream, the proposed system uses a webcam to gather real-time video input. The video input is enhanced and pre-processed using OpenCV, which is also utilized to present the detection model's results in real-time. This video data is then processed using YOLOv5 and CNN.

Keywords: Convolutional Neural Networks, YOLOv5, OpenCV, Python, Machine Learning

HEART DISEASE PREDICTION USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Prof. Tara Shende¹, Prof. Rahul Bhandekar², Kiran Pustode³

³Student of M-Tech Artificial Intelligence & Data Science Engineering Department in WCEM, Nagpur

^{1,2}Professor of M-Tech Artificial Intelligence & Data Science Engineering Department
in WCEM, Nagpur

ABSTRACT

Heart disease is one of the most significant causes of global mortality since its intricacy and the rate of misdiagnosis have brought a great challenge to medical workers. As machine learning has shown robust efficacy in decision-making and predictions, it is essential to construct a machine learning model to assist with heart disease diagnosis. The cost of healthcare is outpacing both corporate and governmental budgets as a result of silent illnesses like cardiovascular disorders. Early diagnosis and treatment of these illnesses are therefore desperately needed. One of the newest and most popular technologies is machine learning, which is being used to anticipate diseases in a variety of industries worldwide, including healthcare. The purpose of this study is to use logistic regression to forecast the overall risks and find the most important heart disease predictors. In order to find the predictors, the binary logistic model, one of the classification techniques in machine learning, is employed in this work.

Key Words: Machine learning, Logistic regression, classification algorithms

FACE IDENTIFICATION AND BLURRING THE FACE USING DEEP LEARNING BASED APPROACHES IN VIDEOS

¹**Student, Ms. Chandan D. Sawarkar**, Artificial Intelligence & Data Science Engineering,
Wainganga College of Engineering and Management, Nagpur
Email Id: sawarkar.chandan@gmail.com

²**Assistant Professor Dr. Gurudev B. Sawarkar**, Computer Science & Engineering, Wainganga
College of Engineering and Management, Nagpur
Email Id: sawarkar92@gmail.com

³**Assistant Professor Ms. Rupali Dasarkar**, Artificial Intelligence & Data Science Engineering,
Wainganga College of Engineering and Management, Nagpur
Email Id: rupalidasarwar20@gmail.com

⁴**Assistant Professor Ms. Minakshi Dobale**, Artificial Intelligence & Data Science Engineering,
Wainganga College of Engineering and Management, Nagpur
Email Id: minakshidobale@gmail.com

ABSTRACT

In an era where privacy concerns and ethical considerations dominate technological advancements, our study presents a pioneering solution at the intersection of facial recognition and privacy preservation in video streams. By amalgamating sophisticated facial recognition algorithms from the face recognition library [1] with Gaussian blur techniques, our system redefines the landscape of real-time face recognition. Key to our approach is the judicious application of blur effects, selectively safeguarding the identities of individuals while maintaining the integrity of facial recognition processes. Through meticulous encoding and storage of known faces [2], our system seamlessly identifies familiar individuals within video data. Leveraging facial recognition capabilities [3], it swiftly discerns between known and unknown faces, ensuring that only unidentified individuals are subject to the privacy-enhancing blur treatment. This nuanced approach not only upholds the accuracy and reliability of face recognition but also prioritizes the protection of individual privacy rights. Our experimental validation showcases the prowess of the proposed method [4], heralding a new era in privacy-conscious face recognition technologies. With applications ranging from surveillance systems to personalized user experiences, our system serves as a beacon of ethical innovation, bridging the gap between technological advancement and societal values.

Keywords: Facial recognition, Privacy preservation, Gaussian blur, Real-time video processing, Ethical innovation, Privacy-enhancing technologies.

**PLANT DISEASE DETECTION USING DEEP LEARNING-BASED
CONVOLUTIONAL NEURAL NETWORKS WITH TRANSFER LEARNING
ALGORITHMS.**

**Ms. Ashmita Ghongade¹, Dr. Gurudev Sawarkar², Prof. Rupali Dasarwar³, Prof.
Minakshi Dobale⁴**

¹Student(MTech). Department Of Artificial Intelligence & Data Science Engineering
Wainganga college Of Engineering & Management, Nagpur
E-mail Id – ashmita2108@gmail.com

^{2,3,4}Professor. Department of Artificial Intelligence & Data Science Engineering
Wainganga College of Engineering & Management, Nagpur
E-mail Id - sawarkar92@gmail.com

ABSTRACT

Plant diseases can have significant impacts on agricultural production, leading to significant losses in yield and quality. Early detection and diagnosis of crop diseases is essential for effective control and management. In this study, We present a novel approach for the automated detection of plant diseases using deep learning-based Convolutional Neural Networks (CNNs) coupled with Transfer Learning algorithms. Our study focuses on developing a robust and adaptable system capable of accurately identifying plant diseases from image data. By leveraging a comprehensive dataset comprising diverse plant species and disease types, our goal is to train the model to achieve high accuracy and real-time detection capabilities. The potential significance of this research lies in its potential to significantly improve agricultural practices by offering farmers a valuable tool for prompt disease diagnosis and management, ultimately leading to increased crop yields and sustainable farming practices

Keywords: CNN, Deep Learning, Plant Diseases detection, Disease Diagnosis, Agriculture.

SMART WEARABLE DEVICE FOR WOMEN SAFETY

Monika Ingole¹, Pranay Chide², Ajit Ukey³, Araj Chamlate⁴, Aarti Ukey⁵

¹Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}BTech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

This study introduces a comprehensive smart wearable device designed specifically for enhancing women's safety. The device incorporates a temperature sensor for measuring ambient temperature, an accelerometer for tracking user positions and movements, GPS for accurate location tracking with longitude and latitude coordinates, GSM technology for making emergency calls and sending messages, and a dedicated push button for immediate activation of a built-in buzzer alert system. The integration of these features aims to provide women with a versatile and reliable safety solution, enabling real-time monitoring, rapid response in emergencies, and an added layer of security in various situations.

SMART STICK FOR THE BLIND PERSON

Rupali Dasarwar¹, Sakshi Dhoble², Akash Chachere³, Junaid Pathan⁴, Raj Bhosle⁵

¹ Assi. Professor, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5} B.Tech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

There are millions of blind people in this world who always need some help. These visually impaired people find it challenging to travel outside their homes independently. The Smart Blind Stick that we will design helps the blind society by providing a better and more convenient means of life by moving around independently. The stick consists of web camera, one camera, and an earphone/speaker. Using a of web camp, this system can detect obstacles around the users up to 400 cm in their direction, i.e., forward, left, and right. For further processing of data these ultrasonic sensors are attached to the raspberry pi. The camera is used for object recognition, and the image obtained through the camera will be captioned and presented to the user in the form of audio.

DEVELOPMENT OF CEILING FAN CLEANING MACHINE

**¹ Prajwal Wanjari ² Mangesh Thakre ³ Rahul Asutkar ⁴ Sanju Nagpure
⁵ Dikeshkumar Bagchawar ⁶ Pro. Swapnil M. Choudhary ⁷ Dr. Somdatta Karanjekar**

ABSTRACT

A ceiling fan, one of the most common appliances needs to be cleaned and this project is all about automating the cleaning system in a simpler and economical manner. This idea is something new and we are trying this to be exclusively useful in industries, schools, colleges, hospitals, etc where the number of ceiling fan count is quite large. Moreover, as the project proves to be a cost effective one, it can be used in households as well. There is no current system that is being tried for the automation for cleaning ceiling fan. This project presents finite elements-based durability assessment for a new ceiling fan blade cleaner. The objectives of this project are to create a portable, versatile and ergonomic ceiling fan blade cleaner and to create equipment that easy to operate. Sponge and plastic material were studied in this thesis which commonly used in industry. The acquired result present both of ceiling fan blades surface is cleaned when used sponge. The dust and cobwebs from blade is free to fall into the dust-box. The durability assessment results are significant to improve the component design at the early developing stage. The results can also significantly reduce the cost and time to market, and improve product reliability and customer confidence.

Keywords: ceiling fan, blades cleaner, fabrication, brush, dc motor etc.

AIR POWERED CAR

Rakesh Patle¹, Sunil Katre², Saurabh Padole³, Piyush Tandulkar⁴

Wainganga College Of Engineering and Management, Dongargaon, Nagpur.
rakeshpatle779@gmail.com

ABSTRACT

This project investigates the performance and efficiency of air-powered cars utilizing different drive mechanisms. Initially, a belt drive system was employed to propel the vehicle. Through systematic modifications and improvements, the belt drive system was subsequently replaced with a chain drive mechanism. The transition from belt drive to chain drive was aimed at enhancing the car's overall performance, including factors such as speed, torque, and energy efficiency. By comparing the performance metrics between the two drive systems, insights into the effectiveness of each mechanism were gained. The experimentation and analysis conducted provide valuable insights for the optimization of air-powered vehicles, contributing to the advancement of sustainable transportation technologies.

Keywords-Air, Compressed, Vehicle, Pollution, Utility, etc.

AUTOMATED IRRIGATION SYSTEM IN FARMING BY SOLAR ENERGY

**Khilendra Sharanangat¹, Prof. Swapnil Choudhary², Dr. Somadatta Karanjekar³,
Dr. Bharat Chede⁴, Prof. Suhas Wankhede⁵**

Master of Technology in CAD/CAM
Mechanical Engineering Department, Wainganga College of Engineering and Management,
Dongargaon, Nagpur

ABSTRACT

This paper proposes a automated irrigation system in farming by solar energy. Smart irrigation system powered by solar energy offer several advantages for farmers. That sounds like a fantastic setup! Combining a solar-powered water pump with automatic water flow control through a moisture sensor is an excellent way to ensure efficient irrigation. The moisture sensor can detect when the soil needs watering, allowing the system to deliver just the right amount of water precisely where and when it's needed. This not only saves water but also optimizes crop growth by avoiding over or under watering. By harnessing solar energy, the system reduces reliance on grid power, saving electricity costs and reducing carbon footprint. Moreover the automatic water flow control helps minimize water wastage by delivering water directly to the plants root as needed, reducing losses due to evaporation or runoff.

Keywords: Smart irrigation, Solar Energy, Solar Panel, Pump, Battery, Moisture Sensor and Temperature Sensor.

**“DESIGN & DEVELOPMENT OF SMART FIRE SAFETY SYSTEM
FOR ELECTRIC VEHICLES USING IOT”**

**Sandip Patorkar, Prof. Swapnil Choudhar, Dr.
Somadatta Karanjekar, Dr. Bharat Chede, Prof. Suhas Wankhede**

Wainganga College Of Engineering & Management, Nagpur Near Gumgaon
Railway Station, Wardha Road Nagpur, 440012. wcem4145@gmail.com
Department Of Mechanical Engineering Computer Aided Design & Manufacturing (CAD/CAM)
Sandip Patorkar1999@gmail.com

ABSTRACT

The Project concept of automatic fire safety system for Electric vehicle is the Idea of inventive way of considering on less cost designing and convenient application for electric vehicle safety. Day by day the number of fire caught in electrical vehicle increases for neutralizing this problem, In this project our main aim is to reduce occurring accidents of electric vehicle for making smart fire safety system for electrical vehicle. In this system the fire extinguisher activates on sensing of flame/smoke from the fire areas inside a vehicle & automatically extinguishes the fire. An electric vehicle has many reasons that can lead to fire accidents. The main reason behind the Electric Vehicle fires is the battery (lithium-ion) used in them. The installation of the automatic fire extinguishing system using IOT technology can minimize the financial loss which could arise from a fire, as well as increasing the safety level for the vehicle and human being. And also once the accident is detected the information is communicated to emergency services or near authorities, who will reach you faster.

**USING COGNITIVE IOT IN VEHICLE SYSTEM FOR ON ACTUAL
TIME MONITORING OF CO₂ EMISSION WITH TEMPERATURE
AND ALCOHOL DETECTOR**

**Mukesh Radhesham Pardhi¹, Prof. Swapnil Choudhary², Dr. Somdatta Karanjekar³,
Dr. Bharat Chede⁴, Prof. Suhas Wankhede⁵**

Master of Technology in CAD/CAM
Department of Mechanical Engineering
Wainganga College of Engineering and Management
Rastrasant Tukdoji Maharaj Nagpur University

ABSTRACT

Now a day One of the greatest environmental problems facing the world today is global warming caused by emission of greenhouse gases. Carbon dioxide, which is an important constituent of environment is causing a warming effect on the earth's surface. To save our environment, monitoring and controlling these changes is a big challenge. In terms of a long-range control of CO₂ emission at their source is a more desirable and effective method through preventive and control technologies. The main objective of this paper is to implement IoT to measure the CO₂ emission from public transports, industries and forest fires using Raspberry pi which is sensitive to CO₂. The amount of Carbon dioxide emitted is sensed continuously in a city and also finding the area which is polluted the most. Also implement a smart system for early detection of forest fires or wild fires. Wild fires, are uncontrolled fires occurring in wild areas and causes significant damage to natural and human resources and the wild fire emits more CO₂ gas than assumed in state climate target. These are then integrated to the IOT which is more securable and many services of can be used along with it. This would enable a Simple Notification Service (SNS) to the mobile phone if the particular area is causing higher level of CO₂.

The model will also be used to detect the Temperature of the heated part of the Vehicles like Engine with the help of Temperature Detector. Alcohol Detector is also used to detect the quantity of Alcohol consumed by the Driver of the Vehicle.

Keywords: IoT (Internet of Things), SNS (Simple Notification Service), GVG (Green Vehicle Guide), GPS (Global Positioning System), MAQUMON (Mobile Air Quality Monitoring Network).

MONITORING OF POLLUTANTS IN THE AIR OF PUNE CITY

Nidhi Mishra¹, Nidhi Sharma²

1. Electrical Engineering Department, S. P. P. U/JSPM's BSIOTR, Pune, Maharashtra, India
nidhimishra7438@gmail.com

2. Department of Chemistry, S.P.P.U/JSPM's JSCOE, Pune, Maharashtra, India
drnidhi0927@gmail.com

ABSTRACT

Because of Pune's low air quality, studies on various kinds of air components are being conducted in order to assess the air's overall quality. The study includes important pollutants such as PM_{2.5}, PM₁₀ (RSPM), NO₂, O₃, SO₂, and CO, as well as their causes and impacts. PM_{2.5} levels that are beyond WHO guidelines are a serious issue; NO₂ and O₃ levels should be taken seriously. The research emphasizes the need for more stringent emission limits, the promotion of public transportation and electric cars, and the oversight of industrial and building activities in order to offset such pollutants and attain better air in Pune City. This study aims to assess Pune City's air quality and provide insights by investigating a variety of air quality factors in detail. Three years (2022, 2023, and 2024) of a complete tracking strategy is looked at, considered various air quality components such as RSPM (PM₁₀), PM_{2.5}, NO₂, O₃, and so on. Several graphs covering the years are examined in order to track Pune City's rising air quality index.

Keywords: AQI, PM-10, PM_{2.5}, NO₂, O₃, air pollution sources, RSPM.

DC MOTOR SPEED CONTROLLER USING IC 555

Chaitanya Kukwas, Dipanshu Chauhan, Lina Behare, Vinod Tiple, Rohit Kumbhare

Wainganga College Of Engineering and Management, Dongargaon, Nagpur.

chaiku1113@gmail.com dipanshu2611@gmail.com

linabehare0199@gmail.com Vinodtiple1993@gmail.com

rohitkumbhare468@gmail.com

ABSTRACT – There are several motor control circuits and this is one of the commonly used motor control circuit and it was done by employing a simple NE555 IC. The timer IC here was used to generate PWM waves so that the speed of the motor can be adjusted accordingly. PWM is nothing but Pulse Width modulation, a modulation technique in which the width of the output pulse was varied with respect to the amplitude of the input signal.

Keywords-555 timer IC, diodes, capacitors, DC Motor, battery.

HYBRID GRID CONNECTED SOLAR POWERED INVERTER

Nehal Lanjewar¹, Ashish Bhandarkar², Bhushan wakade³, Jiwan kashti⁴, Akash Rathod⁵

Wainganga College Of Engineering and Management, Dongargaon, Nagpur.
nehallanjewar@gmail.com mashishbhandarkar2017@gmail.com
wakadebhushan2002@gmail.com jiwankashti@gmail.com
akrathod192001@gmail.com

ABSTRACT

A simple, reasonably priced paper that converts available DC electricity into an AC grid with battery backup via solar panels. Proposes a simple push-pull inverter architecture using a step-up center tap transformer and a parallel configuration of MOSFETs with synchronized series RC phase angle control. Solar DC energy is converted into quasi square AC power using a single phase quasi square wave three level inverter and a step-up center-tap transformer. The output voltage and phase angle of the inverter connected to the AC bus are kept under control through duty ratio control and phase angle control, respectively. In order to verify that power was supplied to a 230 V AC source, a prototype inverter model was tested.

Keywords- Renewable energy, AC voltage, DC voltage, PV panel, Grid Connect, Inverter.

NEGATIVE PHASE SEQUENCE AND THE OVER VOLTAGE PROTECTION RELAY

**SNEHAL MATALE¹, VIDYA PACHARE², ADITYA SAYAM³
VIKAS RATHOD⁴, SWAPNIL BUDHE⁵**

Wainganga college of engineering and management dongergoan, wardha road Nagpur 411108
1) snehalmatale362@gmail.com 2) vidhyapachare547@gmail.com
3) adityasayyam1245@gmail.com 4) vickyathodpsd@gmail.com 5) sbudhe420@gmail.com

ABSTRACT

According to the symmetrical component theory due to the positive phase sequence supply (RYB) to the induction motor caused the winding of the induction motor is energized and produced flux. The magnetic field created by this positive phase sequence component and this field rotates in the clockwise direction causing the motor produce necessary output torque. But the phase sequence (RBY or BRY) will change the magnetic field created by this and this field rotate in opposite direction causing a decrease in motor output torque cause the chance is to burn the motor. To protect from this condition we are created the phase sequence relay. When this type of condition is arrived the relay detects or sense and prevent motor to start. The created relay protect from the over voltage/low voltage. When the missing of one phase the relay doesn't allowed running the motor. Keywords — Phase Sequence Indicator, Phase Detection, 3-phase Sequence, Time based

WIRELESS MOBILE CHARGER

YashBadwaik, chiragbisen, kartikrahangdale, yugendhardolas, Shrutilengure

Wainganga College Of Engineering and Management, Dongargaon, Nagpur.

yashbadwaik50@gmail.com chiragbisen@gmail.com

krahangdale37@gmail.com yugendhardolas1314@gmail.com

ABSTRACT

Portable electronic devices are very popular nowadays. Almost all portable devices are battery powered, meaning that eventually, they all must be recharged—using the wired chargers currently being used. As the usage of these portable electronic devices is increasing, the demands for longer battery life are also increasing. These batteries need to be recharged or replaced periodically. It is a hassle to charge or change the battery after a while, especially when there is no power outlet around. Now instead of plugging in a cell phone, Personal Digital Assistant (PDA), digital camera, voice recorder, mp3 player or laptop to recharge it, it could receive its power wirelessly. Keywords: Wireless Mobile Chargers – Wireless Communication – Cellular Phones – Transmitters – Receivers – Wireless Power Transmission (WPT).

IOT BASED BANANA RIPENING CHAMBER MONITORING & CONTROLLING UNIT

ABSTRACT

Bananas are highly perishable fruits with a short shelf-life, requiring careful control of environmental conditions during ripening to maintain quality and reduce waste. Traditional ripening methods, such as calcium carbide, have been phased out due to health and safety concerns, leading to the adoption of ethylene gas as a safe and effective ripening agent. In this study, we propose the development of an IoT-based banana ripening chamber equipped with ethylene control for efficient and precise ripening. The ripening chamber comprises temperature and humidity control systems, ethylene injection mechanisms, and an IoT-enabled monitoring and control unit. Temperature and humidity sensors provide real-time data on environmental conditions, allowing for precise control of the ripening process. Ethylene gas is released at calculated concentrations to initiate and regulate ripening, ensuring consistent results. The IoT-enabled system enables remote monitoring and control of the ripening chamber, providing operators with real-time insights into environmental conditions and ripening progress. Alerts and notifications notify operators of any deviations from optimal conditions, allowing for prompt intervention to maintain quality. Furthermore, the system includes safety features to prevent ethylene exposure and maintain worker safety.

Keyword: Banana ripening, IoT (Internet of Things), Ethylene control, Environmental monitoring, Temperature and humidity regulation, Remote monitoring, Quality control, Safety features, Perishable fruits, Shelf-life optimization

SMART AUTONOMOUS NURSE ASSISTANT ROBOT (SANAR)

ABSTRACT

In the evolving landscape of healthcare, the integration of innovative technologies has become paramount to enhance efficiency, accessibility, and usability across all sectors, particularly in the medical industry. This project proposes the development of a Smart Autonomous Nurse Assistant Robot (SANAR) aimed at revolutionizing medical care delivery, especially during emergencies and pandemics like Covid-19. SANAR utilizes cutting-edge technology to streamline disease diagnosis, monitor patient health in real-time, and facilitate drug delivery. The core of SANAR's functionality lies in its utilization of a health tracker system-based IoT platform, which continuously analyzes vital patient data, including oxygen levels, pulse rate, and temperature. Through simple text commands and a timer-based medicine scheduler, SANAR ensures timely medication administration, leveraging a cloud server for seamless data access and management with utmost security.

Keyword: Smart Autonomous Nurse Assistant Robot (SANAR) Healthcare Innovation, Medical Robotics, Internet of Things (IoT), Real-time Health Monitoring, Disease Diagnosis

DIGITAL TWIN APPLICATIONS IN VEHICULAR SYSTEM

¹Pratik Ashok Khobragade, ²Prof. Malvika U. Saraf

Department of Electronic, Wainganga College of Engineering and Management, Nagpur, India.
Department of Electronic, Wainganga College of Engineering and Management, Nagpur, India.

ABSTRACT

Digital twins are a useful tool for simulating the behavior of physical systems, and they have a lot to offer in-car networks. This is mostly due to the fact that in-car networks transmit vast volumes of data from multiple sources, including wired and sometimes even wireless sensors, which are combined by actuators in charge of crucial safety functions that necessitate meticulous testing. In this reference, we construct a lab-based in-car network that, with respect to cable length, number of stubs, and devices connected to it, emulates an actual vehicle network. As a network layer, cars still use the RS485 communication bus, which is still widely used. Utilizing the ATMEGA2560 microprocessor for a number of subsystems, such as the fuel level, speed detection, lean angle when driving, and brake activation system. In my project I used digital twin's concept in the bick. This bick can be used to replicate processes in order to collect data to predict how the bick user will perform. In its simplest form, a digital twin is computer software that simulates the performance of a process or product using real-world data. These programs can integrate the internet of things (Industry 4.0), artificial intelligence and software analytics to enhance the output.

REVIEW ON DEVELOPMENT OF SMART FIRE SAFETY SYSTEM FOR VEHICLES USING IOT

Manjutai B. Ambade¹, Prof. Arvind M. Padole², Prof. Malvika Saraf³

¹Student, Department of Electronics and Telecommunication Engineering, Wainganga College of Engineering & Management, Nagpur.

²Project Guide, Department of Electronics and Telecommunication Engineering, Wainganga College of Engineering & Management, Nagpur.

ABSTRACT

Today, fire accidents often occur in homes and industrial environments, where climate change and human negligence can be predicted. The proposed prototype is designed to detect such fire accidents and remotely extinguish the fire from the user, thus reducing the risk to firefighters. The main idea of this concept is to propose a model that focuses on the cost-effective design and implementation of an automatic fire protection system for electric vehicles. In this system, the fire extinguisher is activated when it detects flame/smoke in the vehicle fire area and extinguishes the fire automatically. There are many reasons for an electric vehicle that can cause fire accidents. The main cause of electric car fires is the battery used in them. There have been many cases of cars catching fire for the reasons mentioned above and ending with the entire vehicle reduced to ashes. The installation of an automatic extinguishing system allows to minimize the financial losses that can arise from a fire and to increase the safety level of the vehicle, passengers, and other road users. **Keywords:** Fire Situation, Controller, Emergency Alert, Accident Prevention, IOT Technology etc.

IOT BASED VIRTUAL DOCTOR ROBOT

**Malvika Saraf¹, Saurabh Mungale², Shweta Shewade³, Pooja Thorath⁴, Pratik Ingole⁵,
Surendra Kathane⁶**

¹Assistant. Professor, Department of Electronic & Telecommunication Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5,6}BTech Student, Department of Electronic & Telecommunication Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Doctors are usually needed to work at every hospital and emergency center every now and then. But it is not feasible for every doctor to be available at every place at desired time. Also in pandemic situation patient can't reach at hospital. The problem with video calling is that video calls need to be done from a PC or laptop on a desk. This limits the doctor capacity to view patient or around operation theatre at will or even move through hospital rooms as needed. To help solve this issue we here develop a "IOT Based Virtual Doctor Robot" that allows a doctor to virtually move around at a remote location at will and even talk to people at remote location as desired. Also this robot check the situation of body by using sensor and provided live data to the doctor. Doctor will recognize all parameters of patients and doctor will give proper suggestion like medicine which you want to follow and other important suggestions. This robot will play an important role to save life of multiple people. This robot provides a whole lot of advantages for doctors. **Keywords:** - Internet of Things, Virtually Monitoring

ARDUINO BASED VOICE ASSISTANT ROBOT

Wasiq raza¹, Anil kumar Dewangan², Devayani Sayam³, Hemant Nagwanshi⁴, sayli Zilpe⁵, Lakesh Pogade⁶

¹Lecturer, Department of Electronics and Telecommunication, Shri Shankarprasad Agnihotri College of Engineering, Wardha, Maharashtra, India

^{2,3,4,5,6}Student, Department of Electronics and Telecommunication, Shri Shankarprasad Agnihotri College of Engineering, Wardha, Maharashtra, India

ABSTRACT

In this project of Voice Assistant robot is Model that will be controlled by voice commands and response according to the particular technology commands. The vehicle is controlled by simple voice commands such as left ,right, forward ,reverse and stop . This commands given to the bluetooth module With the help of Android app that will be use to control the robot. This Bluetooth model will be connected to the Android app through the Bluetooth connection. The Bluetooth model and control unit are combined to store and test the voice commands. The instructions will Gates detected for the robot and the command messages sent By the Android app to the arduino nano the micro controller of the robot. The command is analysed and followed by the microcontroller the controlling remote is a smart Android device with Bluetooth application. We picked this as our project as robotics has become a major part in our day to day life style and also have a white scope in the engineering in future. It plays a very precise role in the development of new technology.

Keywords – Arduino NANO , Bluetooth Model , Robotic Vehicle , Wi-Fi , Android

ENHANCING METEOROLOGICAL STUDIES: CLOUD AMOUNT MEASUREMENTS FOR BETTER WEATHER PREDICTIONS

¹ Uday Shende, ² Malvika Saraf

¹ Research scholar, Department of Electronics and Telecommunication Engineering, Wainganga college of engineering and Management, Nagpur.

² Assistance Professor, Department of Electronics and Telecommunication Engineering, Wainganga college of engineering and Management, Nagpur

ABSTRACT

Clouds play a crucial role in weather forecasting and climate modeling, making accurate cloud amount measurements essential for meteorological departments worldwide. This report presents a comprehensive analysis of a cloud amount measurement project developed for implementation in a meteorological application. The project aims to leverage advanced technologies and methodologies, including machine learning approaches, to enhance the accuracy and efficiency of cloud amount measurements. By integrating sophisticated algorithms, the study refines cloud detection and quantification processes, providing more reliable data for meteorological analyses.

Keyword —Weather prediction, Okta, train, stepper motor, collage, cloud images

**A REVIEW ON DEVELOPMENT OF ECO-FRIENDLY BRICKS USING
FOUNDRY SAND, RIVER SAND, FLY ASH AND CEMENT**

¹Tejas Raut, ²Lalit Shende, ³Yamini Agashe, ⁴Dhanashree
Dhole, ⁵Payal Shiwarkar, ⁶Prof. Gaurav Hingwe

¹²³⁴⁵UG Student, Department of Civil Engineering, Wainganga College of Engineering, Nagpur,
Maharashtra, India

⁶Assistant Professor, Department of Civil Engineering, Wainganga College of Engineering &
Management, Nagpur, India.

ABSTRACT

This research paper presents an innovative approach to sustainable construction, focusing on the development of eco-friendly bricks using industrial waste products, specifically fly ash and foundry sand, along with traditional materials like sand and cement. The study explores the potential of these waste materials as substitutes for natural resources, aiming to reduce the environmental impact of brick production. The methodology involved a systematic variation of material proportions using a Design of Experiments (DoE) approach. Foundry sand was used as a replacement for natural sand in proportions ranging from 20% to 40%, while fly ash was used as a replacement for cement in proportions up to 10% to 30%. The water-binder ratio was also varied to evaluate its impact on workability and strength. The bricks were then cast and cured, and their properties such as compressive strength, water absorption, and durability were evaluated. Keywords— Eco-friendly bricks, Foundry sand, Sustainable construction, Fly ash, Cement, Waste utilization, Environmental impact, Compressive strength

**COMPARATIVE ANALYSIS OF CONVENTIONAL CONCRETE WITH
FIBER-REINFORCED CONCRETE**

¹Shital Shahare, ²Praful Gavhare, ³Pranay Gaykwad, ⁴Dikesh Kumar Janjewar, ⁵Bhagyashri
Kawale, Prof. Nidhi Jejurikar⁶

¹²³⁴⁵UG Student, Department of Civil Engineering, Wainganga College of Engineering, Nagpur,
Maharashtra, India

⁶Assistant Professor, Department of Civil Engineering, Wainganga College of Engineering &
Management, Nagpur, India.

ABSTRACT

This review paper aims to provide a comprehensive comparison between conventional concrete and plastic bottle fibre concrete (PBFC) in terms of their mechanical properties, durability, and sustainability. Conventional concrete has been the dominant construction material for decades, but the emergence of PBFC as a sustainable alternative has sparked significant interest in recent years. This paper will delve into the composition and properties of both materials, highlighting the use of plastic bottle fibres as reinforcement in concrete. The review will cover the impact of plastic bottle fibres on the compressive, tensile, and flexural strength of concrete, as well as their influence on cracking, toughness, and ductility. Additionally, it will explore the potential benefits of using PBFC, such as reduced environmental impact through recycling of plastic waste and improved sustainability. The paper will also address the challenges associated with the use of plastic bottle fibres in concrete, including issues related to fibre dispersion, compatibility with cementitious materials, and long-term durability.

A REVIEW PAPER ON LIGHT GENERATING CONCRETE

**Om Baywar¹, Divya Pardhi², Shivam Mahajan³, Gaurav Kale⁴,
Tukaram Khupse⁵, Prof. Kajal Pachdhare⁶**

^{1 2 3 4 5} UG Students, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

⁶ Assistant Professor, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

ABSTRACT

The light generating concrete composition includes light emitting pigments. The light emitting pigments consist of titanium dioxide, strontium aluminate, polyester resin, cement, sand, aggregate and water. The need for energy in developing nations is endless and is rising daily. In rural areas, almost 25% of the dwellings are still without electricity. During the day, a concrete that is inactive and glows at night. The fundamental idea of phosphorescence is used in this concrete, wherein the phosphorescent substance absorbs solar radiation throughout the day and emits light energy at night. Because of its glowing appearance, it is economic, environmentally friendly, and visually appealing.

Keywords: Glow in the Dark Concrete, Titanium Dioxide, Strontium Aluminate, Polyester Resins, phosphorescence

**ANALYSIS OF DIFFERENT TYPE OF TRUSS CONSIDERING
RAILWAY BRIDGE LOADING**

Pragati Vilas Gaikwad¹, Er, Mithilesh Kapse², Prof. Pallavi Deotale³.

¹ M.tech Student, Computer Aided Structural Engineering, Wainganga College of Engineering and Management Nagpur

² Engineer Consultant, Level Up Structures, Nagpur.

³ Assistant Professor, Civil Engineering Department, Wainganga College of Engineering and Management Nagpur.

ABSTRACT

Beam bridges are the simplest and oldest type of bridge in use today, and are a popular type. A truss bridge is a bridge whose load-bearing superstructure is composed of a truss. Various types of different design of truss structure are constructed in bridges depending upon the type of bridge and volume of vehicles passing through it. This research work comprises of design and analysis of different types of bridge structure for railway systems. The different trusses are made from the steel material and a comparative study is done based on the results. For the study four type of truss design is taken in to consideration such as rectangular truss, X-type, V-type, and K-type truss. The results are compared based on support reaction, displacement, shear force and torsion. Both maximum and minimum values for all the respective cases have been depicted in the work including cost analysis.

ULTRA HIGH PERFORMANCE CONCRETE WITH RICE HUSK ASH AND FLY ASH

Sharad A. Galmale¹, Nayan U. Pati², Urvashi R. Jambhulkar³, Dhanshri K. Zade⁴, Yukta P. Chikankar⁵, Prof. Subham C. Ingole⁶

^{1 2 3 4 5} UG Students, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

⁶ Assistant Professor, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

ABSTRACT

This paper presents an investigation into the use of Rice Husk Ash (RHA) and Fly Ash (FA) as partial replacements for cement in Ultra High Performance Concrete (UHPC). The study aims to evaluate the impact of RHA and FA on the mechanical properties of UHPC, including compressive strength, split tensile strength, and flexural strength. The experimental program includes tests on the physical and chemical properties of RHA, FA, and the control mix using Ordinary Portland Cement (OPC). Mix proportioning is performed to achieve a high workability concrete with a target strength of 32.1 MPa (M25 grade) for the control mix. Concrete mixes with varying percentages of RHA and FA replacements are then prepared and tested for their mechanical properties. The results show that the inclusion of RHA and FA improves the mechanical properties of UHPC, with certain replacement percentages exhibiting comparable or even superior performance to the control mix. This study contributes to the understanding of using sustainable materials in UHPC production and provides insights for future research and practical applications in the construction industry.

Keywords: Ultra High Performance Concrete, UHPC, Rice Husk Ash, Fly Ash, Cement Replacement, Mechanical Properties, Durability, Sustainability, Environmental Benefits, Economic Viability, Sustainable Construction.

ANALYSIS ON PROPERTIES OF M-30 AND M-90 GRADE OF CONCRETE AND ITS EFFECTS

Sanjay Mangal Ghate¹

¹ M.tech Student, Computer Aided Structural Engineering, Wainganga College of Engineering and Management Nagpur

ABSTRACT

High strength concrete (HSC) has been widely used in civil engineering in recent years. This is because most of the rheological, mechanical and durability properties of these materials are better than those of conventional concrete. High strength is made possible by reducing porosity, inhomogeneity and microcracks in concrete and the transition zone. This is achieved by using superplasticizers and supplementary cementing materials such as silica fume/ micro silica. Fortunately, micro silica is an industrial by-product and helps in reducing the amount of cement required to make concrete less costly, more environmentally friendly and less energy intensive.

Key Words: M30, M90, Compression test, Split tensile test, Flexural strength test.

**INNOVATING CONSTRUCTION: COTTON THREAD AS AN
ADMIXTURE IN CEMENT BRICKS**

**Chandni Kapse¹, Gulshan Borade², Dishant Dighore³, Kunal Patle⁴,
Sachin Bhang⁵, Pallavi Deotale⁶**

^{1,2,3,4,5}B. Tech Student, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

⁶Head of Department, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

ABSTRACT

This study explores the potential of integrating cotton thread as an admixture in cement bricks to enhance their structural properties. By incorporating cotton thread into the brick composition, researchers aim to improve tensile strength, flexibility, and thermal insulation while reducing material costs and environmental impact. Through laboratory experimentation and analysis, this study investigates the optimal ratios of cotton thread to cement mixture to achieve desired outcomes. The findings shed light on the feasibility and efficacy of this innovative approach in construction, offering insights into sustainable building practices. Integrating cotton thread into cement bricks presents a promising avenue for enhancing structural integrity and sustainability in the construction industry. This research contributes to the ongoing efforts to develop eco-friendly construction materials and techniques, addressing the challenges of resource depletion and climate change mitigation.

Keywords: Construction innovation, cement bricks, admixture, cotton thread, structural properties, tensile strength, flexibility, thermal insulation, material costs, environmental impact, sustainable building, laboratory experimentation, optimal ratios, eco-friendly materials, climate change mitigation.

**AN EXPERIMENT STUDY ON CONCRETE WITH GRADE OF M25
BY USING E-WASTE.**

¹Ashwin M. Raut, ²Jatin N. Roshanghede, ³Nabil M. Hashmi, ⁴Dr. Tejash Patil

^{1,2,3}Priyadarshini Bhagwati College of engineering Nagpur, Harpur Nagar, Umred Rod (Nearbadatajbagh).

⁴Associate Professor, Priyadarshini Bhagwati College of engineering Nagpur, Harpur Nagar, Umred Rod (Nearbadatajbagh).

ABSTRACT

Waste materials from other industries are being utilized in concrete productions such as fly ash, silica fume etc. The waste materials from electronics and electrical industries are divided in two categories hazardous and inert waste materials. The inert waste is also known as E-waste describes obsolete, discarded and malfunctioned electrical or electronics devices. It is very difficult to dispose-off the E-waste materials. The current study aims to investigate the impact of incorporating e-waste as a substitute for coarse aggregate in concrete mixtures. The study involves conducting mix designs for M20 grade concrete, both with and without e-waste. The coarse aggregates are partially replaced with e-waste material at varying

percentages of 10% and 20%.

**ENHANCING ULTRA HIGH-PERFORMANCE CONCRETE BY
INTEGRATING RICE HUSK ASH AND FLY ASH**

Nitesh B. Thikare¹, Ketan. S. Hedau², Pranay. V. Wasnik³, Harshal. P. Padole⁴, Parag. B. Zode⁵

¹Assistant Professor, Priyadarshini Bhagwati College of Engineering, Nagpur, India.

^{2,3,4,5}Priyadarshini Bhagwati College of Engineering, Nagpur, India

nthikare7391@gmail.com, hedauketan3009@gmail.com, pranaywasnik448@gmail.com,
harshalpadole092001@gmail.com, paragzode1207@gmail.com.

ABSTRACT

Ultra-high-performance concrete, or UHPC for short, is renowned for having exceptional strength and durability that exceeds that of conventional concrete combinations. Buildings, bridges, and other infrastructure projects all depend on concrete, which is why it is considered the foundation of a country's development. In modern building practices; rice husk is used in concrete as a partial replacement for cement. Its pozzolanic reactivity makes this substitution possible, allowing it to partially replace cement in concrete constructions. Following the instructions outlined in the Indian Standard code; the concrete mix design for the M70 grade was completed. The compressive strength, flexural strength, and split tensile strength of the concrete cube specimens were then measured. The purpose of this study is to determine how to replace some of the Ordinary Portland cement in concrete with Fly Ash (FA) and Rice Husk Ash (RHA) that has been wastefully accumulated while maintaining the concrete's original qualities. With regard to the cement content, Fly Ash (FA) and Rice Husk Ash (RHA) were added to the Ultra High-Performance Concrete (UHPC) design mix at different percentage replacement levels: 10%, 20%, 30%, and 40% for Fly Ash, and 5% and 10% for RHA, respectively. Also included was a 0.5% dose of superplasticizer (SP).

Keywords: Fly ash, Rice Husk Ash, UHPC, CS, FS, STS.

**NAVIGATING THE GENERATION GAP IN THE WORKPLACE:
STRATEGIES FOR EFFECTIVE COMMUNICATION AND
COLLABORATION**

¹**Amaan Khan**

Wainganga College of Engineering and Management Dongargaon, Nagpur.

amaankhan.2741@gmail.com

ABSTRACT

This very important research paper explores, uh, the challenges posed by the generation gap in contemporary workplaces. It, uh, offers strategic insights into, like, fostering effective communication and collaboration among diverse age groups. As the workforce becomes, um, increasingly multigenerational, understanding the distinct communication preferences, values, and work styles, like, of different generations becomes, uh, absolutely imperative for, you know, organizational success. The study employs a, um, comprehensive review of existing literature, like, supplemented by empirical data gathered through, uh, surveys and interviews across, you know, a range of industries.

COSMETIC INDUSTRY & CSR – AN OVERVIEW

¹Prof. Dr. Ujawala Narkhede, ²Prof. Ankita Hatkar

ABSTRACT

Sustainable issues have been gaining space in scientific research and also in the routine of cosmetics companies. However, cosmetics companies face challenges in fully implementing sustainability, and the literature lacks empirical and holistic evidence on sustainability in this industry. This study identifies the drivers, barriers, and good sustainable practices existing in the cosmetics industry from the perspective of Corporate Social Responsibility (CSR). The researchers efforts to show that sustainable practices are focused on environmental aspects in the design and sourcing stages. Companies are aware of their responsible commitments and are mobilized regarding sustainable production. Secondary data has been used in this research. There are clear opportunities for improvement in cosmetic industry for CSR, and there are difficulties to be overcome.

**UNLEASHING THE POWER OF ARTIFICIAL INTELLIGENCE:
REVOLUTIONIZING ENTERPRISES DIGITAL MARKETING
STRATEGIES**

¹Shabnam S Khan

MBA 2nd Year Student at Wainganga Collage of Engineering & Management, Nagpur Maharashtra,
India

kshabnam964@gmail.com

ABSTRACT

In the digital age, enterprises are increasingly turning to artificial intelligence (AI) to enhance their marketing efforts and gain a competitive edge. Artificial intelligence (AI)-enabled digital marketing is revolutionizing the way organizations create content for campaigns, generate leads, reduce customer acquisition costs, manage customer experiences, market themselves to prospective employees, and convert their reachable consumer base via social media. This research paper provides an in-depth analysis of the role of AI in digital marketing campaigns for enterprises. It explores various AI technologies and techniques employed in digital marketing, such as machine learning, natural language processing, predictive analytics, and computer vision. The paper examines how AI enables enterprises to personalize marketing messages, optimize advertising campaigns, improve customer engagement, and drive sales. Furthermore, it discusses the challenges and opportunities associated with implementing AI in digital marketing and offers recommendations for enterprises looking to harness the full potential of AI in their marketing strategies.

Keywords: Artificial Intelligence, Digital Marketing, Enterprises

**MATHEMATICAL MODELLING OF SOME CHEMICAL
STRUCTURE GRAPH**

Prafulla Puri¹ and Vivek Korde²

^{1,2}Wainganga College of Engineering and Management, Nagpur-441108 2K. J. College of
Engineering and Management Research, Pune- 411048
prafullaspuri@rediffmail.com

ABSTRACT

Graph theory has numerous applications in various fields, including computer science, mathematics, engineering, and social sciences. It provides powerful tools for modelling and analysing complex systems and relationships. Mathematical modelling of chemical structure graphs provides a powerful framework for understanding and predicting the behaviour of molecules, with applications ranging from drug discovery to materials science. In this manuscript studied about mathematical modelling of ethanol (C₂H₅OH) and briefly demonstrates how mathematical modelling of a chemical structure graph can be applied to predict molecular properties and gain insights into structure-property relationships by using three mathematical equations. Keyword:- Graph Theory; Mathematical Modelling; Ethanol.

**ENHANCING EMPLOYEE WELL-BEING AND MENTAL HEALTH
IN THE WORKPLACE STRATEGIES FOR MODERN
ORGANIZATIONS**

¹Prof. Ketaki Kukde, ²Dr. Nitin Ganorkar, ³Dr. Vijayshree Mohabiya

¹Assistant Professor, MBA Department, WCEM, NAGPUR

²Assistant Professor, MBA Department, WCEM, NAGPUR

³Assistant Professor, BE.TECH (Mech), WCEM, NAGPUR

ABSTRACT

Employee well-being and mental health have emerged as critical factors influencing organizational success, productivity, and sustainability. This research paper explores the importance of prioritizing employee well-being and mental health in the workplace and identifies strategies that modern organizations can adopt to support their employees. Drawing upon existing literature, empirical studies, and best practices, this paper provides insights into the benefits of promoting employee well-being, explores the factors contributing to mental health challenges in the workplace, and proposes actionable strategies for fostering a supportive work environment. By implementing these strategies, organizations can create healthier, more engaged, and productive workplaces conducive to long-term success.

KEY WORDS: Productivity, Sustainability, Strategies, Modern Organization.

APPLICATION OF ENERGY MANAGEMENT SYSTEM OF SMART HOUSES WITH SMART GRID

Prof. Ankita Khandait, Prof. Sagar Rahangdale, Prof. Pravin Mandvikar, Prof. Bhavesh Bohra

Assistant Professor Electrical Engineering, Wainganga college of Engineering & management,
Nagpur, Maharashtra, India

ankitakhandait.wcem@gmail.com¹

Assistant Professor Electrical Engineering, Wainganga college of Engineering & management,
Nagpur, Maharashtra, India

Srahangdale0612@gmail.com²

Assistant Professor Electrical Engineering, Wainganga college of Engineering & management,
Nagpur, Maharashtra, India

Pravinmandvikar.wcem@gmail.com³

Assistant Professor Mechanical Engineering, Wainganga college of Engineering & management,
Nagpur, Maharashtra, India

Bhavesh.bohra.mech@gmail.com⁴

ABSTRACT

Electric vehicles, plug-in hybrid electric vehicles, and smart gadgets have been observed as having an impact in the power grid field. By executing coordinated smart controls, they can improve the environment, economics, and reliability. Power distribution components and distribution transformers may experience reduced lifelong service due to the absence of coordinated control. A smart house is presented in this paper through the use of an energy management system and smart grid, which allows for organized control of the house. The distributed substructure is less likely to overload or overheat, while the consumer doesn't experience any inconvenience. The paper additionally intends to provide an architectural framework and an operational model for the home Energy Management System (EMS), an appliance in a home that facilitates household operations. Appliances at home to attain maximum energy efficiency. The Distribution System Operators (DSOs) and Energy Service Providers (ESPs) of the smart grid can be brought into focus by the architectural system, which also analyzes the functional relationships between the structure's component sections and the system as a whole.

Keywords: smart house, EMS, smart gadgets, simulation, optimization

MCHARGER FOR 12 VOLT BATTERIES WITH AUTOMATIC SHUT-OFF

Badal D. Alwalwar¹, Gokul J. Goche¹, Gaurav V. Chikte¹, Ruchita D. Bambole¹

Umesh G. Bonde²

¹Students of Electrical Engineering Department, Shri Sai College of Engineering & Technology,
Bhadrawati, Maharashtra, India

²Professor of Electrical Engineering Department, Shri Sai College of Engineering & Technology,
Bhadrawati, Maharashtra, India

ABSTRACT

Even though the majority of contemporary electrical equipment get their energy straight from the utility grid, an increasing amount of gadgets need battery-powered electricity in order to be more mobile and convenient. Additionally, a sudden breakdown of the vehicle's charging equipment frequently results in battery cell discharge. When their energy is depleted, rechargeable batteries may be easily refilled. Rechargeable batteries are designed to store electricity from the grid for later use. Therefore, the purpose of this work is to develop and build an efficient automatic battery charger that optimizes power in an efficient and sustained manner. The circuits that make up the developed device are one for charging, one for current reverse protection, and one that shows the battery's charge level while the device is charging or is at rest. Keywords – Voltage regulator, Battery Maintenance, Automatic Shut-off, etc.

MINIMIZING PENALTY BY ENGAGING APFC UNIT FOR INDUSTRIES

^{1,2}**Sagar Rahangdale², Ankita Khandait**

^{1,2}Professor in Electrical Engineering, Wainganga College of Engineering And management
Nagpur, Maharashtra, India,

ABSTRACT

In this paper we tend to see in the industrial sector the varied driving hundreds square measure ceaselessly running and generating the inductive load. Therefore the power think about this method gets reduced thanks to the inductive reactive power. However the electricity board encompasses a commonplace limit relating to the ability issue values and if the ability issue goes below the required limit; the electricity company charges the penalty to the economic shoppers. the automated power issue correction panel provides the desired compensation to beat the inductive electrical phenomenon by exploitation the ability capacitors. The microcontroller 8051 receives current signal from current electrical device and at the same time provides the signals to the varied contactors to attach the capacitors within the line for the compensation. therefore by adding the electrical device to the road can compensate the reactive power and maintains the ability issue on the subject of unity.

**UTILIZING A PROGRAMMABLE LOGIC CONTROLLER (PLC) TO
CONTROL CONVEYOR BELT**

Dhanshri S. Dahule¹, Sakshi D. Sontakke¹, Pratiksha K. Thakare¹, Ajaj N. Khan¹
Divya A. Bawane²

¹Students of Electrical Engineering Department, Shri Sai College of Engineering & Technology,
Bhadrawati, Maharashtra, India

²Professor of Electrical Engineering Department, Shri Sai College of Engineering & Technology,
Bhadrawati, Maharashtra, India

ABSTRACT

Programmable logic controllers (PLCs) are a family of digital computers with commercial and industrial uses that are used to automate electromechanical operations. The introduction of the programmable logic controller (PLC) allows necessary program modifications to be made without requiring adjustments to the electrical circuit connections. The system is mechanized using a Siemens programmable logic controller, model number S7-300 series. In this study, a programmable logic controller is used to automate conveyor belt logic. Sematic Manager is the programming software utilized in this system, which uses a S7-300 PLC (CPU 313c). Keywords –PLC, conveyor motor, Siemens s7-300, function block.

HYBRID GRID CONNECTED SOLAR POWERED INVERTER

Dr.D.R. Tutakne, Nehal Lanjewar¹, Ashish Bhandarkar², Bhushan wakade³, Jiwan kashti⁴, Akash Rathod⁵

Wainganga College of Engineering and Management, Dongargaon, Nagpur.

nehallanjewar143@gmail.com, ashishbhandarkar2017@gmail.com

wakadebhushan2002@gmail.com, jiwankashti@gmail.com

akrathod192001@gmail.com

ABSTRACT

A simple, reasonably priced converter which feeds solar generated power to an AC grid with battery backup. A push-pull inverter topology with a centre tap step-up transformer and a push pull configuration of MOSFETs is proposed. For synchronizing with ac grid a RC series connected resistance and capacitor combination is connected across the ac supply to obtain variable leading phase angle control which controls the power feed back to the ac grid from Solar inverter in ice-landing mode of operation of inverter. Solar DC energy is converted into quasi square AC power using a single phase quasi square wave three level inverter and a step-up centre-tap transformer. The output voltage and phase angle of the inverter connected to the AC bus are kept under control through duty ratio control and phase angle control, respectively. In order to study the present scheme a to a 230 V AC source, a prototype inverter model was tested. Keywords- Renewable energy, AC voltage, DC voltage, PV panel, Grid Connect, Inverter.

APPLICATION OF ENERGY MANAGEMENT SYSTEM OF SMART HOUSES WITH SMART GRID

Prof. Ankita Khandait, Prof. Sagar Rahangdale, Prof. Bhavesh Bohra

^{1,2} Electrical Engineering, Wainganga college of Engineering & management, Nagpur, Maharashtra, India

ankitakhandait.wcem@gmail.com¹, Srahangdale0612@gmail.com²

Mechanical Engineering, Wainganga college of Engineering & management, Nagpur, Maharashtra, India

Bhavesh.bohra.mech@gmail.com³

ABSTRACT

Electric vehicles, plug-in hybrid electric vehicles, and smart gadgets have been observed as having an impact in the power grid field. By executing coordinated smart controls, they can improve the environment, economics, and reliability. Power distribution components and distribution transformers may experience reduced lifelong service due to the absence of coordinated control. A smart house is presented in this paper through the use of an energy management system and smart grid, which allows for organized control of the house. The distributed substructure is less likely to overload or overheat, while the consumer doesn't experience any inconvenience. The paper additionally intends to provide an architectural framework and an operational model for the home Energy Management System (EMS), an appliance in a home that facilitates household operations. Appliances at home to attain maximum energy efficiency. The Distribution System Operators (DSOs) and Energy Service Providers (ESPs) of the smart grid can be brought into focus by the architectural system, which also analyzes the functional relationships between the structure's component sections and the system as a whole. **Keywords:** smart house, EMS, smart gadgets, simulation, optimization

EXPERIMENTAL STUDY ON AUTOCLAVED AERATED CONCRETE BLOCKS AS AN ENERGY EFFICIENT BUILDING CONSTRUCTION MATERIALS

Raj Kanojiya¹, Komal Yelgure², Mayur Lanjewar³, Ajay Burile⁴

Department of Civil Engineering, Priyadarshani Bhagwati college of Engineering, Nagpur, Maharashtra, India.

ABSTRACT

In the history of building construction, brick is one of the oldest of all materials used. Bricks are very widely used building material due to very low manufacturing cost and simple manufacturing procedure. Generally, bricks are used in partition wall and main wall of building. Brick masonry takes time in construction of wall and other components of building. So, a new masonry technique for building construction is required [1]. Autoclaved Aerated Concrete (ACC) block is a light weight concrete block and its weight is 1/5 of that of concrete block to reduce dead load of wall and other components. AAC blocks have more air bags due to which weight of AAC block is very less as compared to ordinary concrete block [12]. The manufacturing of ACC blocks requires cement, sand, flyash, gypsum, lime, aluminium powder and expansion agent. AAC blocks are very excellent material for construction site due to its energy efficient and it is ecologically friendly concrete. This paper presents the properties of ACC blocks and its advantages compared to other construction materials.

**REVIEW PAPER ON EXECUTION OF RESIDENTIAL BUILDING
AND COMPARE WITH 'SAP2000'**

¹Sumitsingh R. Suryawanshi, ²Prof. Nidhi Jejurikar

¹ PG Student, ² Assistant Professor

^{1,2} Department of Civil Engineering

^{1,2} Wainganga College of Engineering & Management, Nagpur

ABSTRACT

In the present paper, compare the area of steel of original structure and the structure we developed in SAP2000. In this project we are calculating the proportions of cement and sand as a part of execution of the project. The design method used is limit state method conforming to India standard code of practice. We have designed G+13 Structure for dead and live load combinations. We have also determined the cement and sand consumption for the 2nd floor which includes two 3BHK flats, community hall and lobby. Safe Bearing Capacity of soil on site location is taken as 80T/m².

Keyword: SAP2000, Safe Bearing Capacity of soil, AutoCAD, A_{st} on SAP2000

**REVIEW PAPER ON PERFORMANCE OF FOOTING ON INCLINED
PILE STABILIZED SLOPE**

¹Avi Yuvraj Nagpure, ²Prof. Nidhi Jejurikar

¹ PG Student Department of Civil Engineering Wainganga College of Engineering & Management, Nagpur (RTMNU)

² Assistant Professor Department of Civil Engineering Wainganga College of Engineering & Management, Nagpur (RTMNU))

ABSTRACT

Many situations necessitates the placement of footings on sloping surfaces or adjacent to a slope crest, e.g. footings for bridge abutments on sloping embankments, small to medium rise building adjacent to slope crest. When a footing is located on a sloping ground, the bearing capacity of the footing may be significantly reduced, depending on the location of the footing with respect to the slope. Therefore, it may not be possible to use a shallow foundation, and using uneconomic foundation types as piles or caissons becomes the only suitable solution of the problem. Therefore, over years, the subject of stabilizing the earth slope has become one of the most interesting areas for scientific research and attracted a great deal of attention. Slope stability can be increased in different ways, such as modifying the slope surface geometry, using soil reinforcement, or installing continuous or discrete retaining structures such as walls or piles.

Key Words: Strip footing, pile, PLAXIS 2D, Bearing capacity, Factor of safety

A REVIEW PAPER ON “U-BOOT BETON: THE CONCRETE SAVER”

¹Akshaykumar Udaysingh Yadav, ²Prof. Gaurav Hingwe

¹Student, ²Assistant Professor

¹Department of Civil Engineering

¹Wainganga College of Engineering & Management, Nagpur (RTMNU)

ABSTRACT

U-Boot technology is capable of supporting large without beams. U-Boot beton is a formwork made of recycled polypropylene. Voids from work placed in between the top in bottom reinforcements of slab. It is used to create slabs with large span or that are able to support large load without beams. U-boot is fire resistance. It is a technology pre-fabricated with other techniques such as recycled polypropylene formwork that was designed to create lightened slab & rafts. U-boot systems can be combined with other post tensioned steel and pre-fabricated slabs. The technology of hollow slab with part tensioned steel. It reduces the weight of slab & its thickness.

Keywords: U-boot beton, spacer joint, fire resistance, low cost material.

"ANALYSIS OF MULTISTOREY (G+7) RCC STRUCTURE USING STAD. PRO & AUTOCAD"

Arti M. Sorte¹, Prayas Borkar², Chaitanya G. Dhande³, Jayesh Tamshetwar⁴, Sohil Mehram⁵

1. Assistant Professor, Department of Civil Engineering, Priyadarshini Bhagwati College of Engineering, Nagpur, India.

2. Student, Priyadarshini Bhagwati College of Engineering, Nagpur, India.

Arti12kh@gmail.com, Shrutangborkar@gmail.com, Jayeshtamshetwar8@gmail.com,
Chaitanyadhande786@gmail.com, Sohilmeshram84@gmail.com,

ABSTRACT

India is a rapidly rising country in the field of construction. In the city, it is very costly. The design process of structural planning and design requires not only imaginations but also conceptual thinking, a sound full of knowledge! On how a structural engineer can make the structure economical and as safe! The structure besides the knowledge of practical aspects, such as recent design codes; by-laws, experience, intuition adjustment. The research embarks on the establishment of extensive architectural and structural models leveraging AutoCAD, capturing all vital dimensions, elements, and connections. Subsequently, STAAD.PRO is used to perform a thorough finite element analysis, assessing the structural performance under a range of loading conditions, inclusive of gravity loads, seismic forces, and wind loads. This scrutiny enables an accurate forecast of deflections, stresses, and member forces, enabling the optimization of member sizes and reinforcement detailing.

“UTILIZATION OF SUGARCANE BAGASSE AS SUPPLEMENTARY CEMENTITIOUS MATERIAL IN CONCRETE”

Amitdada kashiwar¹, Shubham Barai², Arman Badole³, Ishika Jamdhudkar⁴, Kshitij Thate⁵

^{1,2,3,4}BTech Student, Department of Civil Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra,

⁵Assistant Professor, Dept. of Civil Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India

ABSTRACT

The research delves into the utilization of sugarcane bagasse ash as a supplementary cementitious material in concrete. Investigating its feasibility, the study examines the impact on various concrete properties. The objective is to enhance sustainability in construction by repurposing agricultural waste. Sugarcane bagasse ash, a byproduct of sugar production, is evaluated for its pozzolanic properties. The findings provide insights into the potential benefits and challenges of incorporating this ash into concrete mixtures. This research contributes to eco-friendly construction practices by exploring alternative materials, fostering a more sustainable and resource-efficient approach in the production of concrete, a vital component in the construction industry.

Keywords: Sugarcane Bagasse ash , concrete , Agro waste , pozzolanic properties, construction, supplementary cementitious material

DESIGN AND IMPLEMENTATION OF A ROTATING SOLAR PANEL SYSTEM CONTROLLED BY ATMEGA328 MICROCONTROLLER FOR OPTIMAL ENERGY GENERATION.

**Rohit B. Parodhe¹, Sharukh Khan M. Pathan¹, Chaitanya S. Zade¹, Ashish B. Badkhal¹
Sameer S. Raut²**

¹Students of Electrical Engineering Department , Shri Sai College of Engineering & Technology, Bhadrawati, Maharashtra, India

²Professor of Electrical Engineering Department , Shri Sai College of Engineering & Technology, Bhadrawati, Maharashtra, India

ABSTRACT

In order to achieve optimal energy generation, this article discusses the design and implementation of a revolving solar panel system managed by an ATMEGA328 microprocessor. An ATMEGA328 microcontroller is used by the system to manage the solar panels' rotation, allowing it to follow the sun's path all day long. The panels may be precisely aligned for optimal energy absorption because to the design's integration of sensors that monitor sunlight's intensity and direction. In order to maximize energy generation efficiency, the microcontroller also makes use of feedback systems to modify the panel angles in real-time. Experimental data showing enhanced energy output over fixed-panel setups support the usefulness of the method. All things considered, the suggested design provides an affordable and environmentally friendly way to improve solar energy use across a range of applications.

MEMRISTORS FOR LOGIC DESIGNS : AN EMERGING TECHNOLOGY

Malvika Saraf

Asst. Prof. Wainganga College of Engineering & Management, Nagpur
malvikasaraf@gmail.com

ABSTRACT

This paper gives us an introduction to memristor. Memristor is considered as the fourth circuit element along with resistor, inductor and capacitor. Memristors possess some unique properties. Memristors have small feature size which makes them useful for design of ultra-compact memory systems. Recent researches are mostly focused on technology scaling as well as device size minimization design techniques. Conventional computing architectures are unable to fulfill modern application demands. Memristor is a promising alternative device which has been developed by many researchers to draw attention of its structure for numerous applications which includes computational logic, memory implementations and neuromorphic systems. This paper emphasizes the basic properties of memristor at the device level. Different digital circuits have been designed for logic operations and DSP applications. Design methodologies are developed for proper circuit design, and circuit parameters are taken from a very detailed device model and optimization techniques.

HIGH POWER FACTOR PWM CONTROLLED SINGLE PHASE FAN REGULATOR

¹Prof. Pravin K Mandvikar, ²Prof. Priyanka Deshmukh, ³Prof. Arvind M. Padole, ⁴Prof. Ankita Khandait

^{1,2,4}Department of electrical engineering Wainganga College of Engineering & Management Nagpur
– India

pravinmandvikar@gmail.com

³Department of Electronics and telecommunication engineering Wainganga college of Engineering & Management Nagpur- India

arvind.padole7@gmail.com

ABSTRACT

This paper presents the speed control of single phase fan regulator with higher power factor. A comparison of conventional phase angle controlled fan regulators using TRIAC as controllable switch and the proposed High frequency pulse width modulated controlled fan regulator is presented. The purpose of developing proposed fan regulator is to enhance the efficiency, power factor and thereby the overall performance of fan motors. Experimental hardware results of the comparison of both conventional technique and proposed method have been presented.

Keywords— High power factor; linear speed control; PWM control; Single phase induction motor.

**ADVANCEMENTS IN ROOFTOP RAINWATER HARVESTING
TECHNOLOGIES: COMPREHENSIVE REVIEW**

¹Somesh Chavhan, ²Vaibhav Mohite, ³Uddhav Sarode, ⁴Parshuram Khiare, ⁵Tejas
Jadubanshi, ⁶Kshitij Thate

¹²³⁴⁵UG Students

Department of Civil Engineering, Wainganga College of Engineering & Management, Nagpur,
Maharashtra

⁶Assistant Professor, Dept. of Civil Engineering, Wainganga College of Engineering & Management,
Nagpur, Maharashtra, India

ABSTRACT

Rooftop rainwater harvesting (RRWH) has gained significant attention as a sustainable water management practice to address water scarcity challenges. This abstract offers an in-depth review of recent advancements and trends in RRWH technologies. The paper delves into various aspects of RRWH systems, including technological innovations, design methodologies, implementation strategies, and associated challenges. It examines the role of Geographic Information Systems (GIS) and remote sensing techniques in assessing rooftop suitability, optimizing storage tank capacities, and enhancing system efficiency.

Keywords: Rooftop rainwater harvesting, water scarcity, sustainable water management, technological advancements, Geographic Information Systems (GIS), remote sensing, system design, implementation challenges, household agriculture, sustainable development goals.

REVIEW ON BIO-MEDICAL WASTE MANAGEMENT

**Sunil Bhandarwad¹, Kalyanswami Borkar², Ayush Pasine³,
Rupali Shendurkar⁴, Ayan Sethiya⁵, Mrunalini Takarkhede⁶**

¹²³⁴⁵UG Student

¹²³⁴⁵Department of Civil Engineering, Wainganga College Of Engineering, Nagpur, Maharashtra,

⁶Assistant Professor, Dept. of Civil Engineering, Wainganga College of Engineering & Management,
Nagpur, Maharashtra, India

ABSTRACT

This comprehensive review paper critically examines various aspects of biomedical waste management (BMW) based on insights from a diverse range of research studies conducted in India. The literature encompasses evaluations of existing BMW management practices, legal frameworks, and challenges associated with its disposal. Key findings highlight the hazardous nature of biomedical waste, emphasizing its potential risks to human, animal, and environmental well-being. The evolving regulatory landscape, including the Biomedical Waste Rules of 2016, is explored, acknowledging its transformative potential if effectively executed. The review extends to studies addressing specific scenarios, such as BMW generation during the COVID-19 pandemic, proposing innovative solutions like real-time tracking applications and smart biobins.

REVIEW ON STUDY OF DEFECTS ON DONGARGAON FLYOVER

¹Suyog Nagalwade, ²Prajyot Nimgade, ³Karan Shende, ⁴Savita Katre
^{1 2 3 4}Department of Civil Engineering, Wainganga College of Engineering, Nagpur

Prof. Kajal Pachdhare

⁵Assistant Professor, Department of civil Engineering, Wainganga College of Engineering and Management, Nagpur

ABSTRACT

This study presents an in-depth exploration of the myriad factors influencing the structural integrity of elevated roadways. This literature review meticulously examines the complex interplay of materials, construction methodologies, environmental elements, and design considerations that impact the performance and durability of flyovers. By categorizing and scrutinizing defects specific to materials like concrete, steel, and other components, the paper offers a comprehensive understanding of the challenges faced by elevated structures. Environmental influences, encompassing climatic variations and exposure to pollutants, are investigated to discern their role in the manifestation of defects. Real-world case studies provide valuable insights into the consequences of defects, facilitating the identification of recurrent patterns and underlying causes.

Keywords: Flyovers, Structural Defects, Infrastructure, Defect Analysis, Construction Materials, Elevated Roadways, Environmental Influences, Structural Integrity

URBAN FIRE RISK ASSESSMENT AND GREEN SPACES CORRELATION: A GEOSPATIAL ANALYSIS OF FIVE ZONES OF NAGPUR CITY

¹ Kirti Vijay Thakare, ²Dr. Kiran MegharajTajne

¹M. Tech (Structural Engineering); Assistant Professor at Priyadarshini College of Engineering
kirtithakare321@gmail.com

²Ph D, Associate Professor at Government College of Engineering, Nagpur
kgasutkar@gcoen.ac.in

ABSTRACT

This geospatial analysis delineates the intricate relationship between urban structures, fire risk hotspots, and green spaces across Nagpur's distinct zones, using advanced GIS and satellite data. The study identifies a positive correlation between the extent of greenery and urban properties, with zones rich in green spaces demonstrating lower fire risks. Findings highlight the importance of integrating green spaces in urban planning as a strategic measure for fire risk mitigation. Detailed maps reveal that areas with dense commercial properties, high-rises, and educational institutions are more prone to fire incidents, while green areas act as natural barriers, underscoring the need for targeted fire safety strategies. The study supports the integration of green spaces not only for aesthetic and ecological enhancement but also as crucial components in urban disaster resilience, reflecting the significant role of urban greenery in promoting environmental sustainability and safety in rapidly urbanizing cities.

**A FRUIT AND VEGETABLE PEELER WITH INTEGRATED PEEL
STORAGE**

¹ Sumit Rathod, ² Samirrodin Khatib, ³ Mukesh Rathod, ⁴ Gulfam Ansari
⁵ Dr. Durwesh Jhodkar, ⁶ Dr. Somdatta Karanjekar

ABSTRACT

The design and development of a pioneering kitchen utensil, the Fruit and Vegetable Peeler with Integrated Peel Storage (FVP-IPS). In response to the growing demand for streamlined food preparation and waste management solutions, this device offers a novel approach by combining the functionalities of peeling fruits and vegetables with the storage of their discarded peels. The FVP-IPS is engineered to enhance kitchen efficiency and sustainability. Its ergonomic design prioritizes user comfort and ease of use, featuring a comfortable grip and intuitive peeling mechanism. The integrated peel storage compartment seamlessly collects peel waste during the peeling process, eliminating the need for additional bowls or containers and reducing clutter in the kitchen. Furthermore, the FVP-IPS promotes eco-conscious practices by facilitating the collection of organic waste for composting or recycling purposes. This aligns with the principles of circular economy, as it transforms kitchen waste into valuable resources rather than disposing of it in landfills. The development process involved rigorous testing and refinement to ensure optimal performance and durability. The result is a high-quality kitchen tool that meets the needs of modern households seeking efficient and sustainable solutions for food preparation and waste management. In conclusion, the Fruit and Vegetable Peeler with Integrated Peel Storage represents a significant advancement in kitchen utensil design. Its integration of peeling and waste storage functionalities not only streamlines food preparation but also promotes sustainable practices, making it a valuable addition to any kitchen striving for efficiency and environmental responsibility.

Keywords: Fruit and Vegetable Peeler, Integrated Peel Storage, Kitchen Efficiency, Sustainable Practices, Food Preparation, Waste Management, Ergonomic Design, Circular Economy, Eco-conscious, User Comfort, Recycling, Composting, Innovation, Household Tool, Streamlined Functionality.

**CONTROLLABLE POWER FACTOR AND
EFFICIENCY IMPROVEMENT OF THREE PHASE INDUCTION
MOTOR USING EXTINCTION ANGLE CONTROL**

¹Krutika D. Gaikwad, ²Pravin K. Mandvikar, ³Arvind M. Padole

^{1,2}Department of Electrical Engineering

Wainganga college of engineering & Management Nagpur

Krutikagaikwad14@gmail.com, pravinmandvikar@gmail.com

³Department of Electronics and Telecommunication Engineering

Wainganga College of Engineering & Management Nagpur, India arvind.padole7@gmail.com

ABSTRACT

In proposed drive three phase synchronized extinction angle control technique has been proposed for three phase induction motor with pump and blower loads. Three semiconductor controlled switches such as IGBT or MOSFET are used for this control technique. Using this method the RMS value of the current drawn by the motor decreased by around 10 to 20 percent for the same power output. The reduction in stator current causes reduction in copper loss, improves the power factor and also the efficiency of motor is improved. The power factor with this scheme can be brought from lagging to leading range.

PWM CONTROLLED DC DRIVE WITH AC INPUT

Prof. D. R. Tutkane¹, Shikha Upadhyay², Shubhangi Nikhade³,
Shital Tiwade⁴, Sameer Bopche⁵, Dipak Tembare⁶

ABSTRACT

In our project we use PWM to control the speed of the DC motor and using Atmel AT89S52 microcontroller generate the PWM wave for speed control of DC motor, we need a variable-voltage DC power source to control the speed of the DC motor. When the DC motor is on, it takes certain time to reach at full speed. Then, the power source is on, the DC motor starts gaining speed and if we switch off the power source before it reaches at rated speed, it starts to go down. In quick ways switching on and switching off are done, the motor rotates at a lower speed between zero and rated speed. We used PWM method so its switches the motor „on“ and „off“ with a pulse wave. The main objective of this paper is to become easy with the implementation of hardware of Atmel AT89S52 microcontroller based speed control of DC motor, L293D IC is used to provide to motor and infrared sensor is used to count the speed which are interface with 555 IC, it gives senses of occurring overload to the operator at overload condition and speed display on LCD screen. For the required speed the speed controller takes signal represent and to drive a motor at a constant speed.

**DEVELOPMENT OF AN AUTOMATIC SORTING SYSTEM FOR
OBJECTS ON A HEIGHT BASIS**

**Swapnil Choudhary, Swapna V. Ghodeswar, Dr. Somadatta Karanjekar, Dr. Bharat Chede,
Bhavesh A. Bohra**

¹Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

smchoudhary001@gmail.com¹

² Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

sapnaghodeswar402@gmail.com²

³ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

somadatta.k@gmail.com³

⁴ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

drbharatchede@gmail.com⁴

⁵ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

bhavesh.bohra.mech@gmail.com⁵

ABSTRACT

In early days, object sorting was done by the operator manually. But, this method has some drawbacks such as increase in the cost of the product, slow, and inaccuracy due to the human mistake. Previously quality inspection, sorting, assembly, painting, packaging etc. were done manually. But, this technique has some drawbacks such as increase in the rate of the product, slow, and inaccuracy due to the human mistake. Existing sorting methods are used Ultrasonic sensors to differentiate height. Ultrasonic sensor detects the height of a particular object.

The ultrasonic sensor sends the data to the microcontroller. In some existing systems of sorting,

objects are placed on conveyor belt and according to movement of belt objects are getsorted, but the drawback of this system is, If object is not conveyor belt then this OBJECT will not consider for the sorting process. Here we use system which will make use PIC microcontroller which is interfaced with ultrasonic sensor to sort the OBJECTs. This is simple and cost-effective. This system can be used to sort any kind of product.

Keywords: Sorting, Ultrasonic Sensor, Object, Microcontroller, Conveyor

**DEVELOPMENT OF AN AUTOMATIC SORTING SYSTEM FOR
OBJECTS ON A HEIGHT BASIS**

**Swapnil Choudhary, Swapna V. Ghodeswar, Dr. Somadatta Karanjekar, Dr. Bharat Chede,
Bhavesh A. Bohra**

¹Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

smchoudhary001@gmail.com¹

² Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

sapnaghodeswar402@gmail.com²

³ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

somadatta.k@gmail.com³

⁴ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

drbharatchede@gmail.com⁴

⁵ Mechanical Engineering, Wainganaga College of Engineering and Management, Nagpur,
Maharashtra, India

bhavesh.bohra.mech@gmail.com⁵

ABSTRACT

In early days, object sorting was done by the operator manually. But, this method has some drawbacks such as increase in the cost of the product, slow, and inaccuracy due to the human mistake. Previously quality inspection, sorting, assembly, painting, packaging etc. were done manually. But, this technique has some drawbacks such as increase in the rate of the product, slow, and inaccuracy due to the human mistake. Existing sorting methods are used Ultrasonic sensors to differentiate height. Ultrasonic sensor detects the height of a particular object. The ultrasonic sensor sends the data to the microcontroller. In some existing systems of sorting, objects are placed on conveyor belt and according to movement of belt objects are gets sorted, but the drawback of this system is, If object is not conveyor belt then this OBJECT will not consider for the sorting process. Here we use system which will make use PIC microcontroller which is interfaced with ultrasonic sensor to sort the OBJECTs. This is simple and cost-effective. This system can be used to sort any kind of product.

MODIFIED EXISTING CONVENTIONAL ENERGY METER TO SMART METER

P.D.Deshmukh¹

¹Assistant Professor, Department of Electrical Engineering, Wainganga college of Engineering and Management, Nagpur, Maharashtra, India.

ABSTRACT

Electricity is one of the fundamental necessities of human beings, which is commonly used for domestic, industrial and agricultural purposes. Smart energy metering systems are highly demanded as they offer quick revenue collection, remote monitoring, and control of power distribution system. The smart meter describes the monitoring of energy consumption with Arduino Uno board and ESP8266 WiFi module using IoT (Internet of Things) concept. Due to manual work, our existing electricity billing system has major drawbacks.

Keywords: Arduino Uno, IoT, GSM, Wi-Fi Module, LCD display, Power Theft, Power factor.

ANDROID BASED IMAGE STEGANOGRAPHY

Prashant Khetade¹, Shubhangi Kuhikar², Pooja Bhaisare³, Priyanka Somankar⁴, Achal Landekar⁴

¹B. Assi. Professor, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}B. Tech Student, Department of Computer Science and Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT

Basically, Image Steganography is the process of hiding information which can be text, images or video inside the cover image. Android based Image Steganography is a simple android application that implements steganography concepts. In this project Image Steganography is used so that text-messages can be hidden securely in an image. Here, the sender is uploading an image which hides the secret message. Sender should upload image, add a secret message and a secret key in order to encode the message and hide it in the image. Receiver can decode the message with secret key shared by sender. The main advantage of steganography algorithms is because of its simple security mechanism. The project is good in secreting communication and in effective information hiding while maintaining authentication and confidentiality. The main aim of developing this application is to facilitate secure secret communication without generating curiosity. Proper and effective use of steganography can prove to be one of the best solutions for information hiding, authentication and confidentiality.

Keywords: Steganography, Upload Image, Encoding, Decoding, Secret Message, Secret Key, Encryption technology, Android Application.

USING IOT AND BIG DATA FOR EVIDENCE-BASED URBAN POLICY IN SMART CITIES: POSSIBILITIES, DIFFICULTIES, AND EPISTEMOLOGICAL ISSUES

Shilpa Kalambe¹, Sanjay Jain², Pradnaya More

¹Associate Professor, Electrical Engineering, Wainganga College of Engineering and Management, Dongargaon, Wardha Road, Nagpur, Maharashtra
shilpakalambejain@gmail.com

²Professor, Department of Electrical & Electronics Engineering, Sri Satya Sai College of Engineering, RKDF University, Bhopal, MP, India
jain.san12@gmail.com
Assistant Professor, ECE Engineering

ABSTRACT

With the Internet of Things, millions of devices with internet access are interconnected to a global communication network (IoT). Similarly, in an IoT context, such as a smart home, office, or city, heterogeneous wireless networks have proliferated thanks to the IoT communication paradigm, making energy-efficient communication possible. Urban planning, research, and policy are expected to enter a new era as a result of big data analysis. Pattern recognition in high-frequency data and large-scale real-time data mining are now feasible. Novel analytical techniques facilitate decision-making in a more evidence-based and intelligent urbanism; nonetheless, detractors highlight the drawbacks and hazards of instrumental, data-driven city development to urban government. Key Words: Internet of Things, Big data, Smart cities, urban policies

IOT-ENABLED SMART ENERGY GRID: POSSIBLE APPLICATIONS AND CHALLENGES

Dr. Shilpa Kalambe¹, Dr. Ujwala Malkhandale², Dr. Pradhnya More³, Dr. Sanjay Jain⁴

¹Associate Professor, Electrical Engineering, Wainganga College of Engineering and Management, Dongargaon, Wardha Road, Nagpur, Maharashtra
shilpakalambe@gmail.com

²Assistant Professor, Department of Electrical Engineering, Priyadarshini College of Engineering, Hingna, Nagpur, Maharashtra
ub.malkhandale@gmail.com

³Assistant Professor Electronics and Communication Engineering

⁴Professor, Department of Electrical & Electronics Engineering, Sri Satya Sai College of Engineering, RKDF University, Bhopal, MP, India
jain.san12@gmail.com

ABSTRACT

A new era of smart energy management has been brought about by the integration of Internet of Things (IoT) technology into energy grids. This presents a number of possible uses as well as some distinct obstacles. This abstract looks at the state of IoT-enabled smart energy networks, highlighting both the inherent difficulties and the wide range of applications they offer. IoT-enabled smart energy networks promise increased sustainability, dependability, and efficiency with features like demand response mechanisms and predictive maintenance in addition to real-time monitoring and optimization of energy generation, distribution, and consumption.

Key Words: Internet of Things, power System, Smart Grid

FABRICATION OF WINDOW CLEANER MACHINE

Asst. Prof. Roshan Kose, HOD . Prof. Swapnil Chaudhary, Dhananjay Nandanwar, Mukul Harinkhede, Anurag Khade, Darshan Lichade

Department of Mechanical Engineering, Wainganga College of Engineering & Management,
Nagpur, Maharashtra, India
roshankose187@gmail.com

Department of Mechanical Engineering, Wainganga College of Engineering & Management,
Nagpur, Maharashtra, India

Student of Mechanical Engineering Department , Wainganga College of Engineering &
Management, Nagpur, Maharashtra, India
(dhananjaynandanwar101@gmail.com), (mukulharinkhede@gmail.com),
(anuragkhade2001@gmail.com), (darshanlichade26@gmail.com)

ABSTRACT

Cleaning has been a very necessary & unavoidable daily routine. It becomes even more important when we have to perform it in areas which are not so easy in reach. Ex. High rise buildings with glass windows. In such cases conventionally a human worker has to hang several feet above the ground with not so reliable supports and safety system, with always a risk of some uncertain failures & hazardous consequences, which may prove fatal. So it necessitates the need of some safer & efficient cleaning system, with a control from much larger distance. So here we propose a simple but effective cleaning system with promising outputs addressing to the above stimulating cause. Keywords:- Cleaning , Safety , Cleaning Solution Storage , Machine Design , Assembly

OPTIMIZING TESTING LAB EFFICIENCY: A CASE STUDY ON LEAN MANUFACTURING TOOLS

Mahobiya Vijayshri¹, Somdatta Karanjekar², Jaju S.B.³, Durweshjodkar⁴

^{1,2,4} Professor mechanical department,
Wainganaga College of Engineering and Management, Nagpur

², Director, SQMS Nagpur.

^{3,4} Professor, Department of Mechanical Engineering, G. H. Rasoni College
of Engineering, Nagpur.

ABSTRACT

In today's fiercely competitive landscape, the imperative to eliminate waste and enhance efficiency is paramount. Lean Manufacturing has emerged as a global phenomenon, captivating companies of all sizes seeking to streamline operations and reduce costs. In India, numerous companies are embracing Lean principles to drive improvement initiatives. This paper aims to explore the application of Lean Manufacturing tools within testing laboratories, with a focus on waste elimination and efficiency enhancement. By utilizing Lean tools to identify and address inefficiencies, the study proposes a plan for improvement. The results of implementing this plan demonstrate significant enhancements in overall system performance, leading to increased productivity, flexibility, and the delivery of high-quality services. Key words lean manufacturing, 5 “S”, Testing lab.

IMPLEMENTATION OF THREE PHASE RESIDUAL CIRCUIT BREAKER

^[1] Arvind. M. Padole^[2] Pravin Mandvikar^[3] D. R. Tutkane

^[1]M. tech (Electronics Engineering), ^[2]M.tech (IPS), ^[3]Phd (Electrical Engineering)
^[1] arvind.padole7@gmail.com ^[2] pravinmandvikar@gmail.com ^[3] dhananjaydrt@rediffmail.com

ABSTRACT

In any electrical system, protection is the most important requirement to secure both human lives and application from the damage. The THREE PHASE EARTH LEAKAGE CIRCUIT BREAKER (ELCB) is a design which could be implemented in three phase electrical environment to provide protection to user as well as equipment's against any earth leakage fault. In three phase circuit all current carrying conductors must be sensed. An Earth-leakage circuit breaker (ELCB) is a safety device used in electrical installations with high Earth impedance to prevent shock. It detects small stray voltages on the metal enclosures of electrical equipment, and interrupts the circuit if a dangerous voltage is detected. Once widely used, more recent installations instead use residual current circuit breakers which instead detect leakage current directly.

Keywords- Earth leakage circuit breaker, Residual circuit breaker.

COMPARATIVE APPROACH OF SENSING ELEMENT USED IN PHOTO-LUMINESCENCE

Mr. Devidas B. Sonkusare^{1*} Mr. Vikram R. Nevhal^{2*}

Dr. Pradeep B. Dahikar³

¹Department of Electronics, Kamla Nehru Mahavidyalaya, Nagpur-440024, India

²Department of Electronics, Kamla Nehru Mahavidyalaya, Nagpur-440024, India

³Principal, Shri Santaji arts and Science College, Palandul, Di. Bhandara-441802, India

*email: dsonkusare88@gmail.com,

ABSTRACT

The development and performance of a compact module for the measurement of photoluminescence properties of radiating materials is described that allows for the monochromatic illumination of samples in the wavelength range 380 – 1020 nm. Photomultiplier tubes (photomultipliers or PMTs for short) are extremely sensitive detectors of light in these ranges of the electromagnetic spectrum but they have some limitation in a certain area and application. In this research paper we discuss and compare the operating principle, structure, Fundamental characteristics, properties, power, limitation and solution of existing sensing element (Photomultiplier tube) of optically stimulated luminescence reader with advanced photodiode.

Keywords: OSL reader, Photomultiplier tube (PMT), Advanced photodiode, Sensitivity, Wave length, speed.

**FABRICATION OF STRIP-MAKING MACHINE FROM SCRAP
PLASTIC BOTTLES**

Aditya Chawke, Payal Rakshe, Dhanshri Meshram, Premlata Nagpure, Ravindra Raut
Wainganga College of Engineering & Management, Nagpur

ABSTRACT

Plastic, with its perilous pollutants, poses a significant threat to our environment, contributing to land, water, and air pollution. Its decomposition process can span hundreds or even thousands of years, leaving a lasting imprint of damage on the ecosystem. The rampant usage of plastic stands as the primary culprit behind this pollution scourge. In the realm of plastic processing, the concept of cutting force emerges as a crucial factor, delineating the material's resistance against the intrusion of cutting tools. Enter the plastic strip making machine, a revolutionary innovation designed to slice plastic into smaller strips, thereby streamlining waste management efforts. Our project endeavors to harness this technology for the recycling of plastic waste in various sectors, including domestic households and industries, catering to packaging and other essential purposes. Traditionally, the accessibility of machines capable of reprocessing PET bottles remains restricted due to their exorbitant costs.

**IMPROVED POWER-FACTOR WITH POWER SAVING IN FAN
MOTORS**

**Dr.D.R.Tutakne¹, Ravindra Raut² Ankita Khandait³ Priyanka Deshmukh⁴ Krutika
Gaikwad⁵ Sagar Rahangdale**

Wainganga College of Engineering And Management Dongaragaon Nagpur

dhananjaytutakne1@gmail.com ravindraraut015@gmail.com ankitakhandaitwcem@gmail.com priyankadd14@gmail.com krutikagaikwadwcem@gmail.com sagar0612rahangdale@gmail.com

ABSTRACT

A novel topology of variable voltage control of Induction Motor has been designed and fabricated which uses only two high frequency PWM controllable switches. VVVF drives are popularly used for speed control of induction motor in many Industrial Applications. The technique proposed gives leading input power factor. The devices are turned on at zero crossing and turned off at desired instant in every half cycle. In this scheme the drive can operate in entire range of controllable speed and torque unlike conventional phase angle control scheme. The additional advantage in this method is that supply current from AC source becomes leading. The motor voltage is controllable in the entire range from zero to full voltage. The proposed scheme is very useful for various Industrial Applications like Fans, blowers, pumps, Paper mills, textile mills, rolling mills and many more.

Key Words: A variable voltage control scheme, High frequency PWM pulses, high power factor, single phase induction motor, VVVF drive

A RESEARCH REVIEW PAPER ON GREEN MANUFACTURING TECHNOLOGY

Priyanka A. Dubey, Payal A. Ghangare, Suhas T. Wankhede
, Swapnil Choudhary
Department of Mechanical Engineering
Wainganga College of Engineering and Management

ABSTRACT

The Green Manufacturing deals with conserving natural resources for future generation and recycling of material by improvements in production process than in control technology. Green Manufacturing is a method for manufacturing that minimizes waste and pollution. It slows the depletion of natural resources as well as lowering the extensive amounts of trash that enter landfills. This research technology presented in paper claims about increase in economic progress rate while decrease in resource depletion, waste generation and pollution. The paper informs about cost reduction and improved quality of product which is useful for industry purpose.

A RESEARCH REVIEW PAPER ON PREVENTION OF RAILWAY ACCIDENT USING ARDUINO BASED SAFETY SYSTEM

Payal A. Ghangare , Priyanka A. Dubey, Bhushan Meshram , Dhiraj Bahe
Department of Mechanical Engineering
Wainganga College of Engineering and Management

ABSTRACT

Railway accident prevention and protection are a key part of a wider picture of transport safety. The rail sector thus needs to improve its knowledge of trespassing and suicide, including at level crossing, in order to work out suitable responses by analyzing measures already taken in various countries. Obstacles on the right of way of the train, smoke on the train and flooding on the track can cause derailment, collision, injuries to train passengers, environmental damage and loss of properties, so there is a need to look at various ways to prevent or reduce the frequency and severity of these accidents by using Arduino based safety system to mitigate this accidents. The aim of this paper is to simulate a program in Proteus to detect obstacles on the right of way of trains, flood on the railway track and smoke in the train. Arduino code is written to detect obstacle on the track as well as fire in the trains, and floods in the railway track and simulated in Proteus.

**INTEGRATION OF VERTICAL AXIS WIND TURBINE WITH
FLYWHEEL**

**Suhas wankhede , Swapnil Chaudhary, Rahul khudre, Sarang ragit, Akash dhangol,
Abhinay singh**

Department Of Mechanical Engineering , Wainganga College Of Engineering And Management
, Nagpur, Maharashtra, India

ABSTRACT

This paper proposes a novel integration approach between vertical axis wind turbines (VAWTs) and flywheel energy storage systems (FESS) to address the intermittency and instability issues inherent in wind energy generation. Traditional wind turbines often face challenges in maintaining consistent power output due to fluctuations in wind speed, leading to grid instability and inefficient energy utilization. By incorporating a flywheel energy storage mechanism into the VAWT system, this study aims to enhance energy capture efficiency, improve grid stability, and mitigate the impact of wind variability.

The integration design involves coupling the VAWT rotor directly to a high-speed flywheel system, enabling the conversion of kinetic energy from wind into rotational energy stored within the flywheel. Through a comprehensive analysis of system dynamics and control strategies, the paper investigates the feasibility and effectiveness of this integrated approach in maximizing energy extraction from varying wind conditions while ensuring grid compatibility and reliability.

Keywords:- Integration, Flywheel , Renewables , Stability

**"OPTIMIZATION OF CARBON INJECTION SYSTEM IN STEEL
MELTING SHOP: A CASE STUDY"**

Divya Shrivastava¹ , Shrikant Shrivastava² vijayshrimahobiya³

Ass. Proff. Mechanical Engg. Department in Dr. C.V. Raman University, kota(C.G.)¹
Professor mechanical department Wainganga College of engineering and management
Nagpur³

ABSTRACT

Efficient operation of the carbon injection system is vital for enhancing productivity and reducing resource consumption in steel melting shops. This paper presents a case study detailing the optimization efforts to improve the carbon injection system's performance. Through various modifications to the pipelines and injection system, including the adoption of ceramic pipes over MS pipes, significant savings in man-hours, manpower, and process time were achieved. The description, detailed analysis, and introduction of the enhanced carbon injection system are elaborated, highlighting the benefits accrued from these modifications.

IMPROVED POWER-FACTOR WITH POWER SAVING IN FAN MOTORS

Dr.D.R.Tutakne¹, Ravindra Raut² Ankita Khandait³ Priyanka Deshmukh⁴ Krutika Gaikwad⁵ Sagar Rahangdale

dhananjaytutakne1@gmail.com¹ ravindrara015@gmail.com² ankitakhandaitwcem@gmail.com³ priyankadd14@gmail.com⁴ krutikagaikwadwcem@gmail.com⁵ sagar0612rahangdale@gmail.com⁶

Wainganga College of Engineering And Management Dongaragaon Nagpur

ABSTRACT

A novel topology of variable voltage control of Induction Motor has been designed and fabricated which uses only two high frequency PWM controllable switches. VVVF drives are popularly used for speed control of induction motor in many Industrial Applications. The technique proposed gives leading input power factor. The devices are turned on at zero crossing and turned off at desired instant in every half cycle. In this scheme the drive can operate in entire range of controllable speed and torque unlike conventional phase angle control scheme. The additional advantage in this method is that supply current from AC source becomes leading. The motor voltage is controllable in the entire range from zero to full voltage. The proposed scheme is very useful for various Industrial Applications like Fans, blowers, pumps, Paper mills, textile mills, rolling mills and many more.

Key Words: A variable voltage control scheme, High frequency PWM pulses, high power factor, single phase induction motor, VVVF drive

THE COMPARATIVE STUDY OF CONCRETE MADE FROM DIFFERENT TYPES OF COURSE AGGREGATE

Kundan Rinke, Nishant Doye, Ansh Wankar, Vaibhav Thuse, Dr. Tejas Patil

Priyadarshini Bhagwati College of engineering Nagpur Harpur Nagar, Umred Road.

ABSTRACT

The use of two types of course aggregates for different works is examined in this Study. Typical strength concrete is being made from various aggregates and their Impact on Various characteristics to the subsequent concrete. Compressive strength is The most vital property of a concrete. In this paper, two forms of coarse aggregates, Crushed stone and natural gravel were utilized. The M25 grade concrete mix typically consists of a ratio of 1:1:2. This study investigates the performance of concrete made from different types of aggregates to assess their suitability and potential advantages in construction applications.

Two types of aggregates were selected: natural gravel, crushed stone. Various properties of concrete, including compressive strength, durability, workability, and density, were examined for each aggregate type.

PYRIDINE CATALYSED METAL FREE AMINATION OF AROMATIC ACIDS WITH HYDRAZINE

Prof. Digambar Girhe

Assistant Professor at wainganga college of engineering and management, Nagpur
digambargirhe.wcem@gmail.com

ABSTRACT

There are several reports available in literature on ammonia insertion on aromatic ring. However, straight hydrazine addition on aromatic ring is complicated and restricted in the scientific field. The cause aside for the ammonia is good nucleophile and smaller in size. Meanwhile, hydrazine is more massive and less nucleophile as compared to the ammonia. We were concerned in developing artificial strategies for the hydrazine insertion on the aromatic ring. As a result, studies on direct hydrazine insertion onto the aromatic ring by displacing the aromatic halide group are restricted. Though, we have investigated the detailed study of metal free insertion of hydrazine to aromatic ring by treating various aromatic halides in the presence of pyridine in environmentally benign solvent system.

EXPLORING BLOCK CHAIN FOR ENHANCED IOT SECURITY: A TWO-LAYER APPROACH TO AUTHENTICATION AND AUTHORIZATION

Prof(Dr.) Ajay Kumar Sharma¹, Renu Goswami²

Prof & M.Tech(Program Head), GITS, Udaipur, Assistant Professor, Wainganga College of Engineering & Management, Nagpur

¹Profsharmaak@gmail.com, ²rgrenu.goswami12@gmail.com

ABSTRACT

The Internet of Things (IoT) connects billions of devices and generates massive amounts of data. However, IoT systems face major security challenges, especially regarding authentication and authorization. Centralized approaches have single points of failure and limited scalability. Block chain technology offers a decentralized solution, but public block chains like Bitcoin and Ethereum have limitations for IoT devices due to computational overhead and latency. This paper proposes an IoT-optimized two-layer block chain architecture for authentication and authorization. The first layer is a consortium block chain optimized for IoT devices. The second layer is a public block chain for decentralized identity and access control. Cross-chain protocols connect the two layers securely. Linear secret sharing schemes implement fine-grained, attribute-based access control policies in smart contracts. Experiments on Ethereum and Hyper ledger Fabric validate the approach's efficiency and security compared to centralized methods. The two-layer model significantly reduces overhead for IoT devices while retaining decentralization benefits. The architecture provides resilient, scalable access control suitable for distributed IoT networks. Keywords: Two-Layer Block chain, Cross-chain protocols, Internet of Things (IoT).

A comprehensive solar modeling and programming simulation tool employed in designing a continuous solar-powered adsorption refrigeration system.: Trnsys 16

Prof. Mithlesh Pande

Department of Mechanical Engineering, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India
mithleshpande@mail.com

ABSTRACT

Simulation is used to evaluate the effect of process changes, new procedures and capital investment in equipments. Simulation of a project leads to reduction in production cost, which ensures the success of the proposed project. Also, it provides initial design data for the experimental project. Thus, the design analysis and variables used for project simulation must be designed properly, revised, tested, and re-tested to guarantee how accurate the experimental design is. Hence, solar adsorption refrigeration system was designed, simulated and constructed using zeolite 4A/13X blend and water. The models were simulated using TRNSYS 16.0 simulation tool. From the result, it was observed that the collector area increases with increase in the system COP from month to month. The highest system COP of 1.53 was obtained in the month of April while the least was 0.4 for July due to frequent rainfall. Also, a much high COP was obtained for dry season while lower COP was gotten for harmattan season.

Keywords-TRNSYS, adsorption refrigeration, solar cooling, solar adsorption, adsorbent, solar concentrating

“Speech Improvement Using An Efficient Adaptive Filter”

Prof. Gaurav Patel¹, Prof. Harshal Shelar,² Prof. Shishir Dadich³, Prof. Harshal.chaughule⁴

^{1,2,4}Assistant Professor Electrical & Electronics Engineering, Sandip University, Nashik, Maharashtra, India
Gpgaurav1989@gmail.com¹

³Assistant Professor Civil Engineering, Sandip University, Nashik, Maharashtra, India
[Shishir.dadich@sandipuniversity.edu.in³](mailto:Shishir.dadich@sandipuniversity.edu.in)

ABSTRACT

The noise removal from speech signals has applications ranging from cellular communications to front ends for speech recognition systems. In this paper, an optimal estimate of adaptive filtering using least mean square algorithm has been implemented for the observed noisy speech. The algorithm yields better results in noise reduction with significantly less distortions and artificial noise in other side Recursive least squares (RLS) also use but it comes with increase complexity and computational cost. In this paper, it gives the concept of speech improvement in a practical approach, using different speech enhancement algorithms. Extraction of high resolution information signals is important in all practical applications. The Least Mean Square (LMS) algorithm is a basic adaptive algorithm has been extensively used in many applications as a consequence of its simplicity and robustness, and Recursive least squares (RLS) also use but it comes with increase complexity and computational cost. Hence in this paper we present a novel adaptive filter for de-noising the speech signals based on normalized and unbiased adaptive noise reduction (UNANR) algorithm.

Restricted Entry Zone Intrusion Notifier System with Alarm

Adarsh Knavghare, Amay Pacharya, Mohit Kumar RTurkar, Dipak LRahangdale, Ajay Ybaghele

ABSTRACT

This research paper presents the design and implementation of a smart home security system utilizing Arduino and GSM technology. The system is engineered to detect intruders through an IR sensor, activate alarms, and dispatch notifications to linked mobile devices. It comprises an Arduino nano board, SIM 800L GSM module, buzzer, LED, and an IR sensor. The system is programmed via Arduino software and can transmit signals to the Blynk IoT cloud for push notifications.

Innovating Construction: Cotton Thread as an Admixture in Cement Bricks

**Chandni Kapse¹, Gulshan Borade², Dishant Dighore³, Kunal Patle⁴,
Sachin Bhang⁵, Pallavi Deotale⁶**

^{1,2,3,4,5}B. Tech Student, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

⁶ Head of Department, Department of Civil Engineering, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India.

ABSTRACT

This study explores the potential of integrating cotton thread as an admixture in cement bricks to enhance their structural properties. By incorporating cotton thread into the brick composition, researchers aim to improve tensile strength, flexibility, and thermal insulation while reducing material costs and environmental impact. Through laboratory experimentation and analysis, this study investigates the optimal ratios of cotton thread to cement mixture to achieve desired outcomes. The findings shed light on the feasibility and efficacy of this innovative approach in construction, offering insights into sustainable building practices. Integrating cotton thread into cement bricks presents a promising avenue for enhancing structural integrity and sustainability in the construction industry. This research contributes to the ongoing efforts to develop eco-friendly construction materials and techniques, addressing the challenges of resource depletion and climate change mitigation.

Keywords: Construction innovation, cement bricks, admixture, cotton thread, structural properties, tensile strength, flexibility, thermal insulation, material costs, environmental impact, sustainable building, laboratory experimentation, optimal ratios, eco-friendly materials, climate change mitigation.

Monitoring of pollutants in the air of Pune City

Nidhi Mishra¹, Nidhi Sharma²

Electrical Engineering Department, S. P. P. U./JSPM's BSIOTR, Pune, Maharashtra, India

nidhimishra7438@gmail.com

Department of Chemistry, S.P.P.U./JSPM's JSCOE, Pune, Maharashtra, India

drnidhi0927@gmail.com

Abstract

Because of Pune's low air quality, studies on various kinds of air components are being conducted in order to assess the air's overall quality. The study includes important pollutants such as PM2.5, PM10 (RSPM), NO₂, O₃, SO₂, and CO, as well as their causes and impacts. PM2.5 levels that are beyond WHO guidelines are a serious issue; NO₂ and O₃ levels should be taken seriously. The research emphasizes the need for more stringent emission limits, the promotion of public transportation and electric cars, and the oversight of industrial and building activities in order to offset such pollutants and attain better air in Pune City. This study aims to assess Pune City's air quality and provide insights by investigating a variety of air quality factors in detail. Three years (2022, 2023, and 2024) of a complete tracking strategy is looked at, considered various air quality components such as RSPM (PM10), PM2.5, NO₂, O₃, and so on. Several graphs covering the years are examined in order to track Pune City's rising air quality index. Over the past three years, monthly data has been gathered from government websites and showed on an array of graphs that use the average value of the data.

Keywords: AQI, PM-10, PM2.5, NO₂, O₃, air pollution sources, RSPM.

An approach towards Virtual Intelligent SoftLab On Smartphone Application Development

Bhaskar Yadao Kathane¹, Kishor Madhukar Dhole², Sachin Y. Zade³

¹Bhawabhuti Mahavidyalaya, Amgaon, Distt-Gondia (M.S.) India

²S. K. porwal College, Kamptee, Distt-Nagpur (M.S.) India-441001

³Wainganga College of Engineering and Management, Nagpur

ABSTRACT

The scope of this paper includes development and implementation of virtual lab on Smartphone application design and development. Virtual Lab basically designs for Electronics, Computer Science and Engineering students, teachers or researchers. Virtual laboratories are becoming popular in the education field. There is a facility for change of Input values using virtual instruments and observed the outputs with virtual Instrument. The screen shows the characteristics of devices. The virtual experiment described here will help students to perform it any time anywhere. By using java API's application developers are able to create virtual laboratories for android phones. Mobile phones are used as a front end for GUI.

Keywords –SoftLab, Virtual Laboratory, Virtual Instruments, VIS Model, Mobile Applications

SMART SERVICES MANAGEMENT SYSTEM

Sujata Dake¹, Sabanam Sahare², Sneha Tandekar³, Atharv Dharme⁴,
Ritiksha Kambale⁵

¹ Assi. Professor, Department of Computer Science & Engineering, Wainganga College of Engineering & Management, Nagpur, India.

^{2,3,4,5} B.Tech Student, Department of Information Technology, Wainganga College of Engineering & Management, India.

ABSTRACT

These days versatile phone is a fundamental portion of people's life. There is a ceaseless rise in a few versatile computing applications, concentrated on people's day by day life. In such applications, location-dependent frameworks have been identified as a noteworthy application. Such application which presents the engineering and usage of such a area is commonly known as Shrewd City Direct. The primary thought process of the venture is to investigate how to realize a versatile city direct utilizing the Android stage, counting a model of the city direct. The venture employments the investigate strategy of plan science. Through planning and executing an artifact (that is model of a city direct), the objective extend is come to. At long last, the venture is evaluated in four angles counting stage assessment, common useful assessment, situation assessment, and non-functional assessment. The model executed incorporates essential functionalities of city guides such as appearing the outline and finding focuses of intrigued (POIs). Other than, the venture has assessed how to combine display innovations like Google Maps and the phone application into the model.

DC TO DC VARIABLE CONVERTER

¹Ms. Nikita Sathwane, ²Ms. Kalyani Chandel, ³Ms. Kalyani Agashe, ⁴Ms. Sonali Jaiswal, ⁵Ms. Laxmi Patle

B. TECH. Student, Wainganga college of Engineering and management, Nagpur, Maharashtra, India.

ABSTRACT

This paper presents the feasibility study of variable inductor (VI) based bidirectional DC-DC converter for applications with wider angle of load variations such as electric vehicles (EVs). An additional winding is introduced to the conventional power inductor to inject a control current for adjusting the permeability of magnetic cores. This has significant merits in controlling the current ripple and enhancing the current handling capability of power inductors thereby reducing the size of magnetic components and improving the performance. For current values, twice and three times the rated current, the current ripple is reduced by 40.90% and 36.10% respectively. Nonetheless, this device requires a precisely controlled dc-current. As such, a small current controlled, low-power and low-cost buck converter is built to power up the auxiliary winding. To improve the reliability and robustness of the VI, an integrated closed loop control that enables the control of the main converter and the auxiliary converter is also implemented and tested in real time to test the viability of the VI.

Integration of Real Time Analytics and Unified Information Management with Intelligent Process in Big Data and Analytics

Dr. Vaibhav R. Bhedi
Associate Professor, MCA Department,
VMV Commerce, JMT Arts and JJP Science College, Nagpur.
Nagpur, India

ABSTRACT

In view of big data and analytics, The Real-Time Analytics enables the business to leverage information and analysis as events are unfolding [1]. It included proposed Intelligent Query Adviser, interactive dash board, Event processing and advanced Analytics. Intelligent Query Adviser can find contents of required analysis. Intelligent Query Adviser can determine the expected result. The Intelligent Query Adviser will be used to suggest the query depend on analyst thought. Unified Information Management and Intelligent Process work together as powerful way of source in big data which easily available across several multiple sources to fulfil needs of information by only getting access. Unified Information Management included High Volume Data Acquisition, JIT Acquisition, Multi-Structure Data, Low Latency Data Processing and Analysis Consistency. The High-Volume Data must gather all data from different channels but it cannot persist and maintain all data that have received. High Volume data Acquisition may ignore and discard data. The JIT Acquisition will persist and maintain ignored and discarded data. Intelligent Process included Embedded Analysis Applications, Rules Engine, User Navigation, Automated Navigation and Performance and Strategy Management. The Proposed User Navigation and Automated Navigation are two separate ways to find analytic contents for business using embedded application. The suggested or found analytic contents or information by navigation to embedded application helps business for decision.

DESIGN EXPERIMENTAL APPARATUS FOR FLAMESPRAY PYROLYSIS

Leena Magarde¹, Pankaj Nagpure², Shubham Thakre³, Pragati Kharbade⁴

^{1,3,4}Assistant professor at wainganga college of engineering and management Nagpur India

²Associate professor at shreeshivaji science college Amaravati India

linumagarde@gmail.com

ABSTRACT

This work is an attempt to design and set up the operators for flame spray pyrolysis (FSP) and to prepare the oxide nano particles off Al₂O₃ using this non-conventional technique. The work also includes the investigation of crystallinity, particle size and morphology of prepared materials by controlling the various parameters of the FSP during the synthesis process. To study the crystallinity particle size and morphology, X-ray diffraction (XRD), Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM) techniques are to be used respectively

Single Phasing preventer, cum voltage unbalance Relay for Protection of Three Phase Induction Motors

Prof. Prafulla Puri, Dr. D. R. Tutakne, Dr. Somadatta Karanjekar, Dr. Bharat Chede, Prof. Pravin Mandvikar, Prof. Sagar Rahangdale
Wainganga College of Engineering and Management Dongargoan, Nagpur

ABSTRACT

An economic fast response single phasing detection, cum three phase voltage unbalancing protective relay, to prevent accidental running of three phase induction motors in case of voltage unbalancing and sudden blowing fuse in running as well as at the starting of three phase induction motors is presented in this paper. The scheme presented detects the presence as well as balancing of the magnitude and 120° phase angle between three phase supply systems. The relay contact output can be used in the control circuit of the starter of three phase induction motor. The relay scheme is useful for protection of three phase induction motors of all ratings. The scheme uses an op amp voltage comparator and three phase voltage balancing resistive network to discriminate the healthy and unhealthy condition for the operation of the relay. The relay can be designed to operate in self resetting mode or manual resetting mode.

Multilevel Smart Car Parking System with Horizontal Rotary Mechanism

Jyoti M. Kumbhare, Ashutosh D. Bagde, Sarvesh Chaudhari, Yash Balapure

Department of Electrical Engineering, Yeshwantrao Chavan College of Engineering Nagpur, India

Biomedical Engineering, Faculty of Engineering and Technology,

Research Scientist, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, DMIHER,

Wardha, India

ABSTRACT

Traditional parking structures are often inefficient, occupying large amounts of space and lacking the capacity to accommodate the increasing number of vehicles. Emphasize the necessity for innovative parking solutions to alleviate urban parking problems. This paper presents the concept of automatic smart car parking with horizontal rotary mechanism. This system provides safe and easy parking of cars in an automated manner. In this system a horizontal rotary platform is used as a location to park the incoming cars. The proposed system is developed using 8051 microcontroller and a comprehensive solution to urban parking challenges. By leveraging advanced technologies such as RFID and microcontrollers, the system streamlines parking operations, enhances user experience, and contributes to sustainable urban development.

Keywords— 8051 Microcontroller, rotary car parking system, automatic car parking, smart car parking.

INDUSTRIAL ROBOTIC ARM USING RASPBERRY PI

Rupali Dasarwar¹, Nayan Thakre², Kundan Tikale³, Tejas Randive⁴, Adarsh Dhoke⁵

¹Assi. Professor(HOD), Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

^{2,3,4,5}B.Tech Student, Department of Artificial Intelligence & Data Science, Wainganga College of Engineering & Management, Nagpur, Maharashtra, India.

ABSTRACT:

This project focuses on building a robotic arm using a Raspberry Pi to pick up objects from one set position and move them to another. The Raspberry Pi, a compact computer, serves as the brain controlling the robotic arm's movements. Through precise programming, we equip the Raspberry Pi-controlled robotic arm with the ability to detect objects, securely grasp them, and accurately relocate them. Additionally, the project integrates object detection algorithms to enhance the arm's functionality. The main objective is to create an affordable and accessible robotic arm solution tailored for tasks like object detection, picking, and placing. Through rigorous experimentation and testing, we showcase the Raspberry Pi-controlled robotic arm's reliability in executing these tasks with precision. The project underscores the potential of leveraging affordable technologies such as the Raspberry Pi to develop functional robotic systems across diverse applications, including manufacturing, education, and research. The Industrial Robotic Arm using Raspberry Pi represents a cutting-edge solution for efficient object manipulation in industrial settings.

Keywords: industrial robotic arm, cost-effective, automation, robotic arm, Raspberry Pi, object manipulation, 360-degree base rotation, 6 degrees of freedom (6DOF).

IOT Based Industrial Cloud Monitoring System for Hazardous Emissions

**Dr. Vikram Ramesh Nevhal
Kamala Nehru Mahavidyalaya Nagpur**

ABSTRACT

Internet of Things (IoT) is a fast-growing innovation. IOT is a network of physical objects or things that are embedded with electronics, software, sensors, and network connectivity, allowing them to obtain and exchange data. Industrial monitoring and control is required to collect all relevant information, statistics, and data pertaining to the various industrial processes, motors, machines, and devices used in manufacturing facilities. This aims to provide controlled access, increased productivity, and high-quality results in the manufacturing of industrial period. Remote control and monitoring via communication methods such as ZigBee, RF, and infrared have been widely used in various industries in this new age of technological developments. However, because of their slow communication speeds, distances, and data security, these wireless communication procedures are frequently limited to simple applications. Furthermore, they are easily influenced by noise and inclement weather, including snow, fog, and rain. The main microcontroller in this model is an Arduino Mega, which is also connected to a Wi-Fi module for internet access, a barometer sensor for temperature and pressure, a humidity sensor for humidity sensing, and a gas sensor for detecting smoke and toxic emissions other factors in the workplace to ensure safety regulations.

Keywords: Internet of Things, Monitoring system, Sensor, Wireless Communication.

ACCIDENT DETECTION SYSTEM WITH GPS , GSM AND BUZZER

Prof. Swapnil Chaudhary

Vishal Bopche¹, Mrunal Thawkar², Priyanka Bawane³, Pradya dhok⁴

Prof. Head of Department of Mechanical Engineering

Student ¹, Department of Mechanical Engineering

Nagpur, India

Abstract

With vehicles being so affordable, there has been an increase in the number of vehicles on the roads all over the world. Increase in the number of vehicles led to increase in the number of accidents and lately these accidents are not detected and victims are not served immediately which leads to the death of victims. So we proposed a system namely 'accident detection system with GPS, GSM and buzzer'. The System is designed to detect and alert drivers to the dangerous situation and the obstacles in the road. A vibration sensor has been used to check the vibration rates of any car. By monitoring the information from the IR and the vibration sensor, an accident can be recognized. These system uses a GSM module which sends alert messages including the location provided by the GPS module to the rescue team or to the owners. So the team can track the location and where the accident has been detected and necessary service can be taken after receiving the alert message. Through this system an accident can be detected and many lives can be saved by the quick response from the rescue team or the emergency services.

Keywords : IR sensor , Vibration sensor, GPS and GSM module, Buzzer.

Experimental analysis of tool wear and cutting force during machining of EN24 grade steel using nanoparticle based cutting fluid

Durwesh Jhodkar¹, Akhilesh Choudhary², Tapus Bajpai³, Rakesh Haldkar⁴

¹ Mechanical Engineering Department, Wainganga College of Engineering and Management, Nagpur, Maharashtra, India

² National Institute of Technology, Hamirpur, Himachal Pradesh, India

³ Mechanical Engineering Department, Malaviya National Institute of Technology Jaipur, Rajasthan, India

⁴ Mechanical Engineering Department, St. Aloysius Institute of Technology, Jabalpur, Madhya Pradesh, India

Abstract

This paper presents a comprehensive experimental investigation into the effects of nanoparticle-based cutting fluid on tool wear and cutting forces during the machining process of EN24 grade steel. The study aims to assess the efficacy of nanoparticle-based cutting fluids in enhancing machining performance when utilized with coated carbide inserts (WC). Machining experiments were conducted using a conventional lathe machine under dry, wet and nano particle based cutting conditions. The machining parameters such as speeds, feed rates, and depths of cut were kept constant. The tool wear and cutting forces were monitored and analyzed to evaluate the performance of the cutting fluid. Results indicate that the utilization of nanoparticle-based cutting fluid leads to reduced tool wear and lower cutting forces compared to conventional cutting fluids. Furthermore, the coated carbide insert demonstrates improved wear resistance and extended tool life when used with the nanoparticle-based cutting fluid. The findings of this study provide valuable insights into the optimization of machining processes for enhanced efficiency and productivity in metalworking applications.

COURSE OFFERED

BRANCHES	INTAKE	DTE CAP CODE
----------	--------	--------------

BACHELOR IN ENGINEERING (B.E)

Mechanical Engineering	60	414561210
Electrical Engineering	60	414529310
Civil Engineering	60	414591110
Computer Science & Engineering	120	414524210
Electronics & Telecom. Engineering	30	414537210
Artificial intelligence & Data Science	60	414599510

MASTER IN TECHNOLOGY (M.TECH)

Computer Science & Engineering	24	414524210
Software System	06	414570010
Electronics Engineering	12	414537610
Power Electronics & Power System	24	414559210
Artificial intelligence & Data Science	12	414594510
CAD-CAM	18	414560410
Computer Aided Structural Engineering	30	414595110

MASTER OF BUSINESS ADMINISTRATOR

MBA	180	414510110
MCA	180	414510111

DIPLOMA IN ENGINEERING

Mechanical Engineering	60	414561220
Electrical Engineering	60	414529320
Civil Engineering	60	414519120
Computer Science & Engineering	60	414524220



JOB FAIR



PLACEMENT 2024



CULTURAL EVENT

**FACILITIES UNDER
WAINGANGA COLLEGE OF ENGINEERING & MANAGEMENT**



FREE WIFI



BOYS HOSTEL



GIRLS HOSTEL



BUS FACILITY



SPORTS FACILITY



CANTEEN