



NANDHA ENGINEERING COLLEGE

(AUTONOMOUS)

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

ERODE – 638 052 TAMILNADU

Email : principal@nandhaengg.org Mobile : 73737 12234

Criterion 3 – Research, Innovations and Extension

3.4

Research Publications and Awards

3.4.4 *Number of books and chapters in edited volumes / books published per teacher during the last five years*

3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during last five years

**FIRST PAGE OF BOOKS / CHAPTERS /
CONFERENCE PAPERS PUBLISHED
ACADEMIC YEAR 2021-22**

3.4.4

3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during last five years

3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Year of publication	ISBN/ISSN number of the proceeding	Name of the publisher
1.	Dr P Sukumar, Abarna K, Kaviya T, Ramya R	NA	Automatic Medicine Announcement System	2021-22	ISSN: 2582-3930	International Journal of Scientific Research in Engineering and Management (IJSREM)
2.	Mr.A.Amarnath prabhakaran, Kishore R, Narmathaa S, Pavithra S	NA	Automatic Patient Respiration And Temperature Monitoring In Tele Health	2021-22	ISSN: 2582-3930	International Journal of Scientific Research in Engineering and Management (IJSREM)
3.	Suresh K, Indumathi O D, Nivethitha M	NA	Classification Of Normal And Atrial Fibrillation Ecg Signal Using Long Short Term Memory Network In Deep Learning	2021-22	e-ISSN: 2582-5208	International Research Journal of Modernization in Engineering Technology and Science
4.	Dr. Sukumar P, Manojbharathi M, Pragalya S, Dharanitharan M, Maheswaran N	NA	Smart Breath Bag Unit And Vital Sign Module	2021-23	e-ISSN: 2582-5209	International Research Journal of Modernization in Engineering Technology and Science
5.	Mrs. M. Nivethitha, Malathi M, Indhirani A, Gobiga V, Nanthini T	NA	Backup Power Generation By Carbonizing The Medical Waste	2021-22	ISSN: 2582-3930	International Journal of Scientific Research in Engineering and Management (IJSREM)

6.	Mrs. E. Madura, Kavim Kumar P, Mohana Prasath B, Subash M, Vignesh S.	NA	Smart Audio Gloves For Deaf And Dumb People	2021-22	ISSN: 2582-3930	International Journal of Scientific Research in Engineering and Management (IJSREM)
7.	Dr. Sukumar P, Mohan K.S, Aswini A K, Narmadha-E Manicka Praveen J, Bhuvaneshwaran S	NA	Nanoscale Synthesis And Characterization Of Zinc Oxide Nanoparticles And Investigation Of Its Properties With Antibacterial And Antifungal Activity	2021-22	ISSN: 2395-5252	International Journal of Advances in Engineering and Management (IJAEM)
8.	Madura E, Mohan K.S, Sindhu DB, NishmaRoshini N Sharmila S, Sharmila J	NA	Synthesis And Characterization Of Ferrous Oxide Nano Particles For Antimicrobial Activity	2021-22	ISSN: 2395-5252	International Journal of Advances in Engineering and Management (IJAEM)
9.	ABINAYA S VENKATESH N KARTHIKEYAN M MUKILAN S ARAVIND .V	NA	Experimental Investigation On Fiber Reinforcedconcrete With Replacement Of Cement By Fly Ash	May 2022, Volume 9, Issue 2	E-ISSN 2348-1269, P- ISSN 2349-5138	International Journal of Research and Analytical Reviews
10.	ADIL ABDUL MAJEED JEEVANKUMAR. V JOSHINI SAMYUKTHA. S KAMAL. K KAMALAKKANNAN.M.K.	NA	An Experimental Study On Partial Replacement Of Cement By Rha With Addition Of Admixture	June 2022, Volume 9, Issue 2	E-ISSN 2348-1269, P- ISSN 2349-5138	International Journal of Research and Analytical Reviews
11.	S.BALA KRISHNA M.RAMAKRISHNAN A.SYED IBRAHIM M.VIGNESH DeneshK.C	NA	An Experimental Study On Partial Replacement Of Fine Aggregate By Polyethylene Terephthalate	May 2022, Volume 9, Issue 2	E-ISSN 2348-1269, P- ISSN 2349-5138	International Journal of Research and Analytical Reviews

12.	Yeswanth.M Pavin.T Vigneshwaran.S Nataraj.B Jeevanandham.S	NA	Experimental Study On Partial Replacement Of Cement With Ggbs And Addition Polypropylene Fiber	June 2022, Volume 9, Issue 2	E-ISSN 2348-1269. P- ISSN 2349-5138	International Journal of Research and Analytical Reviews
13.	M.K.Kamalakannan S.Dineshkumar	NA	Study On Behaviour Of Alkali Activated High Volume Flyash Concrete	Volume:04 /Issue:01/J anuary- 2022	e-ISSN: 2582-5208	International Research Journal of Modernization in Engineering Technology and Science
14.	Divya ESelvi K	NA	A Review On Green Concrete Materials For Sustainable Environment	Volume:04 /Issue:01/J anuary- 2022	e-ISSN: 2582-5208	International Research Journal of Modernization in Engineering Technology and Science
15.	Karthigaikumaran M Denesh KC	NA	Experimental Investigation On Fiberrein Forced Pervious Concrete	Volume:03 /Issue:12/D ecember- 2021	e-ISSN: 2582-5208	International Research Journal of Modernization in Engineering Technology and Science
16.	ARAVIND.V KUMAR.M	NA	Experimental Study On Ferro Cement Composite Slab	Volume 10 Issue 2 2022	ISSN (Online): 2320-9364, ISSN (Print): 2320-9356	International Journal of Research in Engineering and Science
17.	V.MAGESH V.ARAVIND	NA	A Study On Flexural Behaviour Of Steel Fiber Reinforced Concrete With Addition Of Mineral Admixture	Volume 10 Issue 2 2022	ISSN (Online): 2320-9364, ISSN (Print): 2320-9356	International Journal of Research in Engineering and Science

18.	M.Yeswanth S.Praveenkumar	NA	A Study On Polyester Fiber Reinforced Concrete With Addition Of Silica Fume	Volume:04 /Issue:01/ January- 2022	e-ISSN: 2582- 5208	International Research Journal of Modernization in Engineering Technology and Science
19.	Ravisankar K.L Renugadhevi.S	NA	Effect Of Metakaolin On Pervious Concrete	Volume:04 /Issue:01/ January- 2022	e-ISSN: 2582- 5208	International Research Journal of Modernization in Engineering Technology and Science
20.	K. Sathiyamoorthy S. Gnana Venkatesh	NA	A Review On Self-Curing Concrete	Volume:04 /Issue:01/ January- 2022	e-ISSN: 2582- 5208	International Research Journal of Modernization in Engineering Technology and Science
21.	Sathya Priya M Abdul Hameed A	NA	Study On Investigation On Behaviour Of Rc Beams Using Rebar Coupler	Volume:04 /Issue:01/ January- 2022	e-ISSN: 2582- 5208	International Research Journal of Modernization in Engineering Technology and Science
22.	M.K.Kamalakaran K.Manikandan	NA	Study On High Performance Fibre Reinforced Concrete Using Marble Powder, Quartz Powder & Silica Fume	Volume:04 /Issue:01/ January- 2022	e-ISSN: 2582- 5208	International Research Journal of Modernization in Engineering Technology and Science
23.	Dr D Vanathi	NA	Internet Of Things- Cloud Security Automation Based On Artificial Intelligence	2021-22	ISBN: 978-1- 6654-9710-7	International Conference on Applied Artificial Intelligence and Computing

24.	P Sobana Dr S Prabhu Dr S Karuppusamy Dr P Thirumoorthy	Theoretic al And Applied Sciences	Forecasting Stock Price Using Multiple Regression In Machine Learning	2021-22	ISSN: 2660- 5317	Central Asian Journal Of Theoretical And Applied Sciences
25.	Dr D Vanathi Dr S Prabhu Dr S Karuppusamy Dr P Thirumoorthy	Artificial Intelligen ce Basics - Book	Artificial Intelligence Basics	2021-22	ISBN: 9798887333076	Notion Press
26.	P Poomani Dr P Thirumoorthy	Theoretic al And Applied Sciences	Cognitive Radio Networks With Flexible Channel Cooperation In Resource Allocation	2021-22	ISSN: 2660- 5317	Central Asian Journal Of Theoretical And Applied Sciences
27.	P Poomani Dr P Thirumoorthy	Theoretic al And Applied Sciences	Efficient Resource Allocation By Sub Channel Assignment In Cognitive Radio Networks	2021-22	ISSN: 2660- 5317	Central Asian Journal Of Theoretical And Applied Sciences
28.	Dr Rajaram Jatothu A Sireesha Dr D Vanathi Dr S Sangeetha	Fundame ntals of Blockcha in Technolo gy - Book	Fundamentals Of Blockchain Technology	2021-22	ISBN: 978-93- 5625-269-1	SIP International
29.	Ms.V.Parameshwari Ms.A.Nithya Ms.R.Preetha B.Ranjani S.Sumithra	NA	An Efficient Patient Monitoring System For Healthcare Application Using Internet Of Things	2021-2022	2582-7898	International Journal of Progressive Research in Science and Engineering(IJPRSE)
30.	Ms.Niji.P.S P. Hemavarshini J. Kavipriya B.Kiruthika M.Lavanya	NA	Multi Purpose Drone For Medical Emergency	2021-22	2455-0523	International Journal on Applications in Engineering and Technology (IJAET)

31.	Monica.R Mohamedasif.K TharunKumar.S Tirunavukkarasu.A Vinoth.S	NA	Deep Learning Based Automated Tomato Leaf Disease Detection And Classification By Emperor Penguin Optimizer	2021-2022	2581-9429	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
32.	ArulKarthick E K Sanjai R Vignesh B Rajeshwaran A Navaneethan M	NA	Improved Security Of Hidden Data Based On Steganography Using ECC Method	2021-2022	2583-1976	ScientificHub of AppliedResearch in Engineering & InformationTechnology
33.	Ms.P.Kokila S.P.S. Harivignesh D. Dhanuprasath M. Gokul Kumar K. Elamparithi	NA	Analysis Of 5.8ghz Helicalantenna For The Application Of Unmanned Aerial Vehicle	May - 2022	2249 - 555X	Indian Journal of Applied Research
34.	Ms.P.Kokila Ms.V.Logeswari Yamuna Devi K Mythurikadevi S Lithanya P	NA	Duroid Substrate Microstrip Patch Antenna Design For Wireless Capsule Endoscopy	May - 2022	2249 - 555X	Indian Journal of Applied Research
35.	Brindha S Vigneshwaran S, Sabarish S, Karthik prabu V, Kailash M,	NA	Metalcloud: Wireless And Battery Operated Handheld Storage Drive	March 2022	2321-2004	International Journal of Innovative Research in Electrical,Electronics,Instrumentation and control Engineering
36.	AN.Ramalakshmi G. Prabhakaran	NA	An Efficient 2D-DCT/IDCT Architecture For Portable HEVC-Encoding	May 2022	2347-7180	UGC Care Approved, Dogo Rangsang Research Journal
37.	T.G.Dhaarani D.Chandru V.G.Harini G.S.Madhumitha	NA	A Safe Cognitive Radio Spectrum Handoff Using Cooperative Cognitive User	April 2022	2581-9429	International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

38.	Dhamodharan B, Jayasurya R, Aravinth bala S, Kavin N, Rathanasabhpathy G	NA	Enhanced Automated Teller Machine Using GSM	Feb 2022	2349-3585	International journal for Research and Development in Technology
39.	Prabakar.SA Sanjai Kumar.K.M , Yuhendran.G , Praveen Santhoshkumar.G	NA	IoT Based Home Security System Using Microcontroller	March 22	2583-1976	Scientific Hub of Applied Research in Engineering & Information Technology
40.	E. K. ArulKarthick , R.Sanjai , B. Vignesh , A. Rajeshwaran , M. Navaneethan	NA	Improved Security Of Hidden Data Based On Steganography Using ECC Method	March 22	2583-1976	Scientific Hub of Applied Research in Engineering & Information Technology
41.	Mr.M.Srinevasan, Poornachandran S, Ravinath D, Santhosh P, Tamilselvan D,	NA	Smart Water Tank Monitoring System Using Node Mcu With Android Application	March 22	2321-2004	International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)
42.	A Priyanka, C N Marimuthu	NA	High-Speed Area-Efficient VLSI Design Of Three-Operand Binary Adder	February 22	2319-8753	International Journal of Innovative Research in Science, Engineering and Technology
43.	A Priyanga, C N Marimuthu	NA	High-Speed Area-Efficient VLSI Design Of Three-Operand Binary Adder	February 2022	2319-8753	International Journal of Innovative Research in Science, Engineering and Technology
44.	A Priyanga, C N Marimuthu	NA	Binary Vedic Multiplication Using Carry Save Adder CS3A Based On Modified Approximate Three Operand Adder	May 1	2347-7180	Dogo Rangsang Research Journal

45.	AdlenePriyatharisini J,Kavitha.S	NA	Analysis And Design Of Fir Filter Using Modified Carry Look Ahead Adder Based On Decimal Fpga Logic Block Architectures	May 2022	2347-7180	Dogo Rangsang Research Journal
46.	N.Subharathna K Sharmilee	NA	Leakage Power Reduction Technique For Network Routing Using Memristor Based TCAM	May 2022	2347-7180	Dogo Rangsang Research Journal
47.	M.Pavithra R.Murugasami	NA	Design Of Hybird Full Adder Topology Using Modified Triplet Logic	May 2022	2347-7180	Dogo Rangsang Research Journal
48.	M.Pavithra R.Murugasami	NA	Low Power Multiplier Design Using Hybrid Full Adder	February 22	2319-8753	International Journal of Innovative Research in Science, Engineering and Technology
49.	M Karthick Saran, Santhosh S, Yogeshwaran R, R.Murugasami	NA	EV Iot An Intelligent Automation System For Electric Vehicle Charging Station	May 2022	2348-2079	International Journal of Intellectual Advancements and Research in Engineering Computations
50.	Dr.D Arulanantham, Dineshkumar K, Gowrishankar K, Imaya varma J, Mathiyalagan S ,	NA	Wormhole Intrusion Detection And Prevention Using MCRP In WSN	Jun-22	2319-8753	International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET), Volume 11 ,Issue 6.
51.	G Ramani, S Dinesh Kumar, R Divyarani, D Mathivanan, S Premnath	NA	Smart Travelers App Using Flutter	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
52.	G Ramani, M Saminathan, M Gokul, K Sarweswaran	NA	Zero-Voltage-Switching Single-Phase Full-Bridge Inverter With Active Power Decoupling	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)

53.	P Jamuna, P Abishek, S Balakumaran, R Manikandan, R Srinithi	NA	Smart Solar Inverter For Farm Shed	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
54.	P Jamuna, M Dheenadhayalan, A K Gokul, L Mohana Sundhar, J Sowntharraj	NA	Design And Analysis Of Regenerative Braking In Electric Vehicles Using Ann Algorithm	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
55.	M Prabu, R Sharmila, C Manoranjani, E Poornima	NA	Design And Implementation Of Leakage Current Detector In Substation Transformer Bushings	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
56.	M Prabu I, M Karthikeyan, R Kaviarasu, M Mohankumar, A Sabarinath	NA	Design And Implementation Of Electric Vehicle Fast-Charging Station Combined PV Generator And Energy Storage	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
57.	S Prabhakaran, K Sathish, R Hari Haran, G Karthikeyan, R Yogeshwaran	NA	IoT Integrated Air Quality Monitoring And Controlling Using Znnaoh Chemical Bank	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
58.	B Ramraj, E Aruna, A Divya, S Deepankumar, P I Neelakanda Pillai	NA	Energy Efficient Smart Metering System Using IoT And GSM	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
59.	B Ramraj, M Hariharan, S Praveen kumar, M Sadhasivam, Shibinkoshy	NA	IoT Based Automatic Vehicle Accident Detection And Rescue System	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
60.	B Karthikprabu, R Chandraprakash, V P Navin, P Sujith	NA	IoT Based Smart Irrigation System For Barren Land	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)

61.	C Pratheeba, M Bharanidharan, V Harishvishnu, R Kavinkumar, M Vasimabbas	NA	Smart Wheelchair Using Iot For Physically Challenged People	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
62.	C Pratheeba, S Manojkumar, M Megala, S Poomathi, M Indhumathi	NA	Human Life Safety System With Electrical Information By Using Iot	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
63.	R Vijayalakshmi , S Arul Prakash, T Sai Ram , J Samuel , D Sarun	NA	Development Of Advanced And Secured ATM Machine Surveillance System	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
64.	V Arun kumar, A Deepak Arvinth, S Dhanabal , C Gokul , S Gokulraja	NA	Radio Frequency Based Location Data Transmission System In Remote Areas Without Mobile Network Communication	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
65.	T Jayakumar, D Manicka Vasagam, S Mousik Shankar, M Rooban sankar, D Yuvarajhan	NA	Industrial Transformer Monitoring And Controlling Using Iot	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
66.	T Jayakumar, G Dhivya, M Gobika, A Kalaikumar, M Jothishankarraj	NA	Pic Controller Based Load Response For Wind And Solar Integration To Improve Power System Reliability	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
67.	S Elango , B Gokul, S Jayaram, M Ganesh, S Gokul	NA	Design Of Photovoltaic Based Dvr For Power Quality Improvement Using IOT	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
68.	P Krishnagandhi1, S P Madhuppranesh, K Selvakumar, R R Pranav Rakul, S Selvakamaleshwar	NA	Smart Foldable Blind Stick For Visually Impaired Person	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)

69.	K Sathyasree, T Dhiyanesh, S Sneka, M Harini, L Kavini	NA	Bluetooth Car Control For Physical Challenged Person And Accident Prevention Using Arduino	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
70.	V Ravichandran, S Dhineshkumar, K Harini, A Praveenkumar, E Vinothraj	NA	IoT Enabled Floatable Boat For Robot With Waterbody Quality Monitoring And Chemical Neutralization System	2021-22	ISSN [ONLINE]: 2395-1052	International Journal for Science and Advance Research in Technology (IJSART)
71.	K P Suresh, R Senthilkumar, S Saravanan, M Suresh, and P Jamuna	Challenges and Opportunities for Predictive Maintenance of Solar Plants	Na	2021-22	ISBN: 978-1-032-06426-0	Taylor & Francis Group
72.	KEERTHANA . S Dr.E.K.VELLINGIRIRAJ	NA	Erp Software For Traders	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
73.	RAVEENTHIRAN. S Mr.R. NAVIN KUMAR	NA	Efficient Classification Of Brain Tumors Images Using Neural Network Technique	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
74.	SARATH KUMAR. R Mrs.K.E.ESWARI	NA	Deep Learning Prediction Of Adverse Drug Reaction Analysis Using Artificial Neural Network Model	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
75.	SAVITHA.G Dr.E.K.VELLINGIRIRAJ	NA	Phishing Page And Malicious Url Detection Via Support Vector Machine Using Page Layout Feature	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
76.	THASLEEMA NASREEN.D Dr.E.K.VELLINGIRIRAJ	NA	Efficient Auditing Scheme For Secure Data Storage In Fog-To-Cloud Computing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT

77.	MOHAMED ALI JINNA .M Dr.E.K.VELLINGIRIRAJ	NA	Identification Of Covid-19 Future Forecasting	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
78.	SANMUGA PRIYA.G Dr.E.K.VELLINGIRIRAJ	NA	Live Social Distance Detection Using Deep Learning Model	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
79.	DHARMARAJ.R Mr.S.SAMBASIVAM	NA	Automatic Movable Arm Robot Using Arduino	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
80.	NANDHINI.N Mr.S.SAMBASIVAM	NA	Market Basket Analysis	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
81.	SANTHOSH KUMAR.V Mr.S.SAMBASIVAM	NA	Significant Permission Identification For Android Malware Detection	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
82.	SURIYA SUGAN.S Mr.S.SAMBASIVAM	NA	Reduced Energy Consumption Of Data Transmission For Tcp Download/Uploads	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
83.	BALAJI .SMrs.K.E.ESWARI	NA	Seperable And Revisible Data Hiding Using Triple Encryption Standard In Cloud Computing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
84.	DHIVYAPRIYA.K Mrs.K.E.ESWARI	NA	Adaptive Coal Classification Using Centroid Contour Distance Object Recognition Method Using Deep Learning	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
85.	NAVEENCHANDAR. U Mrs.K.E.ESWARI	NA	Improve Workflow Schudling Technique Using Semo In Cloud Computing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
86.	SEDHU.M Mrs.K.E.ESWARI	NA	Eye Pupil Movement Based On Cursor Control Mechanism Using Image Processing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
87.	ARUNKUMAR.S Mr.C.MANI	NA	Time Series Analysis And Forecasting Of Air Pollution Particulate Matter Using Sarima And Svm Approach	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
88.	MEHALA.C Mr.C.MANI	NA	A Lion Optimization Based K-Prototype Clustering Algorithm For Mixed Data	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT

89.	USHANANTHINI.D Mr.C.MANI	NA	An Effective Alerting System Of Sewage Monitoring To Secure Humans By Identifying The Toxic Gases	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
90.	KIRUBAA.V Mr.C.MANI	NA	Attendance Management System By Using Face Recognition	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
91.	DHANALAKSHMI.R Ms.N.ZAHIRA JAHAN	NA	Prediction Of Environmental Pollution Using Neural Network	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
92.	MADESHWARAN.S Ms.N.ZAHIRA JAHAN	NA	Software Vulnerability Classification Model Using Neural Network	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
93.	VIGNESHKUMAR.S Ms.N.ZAHIRA JAHAN	NA	Heart Disease Identification Using Machine Learning Methodologies	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
94.	VIJAY.S Ms.N.ZAHIRA JAHAN	NA	A Proficient Privacy Protection Method For Cloud Computing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
95.	MANIKANDAN.R Mr.R. NAVIN KUMAR	NA	Detection And Classification Of Fruit Diseases Using Image Processing	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
96.	SNEHA.S Mr.R. NAVIN KUMAR	NA	Multi-Strategy Sentiment Analysis Of Consumer Reviews With Partial Phrase Matching	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
97.	SUJITHKUMAR.S Mr.R. NAVIN KUMAR	NA	Data Analysis Of Consumer Complaints In Banking Industry Using Hybrid Clustering And Sentiment Analysis	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT
98.	EMAYAVARMAN.V Mr.R. NAVIN KUMAR	NA	Arma Based Crop Yield Prediction Using Temperature And Rainfall Parameters With Ground Water Level Classification	2021-22	ISSN: 2394-2231	International Journal Of Computer Techniques - IJCT

99.	Dr V Manimegalai	NA	An Empirical Study On Job Satisfaction Of Employees With Special Reference To Ponmani Industry, Erode	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
100.	Dr V Manimegalai	NA	A Study On Employees Job Satisfaction In Prabha Garments Private Limited, Tiruppur	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
101.	Dr V Manimegalai	NA	An Empirical Study On Impact Of Social Media Marketing On Consumer Buying Behavior With Reference To Erode District	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
102.	Dr V Manimegalai	NA	A Study On Customers Satisfaction Towards TVS Motors With Special Reference To Erode	2021-22	ISSN: 2582-7219	International Journal Of Multidisciplinary Research In Science, Engineering and Technology
103.	Dr V Manimegalai	NA	A Study On Employee Absenteeism With Reference To Neptune Automation And Solution -Erode	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
104.	Dr K Parthiban	NA	A Study On Stress Management For Employees In L&T Infotech At Chennai	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology

105.	Dr K Parthiban	NA	A Study On Employee Satisfaction Towards Best Water Solution With Reference To Erode	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
106.	Dr K Parthiban	NA	A Study On Employee Opinion About Primary Facilities For Safety At Salem Cooperative Sugar Mills Ltd With Reference To Mohanur, Namakkal	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
107.	Dr K Parthiban	NA	A Study On Employee Conflict Towards Organizational Change In Podaran Foods Pvt. Ltd	2021-22	ISSN: 2582-7219	International Journal Of Multidisciplinary Research In Science, Engineering and Technology
108.	Dr K Parthiban	NA	A Study On Employee Welfare Pertaining To Satisfaction In Akshera Paper Mills With Reference To Sathyamangalam	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
109.	K Arulini	NA	A Study Of Financial Performance Analysis With Reference To Neptune Automation And Solution, Erode	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
110.	K Arulini	NA	A Study On Employee Engagement With Reference To Neptune Automation And Solution, Erode	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management

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122.	J Tamilarasu	NA	A Study On Effectiveness Of Empolyees Motivation In Sanma Knit Fashion, Gobichettipalayam	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
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126.	L Jothibas	NA	A Study On Employee Training And Development With Special Reference To Phoenix Fashion Private Limited Company, Tirupur	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
127.	L Jothibas	NA	A Study On Employees Work Life Balance In L&T Infotech	2021-22	ISSN: 2582-7219	International Journal Of Multidisciplinary Research In Science, Engineering and Technology
128.	L Jothibas	NA	A Study On Stress Management For Employees In Infratex At Perundurai	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
129.	K Nandhini	NA	A Study On Employee Absenteeism In Saint Gobin Private Limited Erode	2021-22	e-ISSN: 2319-8753, p-ISSN: 2320-6710	International Journal of Innovative Research in Science, Engineering and Technology
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132.	K Nandhini	NA	A Study On Work Life Balance Among Employees In SCM Textile Processing Mill PVT Ltd	2021-22	ISSN: 2395-7639	International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management
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134.	K Nandhini	NA	A Study On Employee Welfare Measures With Special Reference To Kousic & Co	2021-22	ISSN: 2582-7219	International Journal Of Multidisciplinary Research In Science, Engineering and Technology

AUTOMATIC MEDICINE ANNOUNCEMENT SYSTEM

Dr P Sukumar, Abarna K, Kaviya T , Ramya R

Dr P Sukumar Professor, Department of BioMedical Engineering

Nandha Engineering College, Erode.

Abarna K Department of BioMedical Engineering & Nandha Engineering College, Erode.

Kaviya T Department of BioMedical Engineering & Nandha Engineering College, Erode.

Ramya R Department of BioMedical Engineering & Nandha Engineering College, Erode.

ABSTRACT: Automatic Medicine Announcement System is a model that is useful for medication reminder and monitoring. This system is useful for the physically challenged people, patients and deaf, dumb people. It consists of 16F877A PIC Microcontroller in which program is dumped for overall process, and also IOT Module, Relay setup, LCD, 7805 regulators, sensor like heartbeat, glucose and temperature sensor not only LCD, but also AMR voice controller is available for reminding patients through loud speaker, IR sensor is used for detection of medicine taken by patient. During these days, due to mental stress people forget to take medicine at right time. So, to overcome these problems, the automatic medicine system has been designed at lower cost.

KEYWORDS: PIC 16F877A; IOT Module; 7805 Regulator; LCD Display; AMR Voice controller

1. INTRODUCTION

Large numbers of people are suffering from various kinds of diseases and disabilities. Most of the people suffer a lot in taking medicine at right time. Before, they are cared and monitored by doctors and care takers. Taking care of patients is a challenging one now a day.

Payments should be provided to those who take care the patients. So, these seem to be a disadvantage one. Problems that occur such as 1) Intake of irregular medicine due to busy schedule. 2) Complications in taking large number of medicines at a time. 3) Lack of knowledge about proper use of medicines. 4) Adverse drug effects of taking wrong medicines. The above problems occur to everyone due to no adherence of people. Then it is essential to take correct medicine for good health. As there are some in-home devices to care the patients, the older people face some difficulties. In order to avoid these situations, Automatic Medicine Announcement system has been designed to avoid patient taking over dosage of medicines. The most advantage of AMAS is 1) available at affordable cost. 2) Easy usage for elder peoples.

LITERATURE SURVEY

1. " Automatic Medicine Dispensing System " S.R. Bhagya Shree, P. Chandra Shekar, A. Arjun, G.R. Manoj and R.S. Raj. In olden days, the family of the patient will take care them . During these days, people like to live in nuclear families where there are no one present to take care of aged people and patients due to their busy working schedule.


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Nandha Engineering College
(Autonomous)
Erode - 638 052.

AUTOMATIC PATIENT RESPIRATION AND TEMPERATURE MONITORING IN TELE HEALTH

Mr.A.Amarnath prabhakaran, Kishore R, Narmathaa S, Pavithra S,

Narmathaa S Department of Biomedical Engineering & Nandha Engineering College, Erode.

Kishore R Department of Biomedical Engineering & Nandha Engineering College, Erode.

Pavithra S Department of Biomedical Engineering & Nandha Engineering College, Erode.

ABSTRACT: This Project consists of sensor which measures the respiration and body temperature of a patient which is control by the microcontroller.Both the readings are displayed in LCD monitor.Internet of things(IOT) is used to transmit the measured the data from the remote location.The respiration sensor measures the heartbeat for specific interval of time and estimate beats per minute.The temperature sensor measures the patient body temperature.Both the data are monitor in MIT inverter app using IOT module.The body temperature can be controlled by peltier blood warmer and the respiration can be controlled by oxygen pump. The world is filled with internet system.In this system is real time application of medical and healthcare system.It has low power consumption through the stability of its IOT is still enhanced.In this pandemic situation,this application for very useful to both patient and doctor.

KEYWORDS: IOT, Temperature sensor,Respiration sensor, Peltier device.

1. INTRODUCTION:

This design describes the design of a veritably low cost remote case monitoring system which measures respiration rate and body temperature of a case and sends the data to a remote end.where the

data will be displayed and croaker or croaker will be suitable to examine him/her.This device will be important demanded during exigency period or for saving time of both case and doctor.both the temperature and respiration of the case can be controlled over remotely.This is help the croakers and family members to keep track the health condition of their loved formerly in this case of abnormality in the health condition.The case data can be penetrated ant where and anytime around the world.All the parameter controlled over the IOT module.It'll be useful for the croaker and case The patient respiration and temperature examiner using IOT module.

2. BLOCK DIAGRAM:

Micro controller used here is At mega 328p is supported with a full suite of program and system development tools.The liquid crystal display screen is an electronic display module and find a wide range of application.a 16X2 LCD display is very basic module and is very commonly used in various devices and circuit.The power supply circuits built using filters,rectifiers,and then voltage regulators. A transformer is a device which transform high voltage AC into low voltage AC or vice versa. The

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Erode - 638 052.

CLASSIFICATION OF NORMAL AND ATRIAL FIBRILLATION ECG SIGNAL USING LONG SHORT TERM MEMORY NETWORK IN DEEP LEARNING

Suresh K^{*1}, Indumathi O D^{*2}, Nivethitha M^{*3}

^{*1,2}Final Year UG Student, Batch 2018-2022, Department Of Biomedical Engineering, Nandha Engineering College, Erode, Tamil Nadu, India.

^{*3}Assistant Professor, Department Of Biomedical Engineering, Nandha Engineering College, Erode, Tamil Nadu, India.

ABSTRACT

Atrial fibrillation is a cardiac disorder usually identified by rapid heart rhythm and irregular beating of a heart which leads to an increased risk of heart failure and cardiac stroke. In this paper, we propose the classification of normal and abnormal ECG signals using a Recurrent Neural Network and Long Short-Term Memory Network in Deep Learning. PhysioNet Challenge 2017 dataset is used for training and testing Neural Network. We train signals by applying various filters to attain high prediction accuracy. The total accuracy achieved by the method we used is 91% which is greater than the previous research/methods used to classify Atrial fibrillation signals.

Keywords: Atrial Fibrillation, Electrocardiogram, Recurrent Neural Network, Deep Learning, Long Short Term Memory.

I. INTRODUCTION

This Atrial fibrillation (AF) is one of the most prevalent cardiac arrhythmias, and it is expected to become more common in the future. In adults over the age of 40, the lifetime chance of getting AF is estimated to be 25% [1]. Atrial fibrillation is a heart ailment in which the heart's rhythm is disrupted by the erratic firing of impulses from the sinoatrial node. Other random electrical impulses in the atria normally override the node. Fibrillation is a word that defines the partial contraction of the cardiac muscles at a high rate, approximately 400 times a minute. Fibrillation emerges as a result of the irregular propagation of impulses from the sinoatrial node. This means that it's hard for a human with AF to predict their heart rate or when their heart muscles will contract and relax, implying that their heart rate is exceedingly unpredictable [2]. An ECG is still required to establish the diagnosis of AF, even if an erratic pulse points to it. Because AF can be paroxysmal, a negative ECG does not rule out a pulse-based diagnosis of AF. A single lead rhythm strip or 12 lead ECG capturing 30s of AF should be used to diagnose patients with suspected AF [3]. Here we are using the data from Physionet Challenge 2017 dataset and an effective AF detection method based on a bi-directional double-layer LSTM architecture.

II. PROBLEM IDENTIFICATION

There is a method in deep learning using Convolution Neural Network (CNN) in which the ECG signal is categorized into normal and abnormal signals. CNN can use only in the spatial data input and can only process in the feed-forward neural method and it only considers the current input [12]. So to overcome this problem we have designed a Recurrent Neural Network in the same deep learning model to categorize the ECG signal into normal and abnormal signals.

III. EXPERIMENTAL METHOD

Atrial fibrillation signal is classified by using a type of Recurrent Neural Network (RNN) called the Long Short Term Memory (LSTM) network. Pre-processed and feature extracted signal is used to train the LSTM network. Recurrent neural networks (RNNs) are dynamic systems with an internal state at each classification time step. Circular connections between higher layer and lower layer neurons, as well as self-feedback connections, are optional [4]

SMART BREATH BAG UNIT AND VITAL SIGN MODULE**Dr. Sukumar P^{*1}, Manojbharathi M^{*2}, Pragalya S^{*3}, Dharanitharan M^{*4},
Maheswaran N^{*5}**

^{*1}Head Of The Department, Biomedical Engineering, Nandha Engineering College,
Erode, Tamil Nadu, India.

^{*2,3,4,5}Final Year Batch 2018-2022, Department Of Biomedical Engineering, Nandha Engineering
College, Erode, Tamil Nadu, India.

ABSTRACT

Basically, human lungs are used to reverse pressure normally generated by contraction motion of the diaphragm to suck the air for breathing from the environment. To inflate the lungs by pumping type motion, contradictory motion is used. Normally 10 breathes per minute must be generated by the ventilator. Ventilator must have the ability to adjust the air volume pushed into lungs while assisted breathing. Apart from this the ventilator must be able to monitoring the patient monitor parameters like Temperature, Peripheral oxygen saturation (SpO₂), Pulse rate and Electrocardiogram. The ventilator we design and develop using Microcontroller and Wi-Fi module encompasses all these requirements to develop a reliable yet affordable Emergency ventilator to help in times of Emergency.


Keywords: Ambu Bag, ECG, Pulse Rate, Temperature, Spo₂, Firebase.

I. INTRODUCTION

The introduction should be typed in Times New with the pandemic caused by the corona virus disease 2019 outbreak as spurred researches around the world turn to an open source emergency type ventilator in response lighten the demand for these life saving devices. The patient can difficult to breathe as the virus infects the upper or lower part of the respiratory tract. An artificially manual breath unit of ventilator mechanically helps to pump oxygen into body. The air flows through the tube that goes mouth and down wind pipe. A ventilator may breathe out or it may do it or own. We use silicon ventilator bag coupled driven by wiper motor with one side worm gear mechanism to push the ventilator. we use relay switch because a variable potentiometer control to adjust the breath length and the beats per minute value. Here, we use a wiper motor or air compressor to squeeze the bag valve mask. The motor's speed and the air compression speed controls the breathing rate and the plunger controls the level of Bag valve mask compression. Our system also includes Peripheral oxygen saturation, Pulse rate, Temperature sensor along with sensitive Electrocardiogram sensor to monitor the necessary vitals of the patient and display on a mini-LCD display. Also, an emergency buzzer is included in the system to allot as soon as any anomaly is detected. The attributes of these initiative for their fast deployment, scalability and compact size low cost. The device is meant to be used only for short period of time to a few hours. It came be operated manually by some with no medical experience.

The main goal of this project and development work is together design ventilator and vital sign module, Fabricate and integrate an artificially manual breath unit bag-based emergency ventilator device for clinical testing and other emergency situation.

- 1) Mechanical design, assembly, integration and testing of the AMBU actuation mechanism.
- 2) Specification, integration of wiper motor and drive system for the compression mechanism.
- 3) Source code of controls and Instrumentation user interface safety system.



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Nandha Engineering College
(Autonomous)
Erode 638 052.

BACKUP POWER GENERATION BY CARBONIZING THE MEDICAL WASTE

Mrs. M. Nivethitha, Malathi M, Indhirani A, Gobiga V, Nanthini T

Malathi M Department of Biomedical Engineering & Nandha Engineering College, Erode.

Indhirani A Department of Biomedical Engineering & Nandha Engineering College, Erode.

Gobiga V Department of Biomedical Engineering & Nandha Engineering College, Erode.

Nanthini T Department of Biomedical Engineering & Nandha Engineering College, Erode.

ABSTRACT: The ongoing COVID-19 disease significantly effects not only the human health but also the wealth of the country's economy, and this pandemic is contributing with the increased usage of face mask. People's are using use and throw mask for a particular time period in a day and that are not disposed in a proper manner. So, we planned to make an incinerator for the proper disposal of mask. In this project the disposal of waste (i.e, Surgical mask, Gloves) method is done in the proper manner. The incineration is the common method of waste disposal, here the biomedical waste like masks are disposed by proper incineration the automatic process of mask disposal is processed by means of return signal given through the waste heat energy produced during the incineration process is converted into electrical energy by means of peltier devices.

KEYWORDS: Mask, Incineration, Heat, Electricity, Peltier device.

1. INTRODUCTION:

The aim of the mission is to cover all the rural and urban areas of the country to this present this country as an ideal country before the world. One of the best methods of achieving this mission is by providing proper cleaning of waste and providing

hygienic cities in India. Major objective of this project is to solve the problem of mask disposal by installing low cost incinerators and converting waste heat to useful energy. It provides a hygienic disposal of waste which is due to reduced environmental pollution due to non-degradable waste. Incineration of waste materials converts the waste into flue gas and heat. Incineration has greater advantages in disposing clinical waste and hazardous waste which has to be destroyed at higher temperature. There are different waste methods are followed. In that incineration is one of the hygienic methods of waste disposal. In landfill, the volume can be reduced approximately by 70%. Incinerator is a heater for consuming waste. Incinerators reduce the solid mass of the original waste by 80 – 85% and volume by 95 – 96%.

2. EXISTING WORK:

In existing system, the waste disposal is of semi-automatic type in which the heating process is started by manual process. In semi-automatic system there is no monitoring process. The efficiency of system is reduced due to absence of additional process. The heat produced during incineration is also wasted by not proper usage. The operating power for the machine is also provided separately. The waste administration framework

SMART AUDIO GLOVES FOR DEAF AND DUMB PEOPLE

Mrs. E. Madura, Kavin Kumar P, Mohana Prasath B, Subash M, Vignesh S.

Kavin Kumar P - Department of Biomedical Engineering & Nandha Engineering College, Erode.

Mohana Prasath B - Department of Biomedical Engineering & Nandha Engineering College, Erode.

Subash M - Department of Biomedical Engineering & Nandha Engineering College, Erode.

Vignesh S - Department of Biomedical Engineering & Nandha Engineering College, Erode.

ABSTRACT: Deaf-Mute people at some stage in the globe use gesture-based communication to talk with others, this can be possible for the people WHO have tough distinctive coaching. Everyday voters face bother in understanding the linguistic communication. To defeat these continuous problems, this framework is made. At no matter purpose the framework detects any gesture-based communication, it plays comparison recorded voice. This diminishes the correspondence hole among customary people and allows a free flow of interactions between public voters. This model contains of 3 modules, they are detecting unit, handling unit and voice stockpiling unit. This endeavor utilizes a flex device and WTV-SR voice recorder.

KEYWORDS: linguistic communication, Gesture based mostly Communication, Flex device, Recorded Voice.

1. INTRODUCTION:

In this paper we developed a Sign Language Glove which will support those people who are suffering for any kind of speech defect to communicate through signal. Everyday people face trouble in understanding the sign language. To defeat this continuous problem, this framework is created. At whatever point the framework detects any gesture-based communication, it plays comparing recorded voice. This diminishes the correspondence hole

among customary individuals and enables a free flow of interactions between public citizens. This model comprises of three modules, they are detecting unit, handling unit and voice stockpiling unit. This undertaking utilizes a flex sensor and WTV-SR voice recorder. The flex sensor reacts to signals. The Accelerometer is used to check the hand movements. This strategy is increasingly exact available development and various dialects can be introduced without adjusting the code. Basis of this idea is a primary focus on the mobility of this system for day to day use. This model can be used by the people of all age groups and people can easily communicate between the normal individuals. They can also acquire new jobs for their lifestyle to run. There are so many government opportunities for deaf-mute people to work more effectively and not to sit ideal. By using this model, they can be normal as other individuals and come up in life by using their knowledge, earn and start a business too.

2. EXISTING WORK:

In existing system, there is no circuit is used to declare their thoughts of physically challenged peoples. And gesture-based papers or circuit are not available in markets. In existing method is sign language, it could not understand all people for communication. There after a circuit is used to design predetermined postures are captured image with deaf and dumb peoples sign language

Nanoscale synthesis and characterization of zinc oxide nanoparticles and investigation of its properties with antibacterial and antifungal activity

Dr. Sukumar P^{*1}, Mohan K.S^{*2}, Aswini A K^{*3}, Narmadha E^{*4},
Manicka Praveen J^{*5}, Bhuvaneshwaran S^{*6}

^{*1}Professor & Head, Department of Biomedical Engineering, Nandha Engineering College, Tamil Nadu, India

^{*2}Assistant Professor, Department of Physics, Nandha Engineering College, Tamil Nadu, India

^{*3,4,5,6}Student, Department of Biomedical Engineering, Nandha Engineering College, Tamil Nadu, India

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ABSTRACT

In the proposed work, a facile convenient and meagre method of sol-gel assisted hydrothermal method was used for the synthesis of pure zinc oxide nanoparticles (ZnO NPs). The structural and optical morphology are inspected using various techniques of the synthesized nanoparticles and at different molar concentrations of 1, 2 and 3 moles respectively. The X-Ray Diffraction (XRD) pattern revealed the hexagonal crystal structure for pure ZnO nanoparticles and the crystal size is noted to be increasing with the increase in concentration. The Scanning Electron Microscope (SEM) illustrated the crystalline growth being proportional to the concentration of nanoparticles. The Fourier Transform Infrared Spectroscopy (FTIR) confirmed the presence of various functional groups such as O-H, C-O, -C-O-C, C-H and C-N groups. The elemental composition studied using Energy- Dispersive X-Ray Spectroscopy (EDX) revealed the presence of Zn and O particles and the purity of ZnO NPs were noted. Optical characterization of the sample using UV-Vis-NIR Spectroscopy revealed the band gap (E_g) being decreased from 5.91eV to 5.11eV with the increase in molar concentration of ZnO NPs. Anti- bacterial studies were carried out at pre- defined concentration (25 ml to 100 ml) using gram positive and gram-negative bacteria to test the potential of synthesized ZnO NPs as inhibitory agents.

Key words: Zinc Oxide, Nanoparticles, Antimicrobial activity, sol-gel, chemical synthesis, NPs

I. INTRODUCTION

Clearly, nanoscience and nanotechnologies are not contemporary in the present years. Earlier decade Chemists were involved in making large molecule polymers made up of nanoscale subunits and nanotechnologies were employed in creating the tiny features on a computer chip for the past 30 years. Normally, nanotechnology deals with the particles which are having the size in the range of about 1-100nm. Recently many researchers have been actively working on various developments over the decades. This has led a way for nanotechnologies to find place in a wide variety of applications such as cosmetics, drug delivery, biosensors, textile and various other biomedical applications. Metal oxide nanostructures have caught the attention of various researchers and is being considered in many areas of technology. among all the metal oxides discovered so far, zinc oxide (ZnO) has received much scrutiny in recent times. zinc oxide nanoparticles are currently in the prominent positions of research owing to their peculiar properties and ample applications. Zinc oxide (ZnO) nanoparticles are the ones having a diameter of about 100nm. These nanoparticles are found to possess high catalytic activity and their surface area is at maximum. They are present in the nature as both powders and dispersions. In the periodic table, zinc is at block D- period 4 element and oxygen are at block P- period 2 elements. These nanoparticles are found to exhibit various properties like optoelectronic properties which ensures great transparency, increased electron mobility and broad band gap. At room temperature,

Synthesis and Characterization of Ferrous Oxide Nano particles for Antimicrobial Activity

Madura E^{*1}, Mohan K.S^{*2}, Sindhu DB^{*3}, NishmaRoshini N^{*4},
Sharmila S^{*5}, Sharmila J^{*6}

^{*1}Assistant Professor, Department of Biomedical Engineering, Nandha Engineering College, Tamilnadu, India

^{*2}Assistant Professor, Department of Physics, Nandha Engineering College, Tamilnadu, India

^{*3*}^{*4*}^{*5*}^{*6}Student, Department of Biomedical Engineering, Nandha Engineering College, Tamilnadu, India

Submitted: 15-04-2022

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ABSTRACT

In this project, a facile convenient and Frugal method of sol-gel assisted hydrothermal method was used for the synthesis of pure FeO NPs. The structural and optical morphology are inspected using various techniques of the synthesized nanoparticles and at different molar concentrations of 1, 2 and 3 moles respectively. The crystallographic morphology of the synthesized particles was studied via X-ray diffraction which revealed Rhombohedral structure of the, pure FeO NPs and the crystal size is noted to be increasing with the increase in concentration. The Scanning Electron Microscope (SEM) demonstrates the crystalline growth being proportional to the concentration of nanoparticles. The Fourier Transform Infrared Spectroscopy (FTIR) confirmed the presence of various functional groups such as O-H, C-O, C=O, and C-N groups. The elemental composition studied using Energy-Dispersive X-Ray Spectroscopy (EDX) revealed the presence of Fe and O particles and the purity of FeO NPs were noted. Optical characterization of the sample using UV-Vis-NIR Spectroscopy revealed the band gap (E) being decreased from 6.2eV to 4.7eV with the increase in molar concentration of FeO NPs. Anti-Bactericidal of the NPs was assessed at pre-defined concentrations (25 and 100 µg /ml) against Gram +ve bacteria Staphylococcus aureus, Gram -ve bacteria Fungi Candida and Escherichia coli. Bacterial strains, which demonstrate the potential of NPs. The goal of this research was to see how the structure of the synthesized NPs affected their ability to guard against harmful bacterial activities.

Key words: bacteria, sol-gel assisted hydrothermal method, ferrous oxide, nanoparticles.

I. INTRODUCTION

Recent study has focused on nanoparticles, which are a dimension midway between bulk materials and atoms/molecules. In recent years, the fields of nanoscience and nanotechnology have resulted in the manufacture of many types of antibacterial nanoparticles. Antimicrobial activity, ferro fluids, magnetic storage media, magnetic resonance imaging, cancer treatments, cell sorting, and targeted drug administration are just a few of the scientific and technological applications of ferrous oxide nanoparticles. Because of their biocompatibility and magnetic characteristics, ferrous oxide nanoparticles have also been frequently used in biomedical research. Sol-gel, hydrothermal, co-precipitation surfactant mediated/template synthesis, micro emulsion, electrochemical, and laser pyrolysis are all used to make these FeO nanoparticles. The advent of novel bacterium strains resistant to currently available antibiotics has become a serious public health concern, thus there's a strong incentive to find new bactericides from various sources. Nanotechnology advancements have given an interesting method for generating alternative antibacterial medications. Despite the fact that nanoparticles have long been known to affect a wide range of microorganisms, nothing is known about iron oxide nanoparticles' toxicity to these bacteria. The current study attempted to synthesise ferrous-oxide nanoparticles using the sol-gel method, and these particles were characterised using various techniques, as well as their antibacterial activity against human pathogenic Gram-positive bacteria, with the goal of

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Experimental Investigation on Fiber Reinforced Concrete With Replacement of Cement By Fly Ash

Aravind V¹, Abinaya S², Venkatesh N², Karthikeyan M², Mukilan S²

¹Assistant Professor, Department of Civil Engineering, Nandha Engineering College, Perundurai, Tamil Nadu, India

²UG Students, Department of Civil Engineering, Nandha Engineering College, Perundurai, Tamil Nadu, India

Abstract - According to the recent statistics of environmental pollution that owed from the construction industries, the cement industry purposely plays a major role over the all. In order to curtail the demand placed over the industry, the residual substance, "Fly Ash" is chosen in partial replacement of cement by keeping the record of tests that shows the presence of cementitious material in fly ash. And in order to prevent the shrinkage cracking, the organic fiber notably, "Coir" has been added in the concrete mix in a definite proportion, so it could offer strength against plastic and dry shrinkage. As to bring forth the results of our idea, this paper encompasses the study of influence of fly ash and coconut coir on the compressive strength, split tensile strength, flexural strength of concrete.

Keywords - Fly Ash, Coir, Shrinkage Cracking.

I. INTRODUCTION

Recent survey by the construction blog BIMhow, reported that the construction sector contributes about 23% of air pollution, 50% of the climatic change, 40% of drinking water and 50% of landfill wastes. In order to manipulate the demand on the cement industry and those problems that arise out of the waste disposal, the residue of the coal combustion process, "FLY ASH" has been used widely in the manufacture of fly ash bricks. And now we tend to make a concrete with fly ash as a partial replacement of cement along with the addition of organic fiber to a certain percent. Conventionally, concrete is the compositional mixture of cement, fine aggregate and coarse aggregate.

By technical study, it is clearly stated that the concrete contains fine aggregate and coarse aggregate up to 75% of its total volume. But now, the term fiber reinforced concrete has been used to entitle the concrete that we have made using organic fiber that is coconut fiber, technically called as "Coir Fiber". Here, in this concrete, the fine aggregate is partially replaced with fly ash in different proportions such as 10%, 20%, 30% and coir fiber is added at quantity of 0.3% of cement added in the concrete mix.

II. MATERIAL PROPERTIES

Cement

The cement used for this experiment is Ordinary Portland cement (53Grade), that carries the specific gravity of 3.12kg/m³.

M-Sand

Considering the maintenance of ecological balance and the demand that placed over the river sand, the experiment paved the way for the use of manufactured sand (M-Sand) which has the specific gravity and fineness modulus of 2.65 and 2.75 respectively

Coarse Aggregate

As only the good grade of aggregates can help attain the strength of concrete, the 100% grading of aggregate is done through batching the aggregate passing through 20mm and retained on 12.5mm IS sieves along with following the IS 383 specifications. The specific gravity of coarse aggregate is 2.75.

Water

The quantity of water is the foremost deciding factor for the strength of concrete. Accordingly, the portable water qualified with the IS 456-2007 specifications is used.

Fly Ash

Fly ash is the residue of the coal combustion product which comprises of particulates i.e., the fine particles of burnt fuel that is driven out of coal fired boilers along with the flue gases and so it also gained a name called flue ash. The specific gravity of the fly ash used is 2.2 and fineness modulus of the fly ash is 1.95.

Coir

Coir is the natural fiber extracted from the coconut shell. It is the fibrous substance found in between the hard internal shell and outer coat of coconut. The aspect ratio and the diameter of the fiber is 100 and 0.1mm respectively. As the diameter of the fiber is calculated using screw gauge, the length of the fiber is calculated using the

Aspect Ratio = Length / Diameter

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AN EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF CEMENT BY RHA WITH ADDITION OF ADMIXTURE

M.K. Kamalakkannan¹, Adil Abdul Majeed², V. Jeevankumar³, S. Joshini Samyuktha⁴, K. Kamal⁵

¹Assistant professor, Department of Civil Engineering, Nandha Engineering College, Erode, India.

^{2,3,4,5}B.E, Department of Civil Engineering, Nandha Engineering College, Erode, India.

Abstract - The scope of this project was to determine the usefulness of rice husk ash in the development of economical partial replacement of cement. The cost materials will be decreased by reducing the cement content by using waste material like rice husk ash. The work presents a study on the development of mechanical properties up to 28 days of partial replacement of cement and ordinary concrete with rice husk ash, from a rice paddy milling industry in addition of admixture Conplast SP 430. Trials are conducted to assess the optimum percentages of RHA for partial replacement of cement with various percentages of RHA (0%,10%,20%,30%) water/ cementitious ratio from 0.35 ordinary concrete and water/powder ratio from partial replacement of cement were used to make concrete specimens 7day, 14 day, and 28-day results are compared with those of partial replacement of cement by RHA. The Fresh concrete property of passing ability, filling ability are using slump cone test. The hardened properties of partial replacement of fine aggregate (Cube, Prism, Cylinder) are tested for Compressive strength, Split tensile strength, and Flexural strength.

Key Words: Economical, Rice Husk Ash, Admixture, Replacement, Coarse aggregate.

1. INTRODUCTION

In the growing environmental consciousness at all of especially associated with concrete, and natural resources problems, sustainable development and sustainable construction throughout the global. Building are one of the maximum construction for a significant portion of the green house emission engineering approach to concrete mix design. This requires concrete durability, conservation of material, use of materials, and recycling of concrete. Waste and supplementary, cement, RHA and metakaolin Portland cement. These materials can improves the concrete cracking in mass concrete and are less energy and CO₂ by-products of the rice milling industry. During milling, broken rice and bran and rest of the 22% is received as volatile matter and the balance 25% of the weight is concerned with burning process. The usage of RHA in concrete minimize with the waste disposal problem caused by the rice milling industry is decreases the demand for cement in the construction industry production and lesser the environmental pollution caused in factories.

Hence RHA not only improves the concrete provides economic and environmental benefits. The utilization production in India. This RHA as a partial replacement of cement as it contains around 85%-90% amorphous silica RHA as partial replacement of cement but very little

weight of partial replacement of cement, and no work has been done in replaced cement.

2. MATERIALS IN MIX

Normal strength concrete has compressive strength of up to 20 MPa. The hardening is caused by chemical reaction between water and cement and continues for a long time after the concrete has a sufficient strength for the work intended. Concrete is a mixture of cement, water, sand and gravel or crushed aggregate. The ingredients are ranged as 7 - 15% of cement, 60 - 80% of aggregates, 14 - 18% of water and 2 - 8% of air. By adding the respective percentage of mixtures the normal concrete can be obtained.

Table -1: Materials in conventional mix.

S.NO	MATERIALS	DESCRIPTION
1	Cement	OPC 53 grade
2	Fine aggregate	Manufactured sand
3	Water	Tap water
4	Coarse aggregatesize	20 mm angular type
5	Admixture	Conplast SP 430

Table -2: Materials in conventional concrete mix.

S.NO	MATERIALS	DESCRIPTION
1	Cement	OPC 53 grade repaced with 10%, 20% and 30% of RHA.
2	Fine aggregate	Manufactured sand
3	Water	Tap water
4	Coarse aggregate size	20 mm angular type
5	Admixture	Conplast SP 430



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An Experimental Study On Partial Replacement Of Fine Aggregate By Polyethylene Terephthalate

K.C.Denesh¹, S.Bala Krishna², M.Ramakrishnan², A.Syed Ibrahim², M.Vignesh²

¹Assistant Professor, Department of Civil Engineerings, Nandha Engineering College, Perundurai, Tamil Nadu, India

²UG Students, Department of Civil Engineerings, Nandha Engineering College, Perundurai, Tamil Nadu, India

Abstract - Ecological concerns emerging from over digging of natural sand have prompted different limitations on its extraction. Uncontrolled mining action compounds the circumstance. Consequently genuine mindfulness has been mulled over, must be distinguished as a potential river sand substitution for fine aggregate substitution in concrete. For this audit, using reused material is portrayed as a fine aggregate substitution to natural sand, especially reused Polyethylene Terephthalate (PET). The main objective of this research was to explore the feasibility of using PET as a partial replacement for fine aggregate in M30 grade of concrete. Fine aggregate is partially replaced by PET at 0%, 5%, 10% and 15% were casted in the form of cube specimen, cylinder specimen and prism specimen of 24 each were casted and cured for 28 days for Compressive Strength, Split Tensile Strength and Flexural Strength tests respectively. It is observed that replacement of fine aggregate by PET at 10% improved the compressive strength upto 3.6% along with 7.98% and 22.53% improvement in split tensile and flexural strength.

Keywords- Polyethylene Terephthalate, fine aggregate replacement.

I. INTRODUCTION

In today's age, India just like other countries is now looking for an alternative for conventional aggregates that might be recognized as plastic waste. Thus, the necessities to consolidate recycled materials as a substitution to construction materials are basic to lessen landfill space just as a lack of natural resources. Waste materials increases with expanding population and the majority of these materials are non-degradable. The over removal of non-degradable materials can prompt environmental contamination. To conquer this significant issue, the reuse of non-degradable materials is exceptionally generous. Plastics have become an indivisible and indispensable part of our lives. The measure of plastics consumed every year has been developing consistently.

In India roughly 50 million tons of solid waste is delivered every year. This number becomes about up to 15% consistently. Plastics comprise 12.3% of total waste produced, the greater part of which is from disposed water bottles. The PET can't be discarded by dumping or burning, as they produce uncontrolled fire or pollute the soil and

vegetation. At present, the total recycling capacity in India is around 14.5 million tons, its utilization in concrete mix will prove a superior choice for land fill that, being non-degradable, remains for long years and cause issues before us.

Plastic have low density, high strength, user friendly, fabrication capacities, long life, light weight and low cost attributes are the variables behind such remarkable development. Despite the fact that, plastics have been utilized in enormous and valuable applications, it presents to a consistently increasing sum in the strong waste stream. Polyethylene shapes the biggest division, which is followed by Polyethylene Terephthalate (PET) that represents one of the most well-known plastics in solid urban waste. Concrete is the most broadly utilized construction material on the planet because of its high compressive strength, long service life, and minimal effort.

To limit the pressure over the significance of fine aggregate in the concrete mixes and to cut down the pressure over the disposal crisis of polyethylene terephthalate (PET), is utilized as a partial replacement substance for fine aggregate. We are going to contemplate the properties of polyethylene terephthalate concrete which is partially replaced by polyethylene terephthalate at 4 different rates 0%, 5%, 10% and 15%.

II. MATERIAL PROPERTIES

Cement

The cement used for this experiment is Ordinary Portland cement (53Grade), that carries the specific gravity of 3.12kg/m³.

M-Sand

Because of the mass unavailability of the natural sand, the test owes the route for the utilization of manufactured sand (M-Sand) belongs to Zone - II which has the specific gravity and fineness modulus are 2.73kg/m³ and 2.74 respectively.

Coarse Aggregate

Because of availability of the crushed stone aggregate from the nearby source, they had a noteworthy significance in the constituent of concrete. The good grading of aggregates denotes the strength of concrete so the 100%

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Experimental Study On Partial Replacement Of Cement With GGBS And Addition Polypropylene Fiber

Yeswanth.M, Pavin.T, Vigneshwaran.S, Nataraj.B, Jeevanandham.S

¹Assistant Professor, Department of Civil Engineerings, Nandha Engineering College, Perundurai, Tamil Nadu, India

²UG Students, Department of Civil Engineerings, Nandha Engineering College, Perundurai, Tamil Nadu, India

ABSTRACT: This project work involves an experimental and laboratory study of the Polypropylene fibres with ground granulated blast slag on the mechanical properties of the concrete used in construction. In this experimental study of concrete mixes were prepared individually. Polypropylene fibre of 2.5%, 5%, 7.5%, 10% with GGBS of 0.5% to 0.75%, 1.5% were added to the mixes. After that a comparative analysis has been carried out for conventional concrete to that of the fibre reinforced in relation to their compressive, split tensile and flexural properties. By the experimental work the compressive, split tensile and flexural strengths are proportionally increased both Polypropylene and GGBS. In this project cost analysis is also determined for conventional concrete and fibre reinforced with admixtures individually using experimental test reports. Utilization of alternate cementation materials leads to several possible improvements in the concrete composites also as well as in the overall economy of construction projects. This requirement is drawn the attention of investigators to explore new replacements of in gradients of concrete. Cement with GGBS replacement has emerged as a major alternative to conventional concrete and has rapidly drawn the concrete industry attention due to its cement savings, energy savings, cost savings, environmental and socio economic benefits.

Keywords- Replacement of cement with ggbs and addition polypropylene fiber

INTRODUCTION: Concrete is by far the most widely used construction material today. It is versatile, has desirable engineering properties, can be molded into any shapes and more importantly is produced with cost-effective materials. There is an old saying that broken stone, sand, and cement make good concrete. But the same proportion of broken

stone, sand and cement also make bad concrete. To make good concrete now variety of innovative materials such as fibers, admixtures and construction chemicals, pozzolanas and different concrete making techniques are adopted in present day construction. In recent years, intensive research has resulted in advances and innovation in the technology of fibers such as glass, polypropylene, carbon etc., and more basic knowledge has been gained on the behavior of cement concrete containing these fibers. Concrete containing hydraulic cement, water, aggregate, and discontinuous discrete fibers is called fiber-reinforced concrete. The incorporation of short discrete fibers (steel, polypropylene, glass, carbon) can lead to useful improvements in the mechanical behavior of tension weak concrete. In general Ground slag has been used as a cementations material in concrete since the beginning of the 1900s. This paper focus on a review of various researched related to alternative partial cement replacement materials, specifically Ground Granulated Blast Slag (GGBS). Extending the lifespan of buildings from fifty years to a hundred years. In China, the application of GGBS is mainly as a clinker substitution in blended slag and normal cement production, and as a supplementary cementations material in ready-mixed and site-batched concrete production

II. Material Properties

Cement: The cement used for this experiment is Ordinary Portland cement (53 Grade), that carries the specific gravity of 3.12 kg/m^3 .

M-Sand: Because of the mass unavailability of the natural sand, the test owes the route for the utilization of manufactured sand (M-Sand) belongs to Zone - II which has the specific gravity and fineness modulus are 2.73 kg/m^3 and 2.74 respectively.

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STUDY ON BEHAVIOUR OF ALKALI ACTIVATED HIGH VOLUME FLYASH CONCRETE

M.K.Kamalakaran*¹, S.Dineshkumar*²

*¹Assistant Professor, Department Of Civil Engineering, Nandha Engineering College,
Tamilnadu, India.

*²PG Student, Department Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

ABSTRACT

In today's world the need for replacement of conventional building material in construction industry is highly emphasized. As far as considering first half year of 2020 - 2021, only about 57.93 percent of total fly ash produced in India was utilized. The remaining was disposed by means of landfills which pollute environment. In order to increase the amount of fly ash utilized in construction, various new concepts were discussed throughout the world. Out of which the promising fields are high volume fly ash concrete and geopolymer. Here in this report the works carried out by various researchers throughout the world in the above mentioned fields are discussed. Their work resulted in using of high volume of fly ash in concrete with low shrinkage, low heat evolution during hydration, increased workability, and low density of concrete. The works in geopolymer concrete obtained the results as increased use of fly ash, high strength and acid resistant, similar behaviour to RC elements. Furthermore the methodology will be proposed for the project.

Keywords: Analysis, Concrete, Geopolymer, Building, Cement.

I. INTRODUCTION

1.1 GENERAL

In this paper, the works carried out by various researchers regarding high volume fly ash concrete and geopolymer are discussed. Based on the literature study, the methodology and future work process of the project will be discussed

1.2 INTRODUCTION

Construction industry which is rather growing at rapid phase due to the rapid advancing economy and rising standards of living and to meet the requirements of people. This rapid increase leads to increase in use of natural resources which are depleting alarmingly without the source to replenish it. Due to that reason we are forced to exploit other resources that are left behind during development of a society as waste. The concept of Reduce Recycle Reuse has now garnered tremendous attention by the people of present decade. In construction industry, the concept of reuse has led to development of various alternatives to replace traditional practices from concreting to painting. The novel among them are use of fly ash as partial replacement for cement, mountain sand in place of river sand and use of blended cements. These alternatives have gained more approval over the decade.

Researches are carried out by many across the world to replace the ingredients of conventional concrete with alternate materials without exploiting natural resources. The ideas are complete replacement of cement by fly ash, coarse aggregate by recycled aggregates and other such ideas are being exploited.

II. LITERATURE REVIEW

2.1 GENERAL

The works carried out by the various researchers throughout the world regarding high volume fly ash concrete and geopolymer concrete are discussed below.

2.2 REVIEW OF LITERATURE

Rawaz Kurda, et al, (2017) investigated the influence of recycled aggregates and high contents of fly ash on concrete strength properties. They replaced natural aggregate with recycled aggregate by 0% and 100% and fine aggregate by the recycled aggregate by 0%, 50%, 100% with 0%, 30%, 60% of fly ash. They arrived at the following general conclusion

A REVIEW ON GREEN CONCRETE MATERIALS FOR SUSTAINABLE ENVIRONMENT

Divya E^{*1}, Selvi K^{*2}

^{*1}PG Research Scholar, Civil Engineering, Nandha Engineering College, Erode, Tamilnadu, India.

^{*2}Associate Professor, Civil Engineering, Nandha Engineering College, Erode, Tamilnadu, India.

ABSTRACT

Construction industry plays a vital role in the development of a country and its infrastructure. Concrete usage is irreplaceable at maximum in construction industry. Concrete is the mixture of aggregate, cement and water. Hence when its demand gets increased country's economy changes, it results in rise in price of materials used which directly affects the infrastructure development. Concrete usage not only deals the economy, the manufacture of the materials used for it also affects the environment. Production of cement release CO₂ which causes global warming. Aggregate production results in destroying of natural resources such as rocks, river sand, etc. In order to overcome the economic and environmental effects, an alternative to traditional concrete called as Green concrete is emerging out nowadays. In this review paper, various Green concrete materials and its properties were reviewed from the collected literatures and finally the significant effects and benefits of some Green concrete material was spotted to produce eco-friendly concrete.

Keywords: Green Concrete, Economy, Infrastructure, CO₂, Eco-Friendly, Global Warming.

I. INTRODUCTION

Green concrete is a type of eco-friendly concrete made by replacement / partial replacement of any of the concrete mix. There are wide categories of Green concrete material which can be broadly classified into two types. It is classified as organic Green concrete material and inorganic Green concrete material. Inorganic Green concrete material can be further classified as metallic and non-metallic Green concrete material. Based on the physical and chemical properties of Green concrete material it can be used as a partial or complete alternative for cement or fine aggregate or coarse aggregate. So, before usage of Green concrete material in concrete mix it is mandatory to examine and analyze its physical chemical and thermal properties, to achieve better results. This Green concrete material may be waste products, by-products, secondary products of by-products or manufactured products. Pozzolanic materials can be used as an alternative for cement. Non-pozzolanic material can be used as fine aggregate or coarse aggregate based on its size and strength.


In recent days to improve the performance of concrete and for better durability, Nano materials have been synthesized and used as a Green concrete material. As discussed above these Nano materials may be organic or inorganic type of nanomaterials. These nanoparticles based Green concrete are examined using Scanning Electron Microscope to analyze its structure and bonding type, based on the SEM result it is very helpful to understand the molecular bonding and improvement in performance of concrete.

Wide range of literature has been collected in both organic and inorganic Green concrete materials from various times. All those Green concrete materials have been listed below and extract of those literature has been presented in this work.

List of Symbols, Abbreviations & nomenclature

CS	:	Compressive Strength
TS	:	Tensile Strength
FS	:	Flexural strength
STS	:	Split Tensile Strength
GGBFC	:	Ground Granular Blast Furnace Slag
AR	:	Abrasion Resistance
OP	:	Organic pollutant
RHS	:	Rice Husk Ash




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EXPERIMENTAL INVESTIGATION ON FIBERREIN FORCED PERVIOUS CONCRETE

Karthigaikumar M^{*1}, Denesh KC^{*2}

^{*1}PG Research Scholar, Department Of Civil Engineering, Nandha Engineering College, Erode,
Tamilnadu, India.

^{*2}Associate Professor, Department Of Civil Engineering, Nandha Engineering College, Erode,
Tamilnadu, India.

ABSTRACT

In this experiment we studied about mechanical and hydraulic properties of pervious concrete. Pervious concrete main purpose is recharge the ground water and reduce the run of water. Pervious concrete coarse aggregate sizes are important because here no fine aggregate so coarse aggregate sizes are give strength , durability and permeability of concrete here we take 12 – 16 mm size of coarse aggregate. Here we conduct compressive strength , split tensile strength and permeability test.

Keywords: Mechanical Properties, Permeability Test, Pervious Concrete.

I. INTRODUCTION

Concrete is a mixture of cement, water, coarse and fine aggregate with or without special admixture. The cement and water will form a paste that hardens as a result of a chemical reaction between the cement and water due to hydration of cement. This concrete is also called as impervious concrete. Pervious concrete is a high porosity concrete and called as permeable concrete. This concrete mixtures are cement, coarse aggregate and water compare to conventional concrete this concrete strength is lower . Pervious concrete strength thickness are little more than conventional concrete e.g: Pervious concrete thickness of 4"(101 mm) for used pedestrian application , 6"(152 mm) for vehicular and 8" (203 mm) or more for heavy vehicular application like bus stop and high use road . It contain high thermal insulation value compare to conventional concrete. It is mainly used for ground water recharging purpose and run-off water. Pervious concrete was first used in the 1800 in Europe as pavement surface and load bearing wall because at that time cement cost is high so main motive due to decreased amount of cement. It become popular again in the 1920 for two storey home in Scotland and England. Southern California ready mixed concrete association said properly constructed pervious concrete parking area life times are 20 to 40 years. Highly developed countries pervious concrete are used in storm water area. In generally the mixture of water cement ratio of 0.28 to 0.40 with a void content of 15 to 30 percent. Pervious concrete can also reduce the impact of development on trees.

MATERIAL SELECTION

Pervious concrete materials are mostly like as a conventional concrete these are

- Cement OPC 53 Grade
- Coarse aggregate(12-16 mm)
- Water
- Poly Ethylene Terephthalate Fiber

Reaction of polyethylene terephthalate

Polyethylene terephthalate is the most common thermoplastic polymer resin of the polyester family and is used in fibers for clothing, containers for liquids and foods and thermoforming for manufacturing and in combination with glass fibre for engineering resins.

ADVANTAGES OF PERVIOUS CONCRETE

- Eliminates or treated storm water and creates zero runoff.
- Directly recharges groundwater.
- Reduce surface temperature, first flush pollution and water borne disease
- Protects streams, watersheds and ecosystems.


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Experimental Study on Ferro cement Composite Slab

ARAVIND.V*1, KUMAR.M*2

*1 Assistant professor, Department of Civil Engineering, Nandha Engineering College, Erode, Tamilnadu, India

*2 Student, Department of Civil Engineering, Nandha Engineering College, Erode, Tamilnadu, India

ABSTRACT

Today's structures are situated in more aggressive environment. These leads to the development of ferrocement structures. Ferrocement is a type of thin wall reinforcement concrete commonly constructed of hydraulic cement mortar, reinforced with closely spaced layer of continuous and relatively small diameter mesh. But in general ferrocement can be defined as "A composite material consist of a matrix and a reinforcement in a finely distributed manner which act together to form a new material with characteristics superior to either of its constituents. In this we can see the basic history of ferrocement and profile of ferrocement and literature review ,ingredients used in ferrocement concrete slabs .The most extensively used building medium in world today is concrete and steel combined to make reinforced concrete ;familiar uses are in high rise buildinds ,highway bridges and roadways. Ferrocement technology does not have sufficient knowledge about its durability and production cost are competitive in special circumstance .There are three distinct phases in the ferrocement history amongst the 1850's, 1940's, 1960's decades. The basic essential properties of ferrocement ,various research works on ferrocement carried out throughout the world so far reveal that ferrocement possesses the following characteristics. Ferrocement has found widespread applications in housing particularly in roofs, floors, slab and walls. Advantages of ferrocement based on construction side and on material side and disadvantages on ferrocement construction.

Date of Submission: 28-01-2022

Date of acceptance: 09-02-2022

I. INTRODUCTION

Ferrocement is a type of thin wall reinforcement concrete commonly constructed oh hydraulic cement mortar, reinforced with closely spaced layer of continuous and relatively small diameter mesh. First well known reinforced concrete was ferrocement boat. In 1850's Lambot began the history of reinforced is concrete and ferrocement only on concrete construction in massive form has a great success. In 1940's Nervi rediscovered ferrocement and he gave it a dimension ever seen. In 1960's decade, Nervi's accomplishment simulated the worldwide application of ferrocement. The properties are ability to construct thin shells at any shapes and elimination of shrinkage and temperature cracking due to inherent material properties and improvement in tensile strength compared with plan or ordinary reinforcement concrete. A characteristic in ferrocement was ease of construction, high resilience, high static ductility ,high resistance in cracking ,improvement in toughness ,fatigue ,resistance ,impermeability ,reduced dimension ,vibration resistance ,fire resistance compared with timber. An application was water tank, pipes, ferrocement gates ,aqueducts ,pipes ,culverts ferrocement has been widely accepted as suitable m,aterial for biogas structure and for marine application such as boats ,biogas ,pontoons ,treatment plant shops ,floating docks etc. Benefits based on construction side was easy to repair and cracking réistance on material side. Disadvantage is unskilled and semi skilled labour is high,

II. LITERATURE REVIEW

M.A.MANSUR, MOHAMED MAALEJ AND MOHAMMAD ISMAIL Study on corrosion durability of ferrocement. Distributed and evenly dispersed reinforcement elements in Ferro cement compared with traditional reinforced concrete, accumulation of rust around the fine wire resulted in the development of bursting pressure sufficient to generate cracking. S.K.KAUSHIK, D.N.TRIKHA & R.R.KODAWALA 1982, a study of simply supported and the restrained ferrocement beams. 20 lab size of ferrocement strips, beams and lintels to study the effect of mesh reinforcement on the ductility, cracking and moment were tested. The increase in the volume fraction of the mesh was decrease with the ultimate rotation and moment of resistance. 30 to 40 % was decreased by the max observed crack width at the mid span of the restrained beam .WAIL N. AL RIFAIE ,SHUKRI H. KALAF, investigate the behavior and ultimate strength of long span ferrocement shells under one point load applied at crown of shells. Three long span ferrocement shell unit were constructed and tested. P.PARAMASIVAM and R. SRI RAVINDRARAJAH , reported on the presence of wire mesh reinforcement in ferrocement improves crack resistance , impact strength and toughness.




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A Study on Flexural Behaviour of Steel Fiber Reinforced Concrete with Addition of Mineral Admixture

V.MAGESH¹, V.ARAVIND²

¹PG student, Dept. of Civil Engineering, Nandha Engineering College, Tamilnadu, India

²Assistant Professor, Dept. of Civil Engineering, Nandha Engineering College, Tamilnadu, India

ABSTRACT

Fibre Reinforced Concrete (FRC) is very useful in extreme climate where shrinkage of concrete causes cracks. The Fibre Reinforced Fly ash concrete (FRFAC) has been successfully used to minimize cavitations / damages in hydraulics structures. This experimental investigation is to study the effects of replacement of cement (by weight) with three percentage of fly ash and the effects of addition of steel fiber composite. A control mixture of proportions was designed. Cement was replaced with three percentages (10%, 20% & 30%) of Class C fly ash. Three percentages of steel fibers (0.30%, 0.45% & 0.60%) having 20 mm length were used. This study reports the feasibility of use of steel fibres and their effect due to variation in fibre length, fibre content on structural properties such as cube compressive strength, cylinder compressive strength, split tensile strength, modulus of rupture and modulus of elasticity of this composite. Tests will be conduct on beams with optimum fibre parameters, and the results compared with those of identical Reinforced Concrete beam.

Date of Submission: 15-01-2022

Date of acceptance: 30-01-2022

I. INTRODUCTION

1.1 GENERAL

- Fibre Reinforced Concrete (FRC) is very useful in extreme climate where shrinkage of concrete causes cracks
- The Fibre Reinforced Fly ash concrete (FRFAC) has been successfully used to minimize cavitations / damages in hydraulics structures

1.2 INTRODUCTION

Concrete is very strong in compression but weak in tension. As a Concrete is a relatively brittle material, when subjected to normal stresses and impact loads. The tensile strength of concrete is less due to widening of micro-cracks existing in concrete subjected to tensile stress. Due to presence of fiber, the micro-cracks are arrested. The introduction of fibers is generally taken as a solution to develop concrete in view of enhancing its flexural and tensile strength.

Fly ash is the fine powder major waste material produced from many thermal power plants. The disposal of fly ash is the one of the major issue for environmentalists as dumping of fly ash as a waste material may cause severe environmental problem. Therefore, the utilization of fly ash as an low cost mineral admixture in concrete instead of dumping it as a waste material can have great beneficial effects. It can be used particularly in mass concrete applications where main emphasis is to control the thermal expansion due to heat of hydration of cement paste and it also helps in reducing thermal and shrinkage cracking of concrete at early ages. The replacement of cement with fly ash in concrete also helps to conserve energy. The introduction of the paper should explain the nature of the problem, previous work, purpose, and 2 the contribution of the paper. The contents of each section may be provided to understand easily about the paper. The extensive investigation has been carried out on mixing of different types of fibers to the conventional concrete. The addition of steel fibers of suitable size, shape and aspect ratio to a properly designed concrete mix improves its resistance to tensile stress and modifies the brittle behaviour considerably and reduces shrinkage and temperature cracks. Fiber Reinforced Concrete (FRC) is very useful in extreme climates where shrinkage of concrete causes cracks. It is increasingly being used for precast elements, airport runways and tunnel lining. While addition of fly ash in FRC improves its compressive strength and reduces permeability at same workability.

The fibers and fly ash are added for improving its performance against creep, wear, fracture and decrease in the permeability. The Fiber Reinforced Fly Ash Concrete (FRFAC) has been successfully used to minimize cavitation / erosion damages in hydraulic structures such as sluiceways; navigation docks and bridge piers where high velocity flows are encountered. It is also rapidly gaining acceptance as suitable material for repairing, rehabilitation and renovation of concrete structures. Topçu and Canbaz [1], demonstrated through




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A STUDY ON POLYESTER FIBER REINFORCED CONCRETE WITH ADDITION OF SILICA FUME

M.Yeswanth*¹, S.Praveenkumar*²

*¹Assistant Professor, Dept. Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

*²PG Student, Dept. Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

ABSTRACT

The usage of polyester fiber reinforced concrete as a cement concrete pavement material has been studied. The research looked at the mechanical and durability properties of PFRC with and without fly ash in the lab. The PFRC outperformed normal cement concrete in terms of flexural and compressive strength, abrasion resistance, and drying shrinkage. When compared to PCC, there is no notable difference/reduction in durability resistance. Cement manufacture emits a significant amount of carbon dioxide. One of the by-products of the silicon and ferrosilicon industries is silica fume. The calcium hydroxide created by the cement hydration reaction combines with the silica fume to form more calcium silicate hydrate, which adds strength to the concrete matrix.

Keywords: Polyester Fiber Reinforced Concrete (PFRC), Silica Fume, Strength, Carbon Dioxide, Plain Cement Concrete.

I. INTRODUCTION

Concrete has a low tensile strength, which leads to fracture formation in both stressed and unstressed states. It is brittle, lacking in ductility, and has a low strain. To address these issues, polyester fiber reinforced concrete was used. These fibers are randomly scattered fibers that need to be reinforced in Portland cement concrete. Polyester in conventional concrete increases the concrete's compressive and flexural strength. It also improves abrasion resistance and alkaline condition resistance. Micro silica fume or condensed silica fume are other names for silica fume. It's a substance formed by reducing quartz with coal in an electric arc furnace to produce silicon or Ferro-silicon alloy. Silicon dioxide makes up more than 90% of the chemical composition of silica fume.

II. LITERATURE REVIEW

2.1 GENERAL

The journal carried out by the various researchers throughout the world regarding polyester reinforced concrete with addition of silica fume are discussed below.

2.2 REVIEW OF LITERATURE

Mebarkia.S Vipulanandan.C(1990)-This study investigates the influence of aggregates, polyester fibers and a coupling agent on the compressive and flexural (three-point and four-point bending) behavior of a polyester mortar. Fine aggregate particle sizes (quartz and limestone) ranged from 0.1 to 5 mm (0.004 to 0.2 inch), and polyester fiber concentration was up to 6% by weight of mortar. By pretreating the aggregates and polyester fibers, a silane was incorporated into the polyester mortar. At room temperature, the mechanical characteristics of mortar were investigated. The test findings show that choosing the right aggregate type, size, and distribution is critical. When compared to untreated aggregate systems, silane treated aggregate systems demonstrated a 66 percent improvement in compressive strength and a 35 percent increase in flexural strength. The addition of polyester fibers improves the polyester mortar's strength and toughness, while silane treatment of polyester fibers improves these attributes even more. The unreinforced system had a flexural (three-point bending)-to-compressive strength ratio of 0.28 to 0.35, whereas the reinforced system had a ratio of 0.26 to 0.54. The compressive strength of the mortar with only 14 percent polyester, 86 percent aggregates (by weight) and a coupling agent was 103 MPa (15,000 psi), which is 94 percent of the polyester polymer strength. To express the whole stress-strain response under compression and flexural loading, a stress-strain relationship is provided. In addition, a mechanism for quantifying failure patterns is proposed.



EFFECT OF METAKAOLIN ON PERVIOUS CONCRETE

Ravisankar K.L^{*1}, Renugadhevi.S^{*2}

^{*1}Assistant Professor, Department Of Civil Engineering, Nandha Engineering College ,Erode, Tamilnadu, India.

^{*2}Student, Department Of Civil Engineering, Nandha Engineering College, Erode, Tamilnadu, India.

ABSTRACT

In comparison with past few years, lot of research focus on developing new Supplementary cementitious material to strengthening the concrete. These materials are used as a part of cements. Metakaolin is one of the complementary cementitious materials which are partially replaced for cement. Properties of concrete with metakaolin are comparatively used as additives in concrete. The no fines concrete allow more groundwater recharge. The basic strength tests were conducted on pervious concrete for 1:4 cement to aggregate ratio with constant water to cement ratio was 0.33. Metakaolin was added at different percentages for weight of cement. The effect of metakaolin at a range of percents in pervious concrete without inhibiting the permeability characteristics of pervious concrete were observed in project.

Keywords: Metakaolin, Porous Concrete Or Pervious Concrete, Compression Strength, Split Tensile Strength, Permeability.

I. INTRODUCTION

Metakaolin is the anhyrrous calcined form of the clay mineral kaolinite. Minerals that are well-off in kaolinite are known as china clay or kaolin, traditionally used in the manufacturing of porcelain. The cement size is somewhat bigger than metakaolin but not as fine as silica fume .The quality and reactivity of metakaolin is strongly dependent of the characteristics of the raw materials used. Metakaolin is a highly processed reactive alumino-silicate pozzalona, a finely divided material that respond with slaked lime at ordinary temperature and in the occurrence of humidity to form strong slow hardening cement. Metakaolin is a pozzolan, probably the most successful pozzolanic material for use in concrete. Metakaolin is a valued admixture for concrete/cement applications. Porous concrete increases the ground water level. In future we will focus on the demand of construction materials (cement, fine aggregates and coarse aggregates), environment friendly constructions and strength improvements in pervious concrete. To achieve more strength we partially replace the cementitious material for cement or several admixtures were added in concrete.

II. LITERATURE REVIEW

E.Guneyisi, (2017) "Improving Strength, Drying Shrinkage and Pore Structure Of Concrete Using Metakaolin"

The metakaolin (MK) were used as a accompanying cementing material to advance the performance of concrete. The metakaolin substitution levels were engaged in this reading 10% and 20% by weight of the Portland cement used. The properties of Portland cement and MK is examined. The Plain and Plain Cement-metakaolin concretes were designed at two water-cement ratios of 0.35 and 0.55. The performance characteristics of the concretes were evaluated by measuring compressive, split tensile strength, water absorption, drying shrinkage and weight losses due to the equivalent drying. Tests were conducted at different ages up to 120 days. It was observed that the strength of concretes incorporated with MK was up to 30% greater than that of the plain concretes, depending up on replacement level of metakaolin, w/c ratio and testing age. Remarkable lower shrinkage is found in different modified concretes. The total porosity decreased substantially with increasing replacement level of metakaolin especially at a replacement level of 20%.

III. PROPERTIES OF MATERIALS BASED ON TEST

Properties of Metakaolin:

SN.	PHYSICAL PROPERTIES	OBTAINED VALUE
1	Specific gravity	3.02




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A REVIEW ON SELF-CURING CONCRETE

K. Sathiyamoorthy*¹, S. Gnana Venkatesh*²

*¹PG Student, Dept. Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

*²Assistant Professor, Dept. Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

ABSTRACT

In the gift day's concrete is one amongst the foremost speedily used construction materials in technology thanks to its high-quality sturdiness and its strength. The sturdiness and strength of concrete are going to be consummated as long as it's properly cured. For natural action of the concrete great amount of water is needed thus, in recent year's new technique developed referred to as self-curing within which cure of concrete done by itself by retentive wet content within the concrete. This paper represents the strategies of self-curing concrete and past work done to date during this space. it had been found that numerous chemical admixtures like (PEG), (PEA), (PVA), (SAP), etc. and naturally on the market material like light-weight combination, lightweight dilated clay, wood powder, etc. were used as a self-curing agent. Therefore this paper focuses on chemicals used, physical and mechanical properties like (Compression strength; Tensile strength; workability; durability) of self-curing concrete. Literature reviewed shows the various techniques used for self-curing concrete.

Keywords: Self-Curing Concrete; Mechanical Properties; Physical Properties; Lightweight Aggregate (LWA).

I. INTRODUCTION

During the last twenty years, concrete technology has been undergoing speedy improvement. The imagination of world while not concrete is not possible. Concrete may be a soul of infrastructures. Concrete is important to achieve strength in structures. Typical concrete that is that the mixture of cement, fine mixture, coarse mixture and water wants natural action to attain needed strength. Therefore it's needed to cure for a minimum of twenty eight days permanently association and to attain target strength. Lack of correct natural action will badly have an effect on trendy concrete, that cure itself by holding water (moisture content) in it.

As water is changing into a scarce material day-by-day, there's Associate in Nursing pressing got to do analysis work concerning saving of water in creating concrete and in constructions. Curing of concrete place a significant role in developing the strength and hardness of concrete, that result in improvement in sturdiness and performance. Hardening of concrete is maintaining satisfactory wetness content in concrete throughout its early ages so as develop the required properties. As a result of once intermixture cement with water the method of association takes place that needed water for cooling purpose. If water isn't provided then shrinkage of concrete happens which ends up cracking. Thus it's necessary to supply water as hardening for a few fix length. Much smart hardening isn't doable in several cases thanks to inaccessibility of fine quality water and lots of alternative sensible difficulties. Within the past few decades internal hardening of concrete has gained quality and its steady progressing from laboratory field of observe. Internal hardening seek advice from the method by that the association of cement happens as a result of convenience of extra internal water that's not a part of the blending water; "SELF-CURING" is usually additionally referred as internal-curing.

II. LITERATURE REVIEW

2.1 GENERAL

The works carried out by the various researchers throughout the world regarding self-curing concrete are discussed below.

2.2 REVIEW OF LITERATURE

Roland Tak Yong Liang and Robert Keith Sun (2002) developed a glycol and wax-based concrete internal curing mixture. For the first time, the innovation provides an internal curing composition that meets the curing criteria of Australian Standard AS 3799 when applied to concrete or other cementitious mixtures.

Wen-Chen (2011) self-curing concrete is designed to collect water from the air to improve cement hydration in concrete. It solves the problem of low cement hydration owing to lack of or inappropriate curing by utilising a self-curing agent such as poly-acrylic acid, which has a strong ability to absorb moisture from the air and provide the water required for concrete curing.

STUDY ON INVESTIGATION ON BEHAVIOUR OF RC BEAMS USING REBAR COUPLER

Sathya Priya M^{*1}, Abdul Hameed A^{*2}

^{*1}PG Student, Department Of Civil Engineering, Nandha Engineering College, ERODE,
Tamilnadu, India.

^{*2}Associate Professor, Department Of Civil Engineering, Nandha Engineering College,
ERODE, Tamilnadu, India.

ABSTRACT

The main aim of this project is to study and identify the behaviour of reinforced beam by using tapered mechanical couplers. This study identifies the improperly installed mechanical splices that is couplers and their behaviour of reinforcement concrete beams. In lap splicing the two parallel bars are overlapped with each other. The overlap load, transfer the load to the steel and concrete. First the load in one bar is transferred to the concrete and then from the concrete, its transfer the load to another bar. In using mechanical splices, they do not overlap with each other and hence the less reinforcement bar is required and also reduce the cost of material. This project is to study of different couplers and strength of tapered mechanical couplers.

Keywords: Identify, Couplers, Tapered Mechanical Couplers.

I. INTRODUCTION

In construction of concrete building they mainly concentrated on the using of steel reinforcement is to transfer the tension and shear forces. The rebar coupler is mainly used to reduce the time of construction and also steel requirements. They are providing more strength to the joints and also profitable of joining of two bars.

Mechanical splices

Mechanical splicing consisting of a coupler with internal straight threads at each ends that joints two upset and reinforcing bars with matching external threads. Upsetting the bar ends permits the cross sectional area in the threaded portion to be greater than the bar cross sectional area. Coupler is a threaded device for joining reinforcing bars of the purpose of providing transfer of either axial compression or axial tension from one bar to other bar. Couplers are manufactured from mild steel on a lathe machine but in some of the cases alloys of different metals can also be used. The material should be such that couplers meet the minimum requirement of strength. The manufacturing is to perform various steps such as cutting, sanding, boring, threading, drilling and finishing. The oldest interlocking method is called threaded coupler, they can reduce the nominal bar area and lowering the capacity of load. The reinforcement bars is to be threaded in the field or lathe machine. During the transportation process the threaded reinforcement bars to be protected against damage.

Taper threaded couplers

In this tapered threaded couplers is to carry out the threading on the reinforcement bar at certain slope of inclination. This type of slighted threading is to fixed of all threads at same time in the coupler joint. This type of tapered threaded couplers are long in length as differentiate to parallel couplers and the number of thread is denoted as scope of range. This couplers are generally used in columns and it to ensure the screw up of the joint, it is difficult and not possible to use in raft.

Scope and Objective

The main scope of the project is to study the behaviour and strength of tapered mechanical couplers and RC beam

1. To study the power, durability and way of behaving of mechanical couplers
2. To study behaviour of RC beam
3. Mix design of concrete for M30 grade
4. To determine the material testing.
5. Test of specimen done in further study

STUDY ON HIGH PERFORMANCE FIBRE REINFORCED CONCRETE USING MARBLE POWDER, QUARTZ POWDER & SILICA FUME

M.K.Kamalakaran*¹, K.Manikandan*²

*¹Assistant Professor, Department Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

*²PG Student, Department Of Civil Engineering, Nandha Engineering College, Tamilnadu, India.

ABSTRACT

The construction industry has been responsible for plaguing the environment due to ecological imbalance caused during the production and extraction of building materials. To make this production of construction materials cleaner, the dependency on natural resources has to be minimised. With the aim of this marble powder is used as a cement replacement. The present study examines the feasibility of using marble powder in a better way with the use of supplementary cementations materials. Two supplementary cementations materials, Silica fume and quartz powders were added to enhance the pozzolonic activity in the concrete mixtures for maximum use of marble powder. The replacement of marble powder varies from 5% to 15%. The high performance hybrid fibre reinforced concrete was produced in addition of crimped steel fibre, polypropylene fibre and glass fibre. The combined volume fractions of the fibres were 1% to 3%. Various test such as compressive strength, split tensile strength and flexural strength were carried out. high performance fibre reinforced concrete which gives good energy absorption, stiffness and ductility.

Keywords: High Performance Fibre Reinforced Concrete, Marble Powder, Silica Fume, Quartz Powder, Polypropylene Fibre.

I. INTRODUCTION

Concrete is one of the most versatile building materials. It could be laid from a cylindrical water storage tank to a square beam or column in a tall constructing to healthy any structural shape. The benefits of the usage of concrete encompass excessive compressive power, exact fire resistance, excessive water resistance, low maintenance and long service existence. Hazards of using concrete encompass bad tensile strength, low fracture and the want for formwork. The principle disadvantage is that the concrete forms micro cracks for the duration of curing. The rapid propagation of these micro cracks under the applied pressure is the reason for the low tensile strength of the material. So fibers are added to the concrete to overcome these defects. Adding fibers to the matrix has several important effects. The most notable of the improved fiber reinforced concretes (FRCs) are its high fracture strength, stiffness, impact resistance, tensile strength and improved performance, which is the primary reason for the extensive use of steel fiber reinforced concrete (SFRC). For pavements, bridge platforms, marine structures and mechanical foundations, the composite is subject to a rotational load during its lifetime.

II. LITERATURE REVIEW

Furlan et al., (1997) discussed the experimental investigation of the cutting and bending failure of reinforced concrete with steel and polypropylene fibers. Seven concrete mixes were prepared and two beams (with and without strips) and four cylindrical models were cast for each type of mix. The beams were tested using two-thirds of the gap-point loads. The results show that the addition of long strands of steel slightly increased the tensile strength and short strands increased elasticity. Crack progress in fiber reinforced concrete was relatively slow and distortions were minimized. At the end of the test the cracking pattern was very intense. The addition of fiber increased the cutting strength and changed the failure mode from pruning to flexible. Distortions in steel and polypropylene fibers appear mainly at strip stresses, which are lower in the case of steel fiber reinforced concrete than polypropylene fiber reinforced beam.

Lin et al., (1999) Fiber reinforcement was studied on the mechanical behavior of reinforced concrete beams in shearing. Circular straight steel fibers with a diameter of 0.7 mm, a length of 42 mm and a final strength of 1784 MPa. Rectangular cross-sections of nine beams of 100 mm x 80 mm and 1300 mm in length were used.



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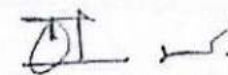
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CENTRAL ASIAN JOURNAL OF THEORETICAL AND APPLIED SCIENCES

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Forecasting Stock Price Using Multiple Regression in Machine Learning

P. Sobana¹, S Prabhu², S Karuppusamy³, P Thirumoorthy⁴

¹PG Scholar, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India.

^{2,3,4}Associate Professor, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India.

¹sobana13cse@gmail.com, ²prabhuvelli@gmail.com, ³sksamymsc@gmail.com, ⁴thiru4u@gmail.com

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Abstract: Stock value gauging is an occurrence and vital theme in monetary and scholarly examinations. It is a fundamental endeavour and a remarkable investigation region in the monetary space as putting resources into the stock involves more noteworthy risk. Different occasions may affect public opinions and feelings, which might influence financial exchange costs. Due to reliance on various variables, the stock costs are dynamic and not static, to a great extent boisterous and nonlinear time series information. Machine Learning has been applied to this assessment locale considering its mind-blowing learning capacity. AI computations have made a radiant impact in deciding stocks exactly. Strategies are given learning for stock worth expectation work on displaying the learning-based markers. In light of everything, doing successful figures in the monetary trade is a critical test. The essential mark of the endeavour is to zero in on the usage of Regression-based Machines getting the hang of sorting out some way to conjecture stock characteristics. This paper explains the collection of irrefutable data and changes the rough data into graphical design using python programming. Likewise, equations estimations for the elements like Momentum, Volatility, Index Momentum, Stock Momentum and Sector Momentum are clarified in the report.

Keywords: Machine Learning, Multiple Regression, algorithms, Python programming.

I. INTRODUCTION

Machine Learning

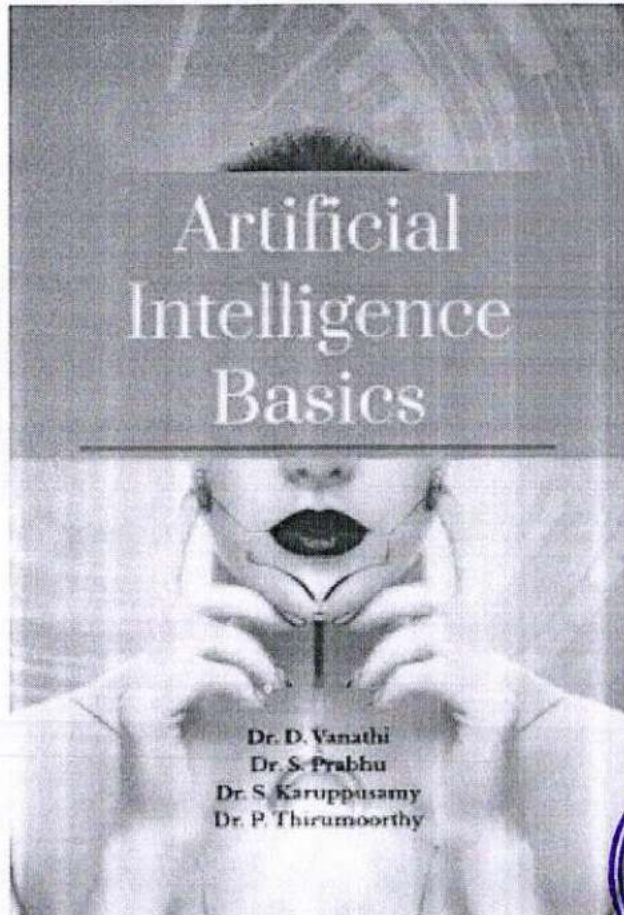
Stock Market analysis has been a crucial place of exploration and is one in every one of the absolute best uses of Machine Learning. Forecast and assessment of the monetary trade are among the principal unnoticeable endeavours [12]-[14]. There are different clarifications behind this, especially like the market unusualness then a wide scope of dependent and free factors for picking the value of a particular stock inside the market. Regardless, with the presence of Machine Learning and its extreme estimations, the latest factual studying and protections trade Prediction qualities have begun joining such procedures in getting the Stock Market data [15]-[21]. Machine Learning algorithms are phenomenally helpful in improving the dynamic technique for people because of the move information and estimate the approaching business sector picture with spectacular precision. Because of these expectations, the brokers will make convenient moves and augment their profits. So, Machine Learning Algorithms have gotten utilized broadly through different associations in investigating and anticipating stock qualities [22].



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CENTRAL ASIAN JOURNAL OF THEORETICAL AND APPLIED SCIENCES

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Cognitive Radio Networks with Flexible Channel Cooperation in Resource Allocation

P. Poomani¹, P. Thirumoorthy²

¹PG Scholar, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India. poomani814@gmail.com

²Professor, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India. 4thiru4u@gmail.com

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Abstract: The Wireless correspondence networks are a drawn-out that accompanies all kinds of strategies and kinds of associating and human movement between at least two gadgets utilizing a remote transmission through remote correspondence advances and gadgets. Correspondence issues encapsulate impromptu and foundation networks as correspondence properties, conventions, information configurations, and substantial innovations. The essential client (PU) will send the data through the Secondary User (SU). Then, at that point, through how much SU s the information is moved to the base station. The channel is commonly relegated given the two algorithmic principles, the ideal disseminated dealing calculation and concentrated heuristic calculation. Then, at that point, among the current framework, expansion assault is a serious disadvantage. The expansion assault is overwhelmed by executing the Future Peak Detection calculation. This verifies that the Pu will choose to communicate information through that SU. So the expansion tackle issue could likewise survive. Furthermore, the information is crossed to the base station with the entire security.

Keywords: Content and Presence Multicast Protocol, Broadband Wireless Access, inflation attack, Primary Users, secondary users.

I. INTRODUCTION

The dissemination of cells with plentiful remote correspondence and correspondence capacities has carried the new cell configuration process with new present-day accepted practices [16]-[19]. The new, easy-to-use innovation permits clients to search, download, and share top-notch content from their telephone with loved ones. With specially appointed systems administration abilities in cell phones, we are getting down to see them on top of pattern shift from wide-region networks of clients to thick neighbourhood circumstances (e.g., intermittent shops, train stations, football fields, and so on) [1]-[3]. Such a shift presents valuable chances to style mindful closeness frameworks conveying novel social encounters.

For instance, football fans will precisely share films taken on their cell phones with each other, though remarking/rating pictures being taken around them. Planning frameworks for startling conditions presents many coordinating examination challenges and the problematic disadvantage of giving versatile, energy proficient presence and content updates [20]-[25].

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CENTRAL ASIAN JOURNAL OF THEORETICAL AND APPLIED SCIENCES

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Efficient Resource Allocation by Sub Channel Assignment in Cognitive Radio Networks

P. Poomani¹, P. Thirumoorthy²

¹ PG Scholar, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India. poomani814@gmail.com

² Professor, Department of Computer Science and Engineering, Nandha Engineering College, Erode, Tamil Nadu, India. thiru4u@gmail.com

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Abstract: Lately, a helpful worldview for channel mental radio organizations has been pushed; any place essential clients would use auxiliary clients to hand off their traffic. Notwithstanding, it's not satisfactory anyway. Such collaboration is taken advantage of in multichannel networks successfully. Commonplace participation involves that information on one channel should be handed off on precisely a comparable divert that is wasteful in multichannel networks with channel and client. In addition, the parsimony of clients confounds the fundamental asset allotment issue, as each gathering focus on expanding their utility. This work addresses the essential resolve to address these difficulties. We tend to propose FLEC, a special style of adaptable channel collaboration. It licenses auxiliary clients to uninhibitedly advance the usage of channels for communicating essential information related to their information to augment execution. Further, we plan to bring together streamlining structure upheld Nash bartering Solutions to genuinely relate degreed speedily address asset distribution among essential and optional organizations in decentralized and unified settings. We tend to introduce partner ideal appropriated rule, and sub-standard brought together heuristics and check their adequacy through reasonable reenactments.

Keywords: Flexible channel, efficient, optimal resources, resource allocation, multichannel network, channel cooperation.

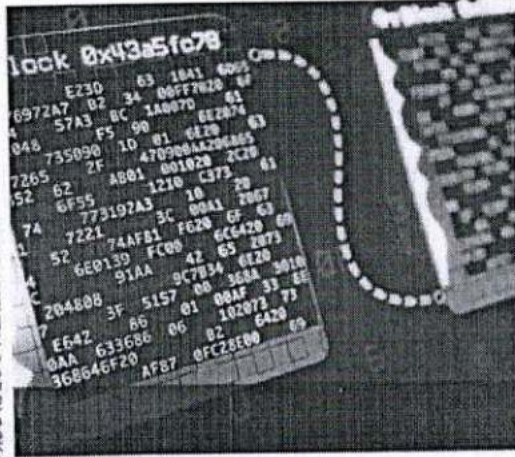
I. INTRODUCTION

As of late, the agreeable system has turned into an intriguing theme regarding mental radio exploration. This paper will propose an extremely intriguing, helpful organization called adaptable channel agreeable mental radio organization [16]. In our framework model, the essential clients can include auxiliary clients as agreeable transfers; thus, consequently, the optional clients can get to the remote channel for their information transmission, and afterward, the transmission time is connected with its installment the essential client [17]-[21]. The creator demonstrates the presence of the novel Nash harmony and proposes a crossing rule to accomplish the client's ideal methodology. In any case, the auxiliary client's helpful power will be fixed, which isn't productive; additionally, the optional client's own transmission time isn't connected with its commitment to essential clients transmission, which isn't sensible [22]. Because of the distributed remote organizations, interchanges are without a doubt likely to assault, appreciate aloof snooping, or dynamic sticking. We will generally consider the hypothetical data mystery rather than abuse the cryptographic methodologies [1] to battle the malignant clients.

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An Efficient Patient Monitoring System for Healthcare Application Using Internet of Things

Parameshwari V¹, Nithya A², Preetha R², Ranjani B², Sumithra S²

¹Assistant Professor, Department of Electronics and Communication Engineering, Nandha Engineering college, Erode, Tamilnadu, India.

²Student, Department of Electronics and Communication Engineering, Nandha Engineering college, Erode, Tamilnadu, India.

Corresponding Author: erparam@gmail.com

Abstract: - Science and expertise based on wireless-sensing node technologies have developed in today's health-care environment. Patients are in danger of dying unexpectedly owing to a specific health problem, which is caused by a lack of good medical care provided to patients at the appropriate time. This suggested system uses sensor technologies and the Internet of Things (IoT) to monitor patient health issues and rapidly communicate patient status to clinicians. Temperature sensor, Pulse sensor, Pulse Oximeter, Pressure sensor, ECG, Gyroscope, and Vibration sensor all play essential roles in this suggested system for tracking patient health parameters. All of the sensors are connected to the Arduino Nano, which is used to track the patient's health. The data is delivered immediately to the IoT cloud and stored on an SD card for offline storage utilizing Wi-Fi technology. The Thingspeak software can be used to view the graphical depiction.

Key Words: — *Arduino Nano, Thingspeak, Cloud Computing.*

I. INTRODUCTION

IoT innovation is now being accepted for a wide range of regulating applications, like Farming, Military, Industries, Smart Vehicles, Smart cities, and countless others. It was seen as a new and revolutionary makeover. The Internet of Things (IoT), also known as the Modern Internet, has been described as a global basis for the digital society, enabling advanced benefits by networking (physical and virtual) things without relying on existing and emerging compatible data and communication improvements. As a result, a healthcare framework has been established with the use of IoT innovation for monitoring the patient's health state. From remote monitoring to smart sensors to medical device integration, IoT technology has a wide range of applications in healthcare. It keeps the patient safe and healthy while also improving physician-patient care. Various technologies, such as wireless communication, sensors and wearable technology, portal technology, and so on, can be used to monitor healthcare. However, these technologies have few advantages and disadvantages.

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II. LITERATURE SURVEY

Guangyu Xu [1] suggested a secure data transfer IoT Assisted ECG monitoring system for health care applications. The ECG-SSA methodology is presented in this work for automated ECG analysis. ECG Signals in the context of patient and physical activity are evaluated.

An IoT-based system for automated health monitoring and surveillance in post-pandemic life has been proposed by Seyed Shahim vedaei [2]. An IoT architecture is described in this system to monitor participants' health state and to alert them to maintain physical distance to reduce the danger of Corona virus infection.

The Internet of Things (IoT)-based LoRa Wireless Network System was proposed by Mohammad Shahidul Islam and Norbahiah Misran [3]. To generate vital signs and data for medical patients or applications, the My Signals platform has successfully interfaced with ECG, temperature, pulse rate, and oxygen saturation sensors.

Real-Time Signal Quality-Aware ECG was proposed by Barathram Ramkumar, M.Sabarimalai Manikandan [4]. IoT-Based Health Care Monitoring Telemetry System ECG sensors, Bluetooth, a cloud server, and an Android phone can all be used to monitor your heart 24 hours a day, seven days a week.

D.Azariadi and D.Soudris [5] presented an alternative. On the Internet of Things, wearable medical devices can analyse

Multi Purpose Drone for Medical Emergency

P. Hemavarshini, J. Kavipriya, B. Kiruthika, M. Lavanya, Ms. K. Niji

Abstract— In this project is based on drone to reduce the time of brought the medicine. Now a day due to pandemic situation we are unable to go out to buy the medicine in any time. Drone is a common term in this modern technologically advanced and growing world has been great invention and has been proven of great use in the provide efficient and convenient surveillance. In emergency situation where the present transport structure is shattered due to flood earthquake etc., this type of automatic f=drone delivery system can save precious lives with much less and nominal efforts.

Keywords— ESC, KK 2.1.5 Flight controller.

I. INTRODUCTION

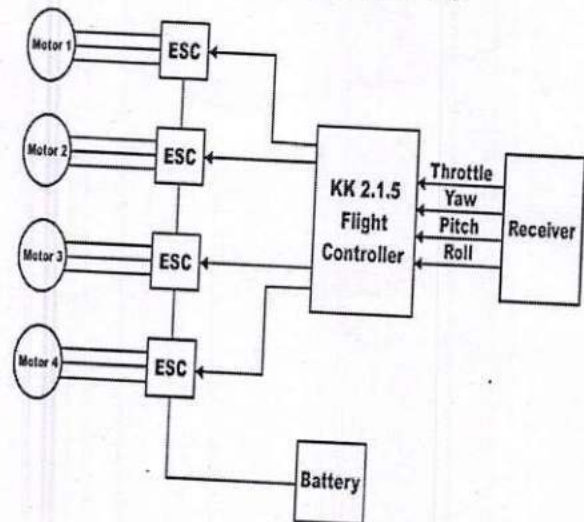
Drone are unmanned aerial Vehicles that are remotely controlled. They in size from under one pound to reversal hundred pounds. Drone are classified for consumes use, which the federal Aviation Administration (FAA) defines as drones between 0.55 to 55lbs. Since consumes drone have been available for purchase in greater number than ever before, legislation related to number of zones needs to be centrally organized. This can be done through the creation of a geodatabase and web-GIS map, which will allow for visualization of drone use areas. The study area for this is the state of Mayland, which was chode because it contain every type of FAA no- fly zone and it has not passed any drone use sub-national rules; this allows for current FAA regulation to be studied and improvement recommended where necessary. This web- GIS map was then constructed that allows users to differentiate between types of fly zones and obtain details regarding the permissibility of drone flight in these zones. This geo database coupled with the web- GIS map of appropriate and inappropriate drone use fly zones provides an effective model.

II. PROPOSED SYSTEM:

A quad copter is used to spin RPM of its varying four rotors to control lift and torque. The thrust is determined using altitude, pitch, and roll angles. It plays a key role in maneuvering, enables the user to perform flying routine which includes aerial maneuvers. To delivery the medicine item in rural area and weather condition is difficult.

P. Hemavarshini, Nandha Engineering College – B.E- ECE
J. Kavipriya, Nandha Engineering College – B.E- ECE
B. Kiruthika, Nandha Engineering College – B.E- ECE
M. Lavanya, Nandha Engineering College – B.E- ECE
Ms. K. Niji M.E, Assistant Professor, Nandha Engineering College – B.E- ECE

III. BLOCK DIAGRAM:



IV. METHODOLOGY

A. Vertical Motion

Drones use rotors for propulsion and control. A rotor as a lover, because they work just about an equivalent. Spinning blades push air down. Of course, all forces are an available pair, which means that because the rotor pushes down on the air, the air pushes abreast of the rotor. Now, a drone can do three things within the vertical plane: hover, climb or descend. To hover, the internet thrust of the four rotors pushing the drone up must be adequate to the gravity pulling it down. So, it still need for the thrusters to be greater than just a hover.

B. Turning (Rotating)

It hovering drone pointed north and you would like to rotate it to face east. In this configuration, the red rotors are rotating counterclockwise and therefore the green ones are rotating clockwise. With the 2 sets of rotors rotating in opposite directions, the entire momentum is zero. Momentum may be a lot like linear momentum, and you calculate it by multiplying the angular velocity by the instant of inertia. It gets rather complicated, but all you would like to understand is that the momentum depends on how briskly the rotors spin.

C. PROPELLERS:

A Propeller is mounted on top of each motor. Propeller come in many size and shapes. Propeller dimension is (10*4.5) which mean diameter 10 and inches 4.5. Diameter give area but pitch gives effective area. If we use high pitch propeller for same diameter it create more thrust and list more



N. Hemavarshini
PRINCIPAL
Nandha Engineering College
(Autonomous)
Erode - 638 052.



Deep Learning Based Automated Tomato Leaf Disease Detection and Classification by Emperor Penguin Optimizer

Ms. R. Monica¹, K. Mohamedasif², S. Tharunkumar³, A. Thirunavukkurasu⁴, S. Vinoth⁵

Assistant Professor, Department of Electronics and Communication Engineering¹
Students, Department of Electronics and Communication Engineering^{2,3,4,5}

Nandha Engineering College, Erode, Tamilnadu, India

monica.r@nandhaengg.org¹, asifasif62775@gmail.com², stharun1367320@gmail.com³,
thiruashok1501@gmail.com⁴, vinothsundar54@gmail.com⁵

Abstract: *In most rural nations, Ranchers face an incredible misfortune consistently because of infections in crops. In this way, early recognition of tomato plant infections has accomplished an extraordinary worry of the scientists. In this paper a profound convolutional brain network model is utilized to perceive unfortunate plants from the solid plants and to characterize the tomato plant illnesses. We have utilized VGG16 profound CNN classifier to perceive unfortunate plants and their illnesses from.*

Keywords: Deep Learning

I. INTRODUCTION

In profound learning, a convolutional brain organization (CNN, or ConvNet) is a class of counterfeit brain organization, generally normally applied to investigate visual symbolism. They are otherwise called shift invariant or space invariant fake brain organizations (SIANN), in view of the common weight design of the convolution bits or channels that slide along input includes and give interpretation equivariant reactions known as component maps. Illogically, most convolutional brain networks are just equivariant, instead of invariant, to interpretation. They have applications in picture and video acknowledgment, recommender frameworks, picture characterization, picture division, clinical picture examination, normal language handling, cerebrum PC interfaces, and monetary time series.

CNNs are regularized renditions of multi-facet perceptron's. Multi-facet perceptron's typically mean completely associated networks, that is to say, every neuron in one layer is associated with all neurons in the following layer. The "full availability" of these organizations makes them inclined to over fitting information. Ordinary methods of regularization, or forestalling over fitting, include: punishing boundaries during preparing, (for example, weight rot) or managing availability (skipped associations, dropout, and so on) CNNs adopt an alternate strategy towards regularization: they exploit the various leveled design in information and gather examples of expanding intricacy utilizing more modest and less complex examples decorated in their channels. Along these lines, on a size of availability and intricacy, CNNs are on the lower outrageous. Convolutional networks were propelled by natural cycles in that the availability design between neurons looks like the association of the creature visual cortex. Individual cortical neurons answer upgrades just in a confined area of the visual field known as the open field. The open fields of various neurons somewhat cross-over to such an extent that they cover the whole visual field. CNNs utilize generally little pre-handling contrasted with other picture grouping calculations. This implies that the organization figures out how to upgrade the channels (or portions) through robotized learning, while in conventional calculations these channels are hand-designed. This freedom from earlier information and human mediation in including extraction is a significant benefit. A convolutional brain network comprises of an information layer, stowed away layers and a result layer. In any feed-forward brain organization, any center layers are called stowed away on the grounds that their bits of feedback and results are covered by the initiation capacity and last convolution. In a convolutional brain organization, the secret layers incorporate layers that perform convolutions. Commonly this incorporates a layer that plays out a speck result of the convolution piece with the layer's



Research Article

Improved Security of Hidden Data Based on Steganography Using ECC Method

E. K. ArulKarthick¹, R. Sanjai^{*1}, B. Vignesh¹, A. Rajeshwaran¹, M. Navaneethan¹

¹Department of Electronics and Communications Engineering, Nandha Engineering College, Tamilnadu, India.

Cryptography and steganography are well-known characteristics in the realm of computer networks for best security purposes. The key concept is to send the data in a secure manner. As a result, providing an adequate level of security for data transfer is critical. It should also minimize the security algorithm's time complexity. To encrypt the data and image, we used the "Elliptic Curve Cryptography" approach. To transfer the data securely, a "Least Significant Bit" steganography algorithm is employed insert encrypted data to be hidden inside the image. The image's encrypted data is subsequently decoded using the decryption method. The decrypted data is then used to extract the hidden data. The image is then compressed before being sent over the internet. To simulate the outcomes, MATLAB is utilized indicating that it has the power of good embedding and protection.

Keywords: ECC, Steganography, LSB, GUI, RSA, MATLAB, DES.

1. Introduction

Elliptic Curve Cryptography (ECC) is a proposal for asymmetric cryptography cryptology. How to set up a short loop numerical position in a specified location. Elliptic curve cryptography requires a small key compared to the non-elliptic cryptographic curve to provide the same level of security compared to other algorithms and techniques. Elliptic curves can be applied to key generation, digital signatures, random key generators, and other functions. Indirectly, it can be used for encryption by combining key sharing with an uneven encryption system. They are also used in other complete factorization algorithms based on elliptic curves that have applications in cryptographic systems such as: Lenstra elliptic curve factorization.

The least significant bit (LSB) is the binary number one bit. The value that specifies the unit value, that is, determines whether a number is even to or odd. The less important one is sometimes called the lower order or the rightmost bit. This is related to the norm of writing the least significant digit further to the right in position denotation.

This is the least significant digit of a decimal integer, that is Rightmost digit. It is common to assign a position number in the range 0 to N1 to each bit. The number of bits in the binary encoding utilized in this example is N. Usually this is just an exponent of the corresponding bit weights in the base. The manufacturer of some control processing units assigns bit numbers in the opposite way, but the concept of the least significant bit itself remains unidentified as a threat to the unit bits. As a result, the least significant bit is the number of bits that is closest to the least significant bit and contains the least significant bit.

The block diagram in Fig. 1 shows that the message is sent from the sender to Receiver. The message is then hidden in the LSB of the image. This method is

Correspondence should be addressed to Sanjai; sanjair83@gmail.com

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Nandha Engineering College
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Erode - 638 052.



Antenna

ANALYSIS OF 5.8GHZ HELICAL ANTENNA FOR THE APPLICATION OF UNMANNED AERIAL VEHICLE

P. Kokila	Assistant Professor, Department of ECE, Nandha Engineering College,
S.P.S. Harivignesh*	Final year Student, Department of ECE, Nandha Engineering College*Corresponding Author
D. Dhanuprasath	Final year Student, Department of ECE, Nandha Engineering College
M. Gokul Kumar	Final year Student, Department of ECE, Nandha Engineering College
K. Elamparithi	Final year Student, Department of ECE, Nandha Engineering College

ABSTRACT An Unmanned Aerial Vehicle (UAV) is an aircraft with practically no human pilot. The real life utilizations of UAV are armed force, naval force and flying corps. The parts utilized in UAV's are Radome, Antenna, Antenna handset regulator, Modulation and recurrence transformation unit, Data interface unit, Power control module, Lithium battery and Solar power band. The antenna are the main electronic parts of UAV. The antenna utilized in UAV are Patch antenna, Spiral antenna, SATCOM antenna, MFC antenna, Array antenna, Blade antenna and L-C Sector antenna and Helical antenna. Helical antenna is planned in the recurrence of 10GHz and its exhibition attributes are examined for the compelling correspondence in UAV.

KEYWORDS : Unmanned Aerial Vehicle, Helical antenna, frequency, gain and Directivity

INTRODUCTION

Unmanned Aerial Vehicle (UAV) is normally called as Drones that can access without human pilot. Inflatables are the primary robot that was created in the year 1849 that is during First World War with the assistance of the researcher A.M Low's. During First and Second World conflict, there was a gigantic changes in the advancement of Pilotless robots. The greater part of the pilotless robots assume a significant part in Military purposes[2]. Toward the early phase, UAV's are constrained by utilizing transmitter which was utilized to convey radio messages and the beneficiary in the plane. At first, the elevations and the distance covered by Drones were small[1]. The UAV's are like the monitored aircraft yet there is a few distinctions in the functional necessities. The fundamental parts utilized in UAV's are payloads, control stations, aircraft send off and sub-frameworks like recuperation, correspondence, transport and backing.

The correspondence frameworks in UAV is to give the information joins (all over) between the CS and the aircraft[4]. It is generally ordinarily at radio recurrence.

Uplink:

- Communicate flight way entrusting which is then put away in the aircraft Automatic Flight Control System (AFCS).
- Send constant flight control orders to the AFCS when man-tuned in flight is required.
- Send control orders to the aircraft mounted payloads and ancillaries. Transmit updated positional information to the aircraft INS/AFCS where relevant

Downlink

- Send aircraft positional information to the CS where important.
- Send payload symbolism as well as information to the CS.
- Send aircraft housekeeping information, for example fuel state, motor temperature, and so on to the CS.

Antennas are the main important component of UAV's[5]. The following antennas are used in UAV.

- Patch Antenna
- Spiral Antenna
- SATCOM Antenna
- MFC Antenna
- Array Antennas
- Blade Antenna
- L-C Sector Antenna

An antenna is a metallic construction that catches and sends radio electromagnetic waves. Radio wire comes in all shapes and size from little ones that can be found on your rooftop to stare at the TV to huge ones that catch signals from satellites a huge number of miles away. In PC and web remote applications, the most well-known sort of radio wire is the dish antenna utilized for satellite interchanges. The most straight forward is the length of wire associated toward one side to a transmitter or getting component is set a ways off from the communicated or collector and AC is conveyed to or from the antenna through a RF transmission line, likewise called a feed line or feeder. The antennas that space correspondence and route utilizes are a unique bowl formed radio wire that centre transmissions at a solitary guide called an illustrative radio wire toward both catch and communicate electromagnetic waves. These radio wire move evenly estimated in hour point and in an upward direction estimated in azimuth to catch and send the transmission. Antenna exhibit a property known as correspondence, and that implies that a radio wire will keep up with similar qualities notwithstanding assuming it is communicating or getting.

In Helical antenna it works in two principle modes

1. Normal mode.
2. Axial mode.

In the typical mode the width and the pitch of the helix are little in contrast with the wavelength[6]. The hub mode helical antenna utilized in the field of UAV which is having high directivity and round polarization. The recurrence utilized for the pivotal mode helix antenna is 10GHz.

METHODS:

HELICAL ANTENNA:

Helical antenna is also called Helix antenna, it goes under the classification of Wire antenna. The recurrence scope of activity of Helical antenna is around 300MHz to 3GHz. Helical antenna works in Very High Frequency (VHF) and Ultra High Frequency (UHF) ranges.

The Helical antenna is a voyaging wave radio wire, the current goes along the radio wire and the stage shifts ceaselessly [7]. Helical radio wire is a specific antenna that is viewed as a cross breed between a circle radio wire and a dipole antenna.

Design Equations

- Directivity (D) = $12CA^2nS\lambda^2$ -----(1)

Where

,C=Circumference





DUROID SUBSTRATE MICROSTRIP PATCH ANTENNA DESIGN FOR WIRELESS CAPSULE ENDOSCOPY

Ms.P.Kokila	Assistant Professor, Department of ECE, Nandha Engineering College.
Ms.V.Logeswari	Assistant Professor, Department of ECE, Nandha Engineering College.
Yamuna Devi K*	Final year Student, Department of ECE, Nandha Engineering College. *Corresponding Author
Mythurikadevi S	Final year Student, Department of ECE, Nandha Engineering College.
Lithanya P	Final year Student, Department of ECE, Nandha Engineering College.

ABSTRACT Wireless network is the fast-growing technology. The world is moving towards the wireless technology and it is used each and everywhere. Wireless network is used in many ways and one of the applications is medical application. In wireless technology, Antennas play an important role in data transmission. Antennas are electronic eyes and ears of humans in the modern world. There are many applications of antenna in medical field. One of the applications is data transmission in wireless capsule endoscopy. Wireless capsule endoscopy is the advancement of wired endoscopy. Wireless capsule endoscopy is used to diagnose the problems in the gastro intestinal tract, stomach and intestines which cannot be identified from outer observation or through x-rays or any other tests. The doctors watch the travel of capsule in the display and diagnose the problems which will be easier for the treatment. The types of antennas in medical field are Ingestible antennas, On body wearable Antennas, Implantable antennas, Antenna for MRI, Microwave Imaging, Thermal Ablation. For wireless data transmission in wireless capsule endoscopy, Microstrip patch (MSP) antenna is designed using Duroid as substrate in the frequency of 2.45 GHz with efficiency of 88% and gain of 4.86 dB. Microstrip patch antenna is selected as it is smaller in size which is most important characteristic of capsule endoscopy. In MSP antenna, copper is used for ground and patch, Duroid is used as the dielectric medium for the substrate as it gives higher efficiency, higher gain and higher directivity.

KEYWORDS : Microstrip patch antenna, Wireless Capsule Endoscopy, Duroid, efficiency

1. INTRODUCTION:

In communication, Wireless technology plays a vital role. Wireless technology is more convenient to use than wired technology. Wireless technology is used in many applications such as medical application, cell phones wi-fi, security systems, walkie talkies, satellite communication. Wireless capsule endoscopy (WCE) is an important application of wireless technology in medical field. Wireless capsule endoscopy is used to identify the problems that aroused in digestive track. Capsule endoscopy is used for the patient where the problems cannot be identified by the wired endoscopy. In wired endoscopy long flexible tube with video camera is used to track the digestive area and the video is displayed in the monitor for the identification of problem for the doctor. In capsule endoscopy the patient swallows a tiny capsule that contains a small camera antenna inside it. The camera is used to take images and the antenna is used to transmit the images to the recorder that worn around the waist of the patient. Later, the images can be downloaded from the recorder and the problems can be diagnosed. The capsule in the patient's is flushed in the toilet and there is no need of retrieving the capsule. In capsule endoscopy, Gastrointestinal bleeding, celiac disease, alternative colitis can be diagnosed. Wireless capsule endoscopy is better and convenient than wired endoscopy for both the patient and doctor.

There are many types of antennas used in Wireless capsule endoscopy. In this paper, an MSP antenna is designed with Duroid as substrate for wireless capsule endoscopy in the frequency of 2.45 GHz. The MSP antenna is used at microwave frequencies. MSP antenna is used here as it is a kind of internal antenna smaller in size and light in weight which helps to reduce the size of the capsule. When the size of the capsule is smaller it is easier for the patient to swallow the capsule and the capsule can travel through the digestive track without any disturbance. The microstrip patches has various shapes such as rectangular, Square, triangular. Here, MSP antenna is designed in rectangular shape which are easily etched and fit in the capsule easily. The MSP antenna is compact in size which can provide the size betterment of the antenna for the patient's convenience. MSP antennas have the capacity to supporting multiple frequency bands.

The aim of the paper is to design the MSP antenna with Duroid as the dielectric medium in the substrate for wireless capsule endoscopy. The purpose of this paper is to design the substrate is the higher efficiency, higher gain and higher directivity which improves the performance of the antenna. The organization of the paper is as follows. The first part of the paper describes the design of MSP antenna. The second part of the paper describes the design of MSP antenna. The third part of the paper describes the result and discussion of MSP antenna.

The final part of the paper describes the conclusion of the proposed work.

2. DESIGNING OF MSP ANTENNA: DESIGN EQUATION:

i) Peak Gain:

$$G = kD \quad (1)$$

where k is antenna efficiency ($0 \leq k \leq 1$)

ii) Radiation Intensity:

$$U_m = \frac{Pr}{4\pi} \quad (2)$$

where Pr is Radiated Power

iii) Width of patch:

$$W = \frac{v_0 \sqrt{2}}{2f_r \sqrt{\epsilon_r + 1}} \quad (3)$$

iv) Effective dielectric constant:

$$\epsilon_{r_{eff}} = \frac{\epsilon_r + 1}{2} + \frac{\epsilon_r - 1}{2} \left[1 + 12 \frac{h}{W} \right]^{-1/2}$$

where ϵ_r is relative dielectric constant of the material

h is the height of the substrate

W is the width of the patch

v) Length of the patch:

$$\Delta L = h 0.412 \frac{(\epsilon_{r_{eff}} + 0.3) \left(\frac{W}{h} + 0.264 \right)}{(\epsilon_{r_{eff}} - 0.258) \left(\frac{W}{h} + 0.8 \right)} \quad (5)$$

$$L = \frac{v_0}{2f_r \sqrt{\epsilon_{r_{eff}}}} - 2\Delta L \quad (6)$$

DESIGN OF MICROSTRIP PATCH ANTENNA:

Figure 1: Design of MSP antenna

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MetalCloud: Wireless and Battery Operated Handheld Storage Drive

Vigneshwaran S¹, Sabarish S², Karthik prabu V³, Kailash M⁴, Brindha S⁵

¹UG – Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

²UG - Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

³UG - Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

⁴UG - Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

⁵Assistant Professor, - Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

Abstract: Recent advances in Internet-of-Thing's technology have opened the doors to new scenarios for biosensor applications. Flexibility, portability, and remote control and access are of utmost importance to move these devices to people's homes or enterprises. More external hard drives and pen drives appearing, more issues are reported by users. Also, many users reported that their external hard drive keeps disconnecting in Windows 10. Some specific models also have issues. In case some important data that has been affected by infected files, viruses or malware, surely it will need a good protection. Protect from file loss, malware, hardware failure. In this project, an innovative wireless handheld storage device named Metal Cloud is a wireless flash disk is presented. Metal Cloud Model include machine learning workloads, query-intensive data warehouses, and ingestion and processing of IoT sensor data. When connected with power supply, can be used as wireless storage. Backup phone contacts and photos. It can back up data to cloud storage providers with the Dashboard software. With that program, one can access their files on the hard drive via the web. No longer have to connect their drive to PCs to transfer data, since the device also supports both Android and iOS. Then users can also transfer files between other cloud services. attach, detach, swap, and edit volumes can be used. The hard drives gives remote file access, extra cloud storage and have handy web backup options. Adding many accounts is used, including multiple accounts of the same service. To keep accounts and files safe, the program has a master password feature. Enable it to keep unauthorized users out and encrypt data with a key before uploading.

I. INTRODUCTION

EXTERNAL STORAGE

An external storage device, also referred to as auxiliary storage and secondary storage, is a device that contains all the addressable data storage that is not inside a computer's main storage or memory. An external storage device can be removable or non-removable, temporary or permanent, and accessible over a wired or wireless network. External storage enables users to store data separately from a computer's main or primary storage and memory at a relatively low cost. It increases storage capacity without having to open up a system. External storage is often used to store information that's accessed less frequently by applications running on a desktop, laptop, server or mobile device, such as an Android or iOS smartphone or tablet. For PCs, an external storage device often consists of stationary or portable hard disk drives (HDDs), or solid-state drives (SSDs) attached via a USB or FireWire connection, or wirelessly. For enterprises, an external storage device can serve as primary storage connected to servers through Ethernet or Fibre Channel switches, or as secondary storage for backup and archiving purposes. External storage offers HDD, all-flash and hybrid storage arrays for block-based, file-based or object storage, or a mix of these three protocols known as unified storage. examples of external storage. Another common use case for an external storage device is to transport data between on-site and off-site computer systems. When moving large amounts of data to the cloud, providers will often use external storage devices in a practice known as cloud seeding. Because moving tens of terabytes of data over a network can take hours or days, customers place their data on an external storage device and then send the device to their chosen provider to copy locally. After the initial seeding, only changed data will move across the network to the cloud for backup, archiving or disaster recovery (DR) purposes.

II LITERATURE SURVEY

DESIGN AND IMPLEMENTATION OF VIRTUAL STREAM MANAGEMENT FOR NAND FLASH-BASED STORAGE



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Nandha Engineering College
(Autonomous)
Erode - 638 052.

An Efficient 2D-DCT/IDCT Architecture for Portable HEVC- Encoding

AN.Ramalakshmi¹, PGScholar, Department of Electronics and communication engineering,
G.prabhakaran², Assistant professor, Department of Electronics and communication engineering.

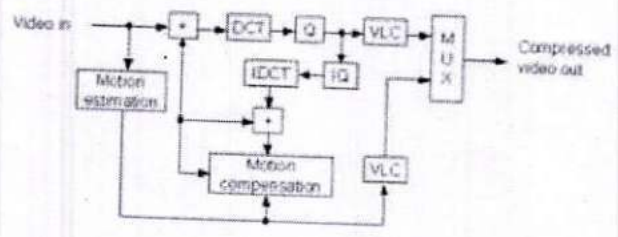
Abstract - time period High potency Video cryptography (HEVC) codec for sensible phones, tablets, camcorders, and televisions square measure in nice demand. This would like motivates one for associate degree economical realization of separate trigonometric function remodel (DCT) and Inverse-DCT (IDCT) for HEVC separate trigonometric function remodel (DCT) is supported by most of recent video standards whole number DCT proves to be extremely advantageous in value and speed for hardware implementation This proposes a quick pipelined 2 Dimensional separate trigonometric function remodel (2D DCT) on FPGA with quantization, which might be used as a core in video compression hardware, likewise as a Verilog style. The methodologies employed in this style square measure to use extremely parallel and heavily pipelined circuits to extend throughout whereas remaining platform freelance. As a result, within the projected system, pipeline design is employed to scale back the procedure complexness of HEVC compared to the present system. in comparison to basic and existing models, the projected style with 32-point length is decrease on space economical and fewer Area-Delay product, severally It is employed in product that need a time period HEVC encoder and decoder, like transportable shopper physics High potency Video cryptography (HEVC) has been selected as future customary for several video cryptography application and has vital performance improvement compared to its predecessors.

I. Introduction

As shortly mentioned in introduction, video knowledge encompasses a quite huge volume that leads in 2 vital issues. At first, an oversized cupboard space needs to be reserved so as to store a video file and second after we wish to transmit a video sequence, we tend to need large information measure to try and do thus. to raised perceive this drawing, we tend to gift an easy example. A

typical video film has length roughly ninety minutes roughly .

If assumed HD resolution and framerate at thirty Federal Protective Service, then we've 1920x1080x30x3x90x60 bytes to store info for three color channels (e.g. RGB or YUV) with 8-bit color depth. Thus, we want regarding 900 GB (1 TB may be a typical hard disc size) to store a typical Blu-Ray film, while not embrace audio knowledge. Now, one has to transmit this content in an exceedingly live streaming application, send 1920*1080*3*30*8 bits per second, so as to check video while not stall effects. This volume is translated into one.5 Gb/sec, which needs large information measure that's troublesome to be found in daily shopper merchandise. Finally, in step with Cisco surveys, two of three knowledge packets that are send anytime over net network, belong to video content. Consequently, we tend to understand that video compression may be a huge deal in our digital epoch and the way it directly affects our lives, as a result of video is all over among us.



Architectural diagram of a typical video codec

Initially, compression algorithms are often distinguished in 2 classes according the kind of elaboration that they perform on camera knowledge. the 2 classes ar referred to as lossy and lossless compressors. lossless compressors ar those who reconstructed knowledge on decoders aspect, ar precisely equal with those who inserted as input in encoder aspect. lossy compressors ar those who reconstructed knowledge, ar slightly totally different from input, in this method that



A Safe Cognitive Radio Spectrum Handoff Method Using Coordinating Cognitive User

Mrs. T. G. Dhaaranil, Chandru D.², Harini V.G.³, Madhumitha G. S.⁴
 Assistant Professor, Department of Electronics and Communication Engineering¹
 Final Year Students, Department of Electronics and Communication Engineering^{2,3,4}
 Nandha Engineering College, Erode, Tamil Nadu, India

Abstract: A new cognitive user emulation attack (CUEA) in a cognitive radio network (CRN), which could be utilized by intruders during spectrum handoff is introduced. The need for more efficient spectrum utilization in our increasingly digitalized society is becoming more important. This has given rise to the variety of new security threats. A safe handoff mechanism that could successfully counter such an attack by introducing a coordinating cognitive user that computes the level of trust of each cognitive user based on its behavioral characteristics is proposed. Malicious users could be effectively identified by the coordinating cognitive user by looking up the trust values. The activity of the proposed mechanism is validated using MATLAB simulation. The simulation executed describes the utilization of the proposed mechanism by correctly identifying the probability of false detection, detection rate, incorrect detection shown as it decreases the data transmission time or increases the transmission rates of primary user's signals.

Keywords: Cognitive User Emulation Attack

I. INTRODUCTION

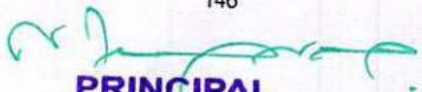
Bandwidth consumption and spectrum usage have increased significantly in the development of Internet-connected devices and services. Therefore, the available spectrum must be used more efficiently to meet the growing demand for bandwidth. One such approach is the use of cognitive radio (CR) technology to facilitate spectrum use. Specifically, CRs allow unlicensed or cognitive users (CUs) to use free channels/scopes from basic/licensed users (PUs). The main functions performed by a CR to use the free spectrum of a PU are spectrum identification, spectrum decision-making, spectrum sharing (access), and spectrum handover (or spectrum mobility).

The first three main features (i.e., Sensing, Decision and Sharing) CUs do not feel the middle, recognize idle channel and selects the idle channel among simple bands. The CU avoids interference in the PU and generates a transport channel to the selected strip. The latest key function (i.e., Handoff / Mobility) must switch the current transport channel to another available channel during data transfer and remember the first three main functions. In addition, packet transport, spectrum detection, and PU receipts can also enter additional delays during spectrum transmission. Thus, during spectrum transmission, even a malicious user (MU) can use this delay and simulate legitimate CU transmission (HCU) to degrade network performance.

Existing handoff mechanisms can be broadly classified into proactive and reactive strategies or engaged and not engaged spectrum strategies. The engaged spectrum handoff schemes assume that fewer frequency channels are engaged for the PU. Conversely, a handoff scheme without an occupied spectrum assumes that all frequency channels are occupied by at least one PU. Traditional handoff mechanisms, such as those present in all CUs, are expected to be serviceable and reliable in the Cognitive Radio Network Cell (CRNC) environment. However, in practice, a CU can be compromised by an attacker to carry out a malicious attacks.

Thus, a legitimate CU or new user (NU) compromised by an attacker can act like a MU in CRNC. Therefore, if the MU repeatedly spoofs the signal of the serving PU, legitimate CUs may be blocked from accessing the channel. It also degrades system performance and handoff security. Therefore, it is necessary to distinguish between HCUs and MUs to achieve reliable spectral transmission. Achieving spectral security in cognitive radio networks (CRNs), despite its importance, is an area that has not been well studied. In addition, the types and characteristics of potential attacks among spectrum sensing, sharing and Handoff mechanisms are evolving. Therefore, this starts with a new security threat in CRN during handover




PRINCIPAL
 Nandha Engineering College
 (Autonomous)
 Erode - 638 052.

ENHANCED AUTOMATED TELLER MACHINE USING GSM

Dhamodharan B¹, Jayasurya R², Aravinth bala S³,
Kavin N⁴, Rathanasabhpathy G⁵

¹²³⁴ Student, ⁵ Assistant Professor, Department of ECE
Nandha Engineering College. Erode – 52, India

Abstract: An automated teller machine (ATM) or cash machine is an electronic telecommunication device that is used to enable customers to perform the financial transaction, such that cash withdrawals, deposits, fund transfers, balanced Enquiries or account information Enquiries, at any time and without any need for direct interaction with bank staff. Using Cash machine, people can get money instantly, so people need the ATM but ATM is safe to use or not? This question was rising in our mind because the money was theft from ATM. These days, thieves are becoming smarter because they are using cameras, magnetic readers and other scanning devices to get data from customers. To overcome from this issue we specifically designed Mobile Controlled ATM based on GSM communication, the main feature is to avoid the usage of keyboard instead of that it was controlled by mobile phone.

Key words: Automated Teller Machine, Mobile controlled ATM, GSM

I. INTRODUCTION

In human life, money is more important. Humans use money in day to day life including buying things like living or non living things. Money is an essential component of life. Money saving is more important in human life. So people need bank to save money for emergency time uses. But now people don't need to go for bank directly there is a way to save and get money return back using of cash machine. Now a day's cash machines are most used to money deposit and withdrawals as well as balance enquiries. Cash machines are needed to update on new safety technology. ATM are updated a using keypad, touch display, and other systems. So safety of the ATM as improved. The use of pinhole cameras and scanning devices enable bank accounts

to be easily stolen. Thus, mobile controlled cash machines are the easiest and safest way to use ATMs. The GSM used mobile message system is used to control the cash machine

II. LITERATURE SURVEY

According to a literature review of cash machine systems, it has already been applied and tested in a number of studies. Distribution, monitoring, and measuring the amount of money in the cash machine, mini statements as well as bill creation, are all included in the suggested model. Data may be transmitted to the user and admin for invoicing for individual residences, cash deposit, cash withdrawals, and ATM safety. The focus of this article was on mobile controlled cash machine using of GSM. The GSM has used to controller of the cash machine. [1] This will stop the unauthorized usage of ATM cards by person other than the owner but not eliminate the process. [5] This project shows on recognition based Verification system has been implemented for many ATMs for safety purposes. This work deals with Biometric recognition like fingerprints, face recognition to identify person. In addition, Internet of things has been used to enhance the security of the Money and to give timely updates. Also, one time password will be sent to user to verify identity but not gives full security for user. [12] The system gives only transactions through SMS but not complete control using mobile its gives alert messages only.

III. EXISTING WORK

In the cash machine is very important to bank and card holders. So we present a GSM based mobile controlled cash machine. Money is an important part of our lives. The current system may





Research Article

IOT Based Home Security System Using Microcontroller

Prabakar.SA^{*1}, Sanjai Kumar.K.M¹, Yuhendran.G¹, Praveen Santhoshkumar.G¹

¹Department of Electronics and Communications Engineering, Nandha Engineering College, Tamilnadu, India.

In this fast moving world Safety is considered as the most important aspect of day today life. Due to this pandemic situation of Covid-19, the increase of unemployment rate and the increase of price for the products that we are using in our day to day life has led the opportunity to increase of crime rate. In this situation it is our responsibility to protect our belongings and to be cautious about the theft in homes. However, if we choose to fix the CCTV camera it is too expensive to buy and fix and moreover it requires a lots of space and memory for continuous recording. In this condition, it is difficult to appoint a person for maintaining the things or fixing a high effective and high quality security systems. In that aspect, we are looking for the low cost and high effective security systems so it can be affordable even for the middle and low class peoples who are living in the cities and rural areas. This project main motive is to make a well secured environment not only for rich peoples and also the peoples in rural area and middle class peoples without spending any high cost. The System which we've been used will display live streaming video that will be monitored by the smartphone from any part of the world using IOT module. It is also designed with buzzer which alert the neighbor about the threat to do the precautions. We also developed an app from which we can see the live video and we can monitor house.

Keywords: Micro-controller, Security System, IOT, Piezoelectric Transducer.

1. Introduction

The Internet of Things (IOT) is a network of physical devices, vehicles, buildings, and other objects, electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. In 2013, the Internet of Things Global Standards Initiative (IOTGSI) defined IOT as the "infrastructure of the information society". Smart devices / systems based on the Internet of Things (IOT) platform have entered a golden age of fast-growing technology in the field of home security.

Now-a-days, Security has become the most challenging task. So, it ensures that the safety and security has become more essential. The major intention of this project is to make a smart monitoring device which monitors the area in which it is implemented. The system consist of web camera that will control the doors using a camera module used by a small controller. Whenever anyone stood in front of the door the camera would detect and send a photo to the cell phone. This process is very helpful for the owner to look forward the problem in any part of the world. Our main objective is to build high quality security for middle class peoples.

2. Existing Work

The existing system for anti theft flooring system using raspberry pi Using IOT are a system that will control the doors using the camera module used by the raspberry pi. The plan mainly consists of a webcam for detecting guests, a Raspberry Pi Model 3 with a built-in WiFi module, as well as a portable device to connect to

Correspondence should be addressed to
Prabakar.SA; prabakar.18ec054@nandhaengg.org

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Nandha Engineering College
(Autonomous)
Erode 638 052.

Research Article

Improved Security of Hidden Data Based on Steganography Using ECC Method

E. K. ArulKarthick¹, R. Sanjai^{*1}, B. Vignesh¹, A. Rajeshwaran¹, M. Navaneethan¹

¹Department of Electronics and Communications Engineering, Nandha Engineering College, Tamilnadu, India.

Cryptography and steganography are well-known characteristics in the realm of computer networks for best security purposes. The key concept is to send the data in a secure manner. As a result, providing an adequate level of security for data transfer is critical. It should also minimize the security algorithm's time complexity. To encrypt the data and image, we used the "Elliptic Curve Cryptography" approach. To transfer the data securely, a "Least Significant Bit" steganography algorithm is employed insert encrypted data to be hidden inside the image. The image's encrypted data is subsequently decoded using the decryption method. The decrypted data is then used to extract the hidden data. The image is then compressed before being sent over the internet. To simulate the outcomes, MATLAB is utilized indicating that it has the power of good embedding and protection.

Keywords: ECC, Steganography, LSB, GUI, RSA, MATLAB, DES.

1. Introduction

Elliptic Curve Cryptography (ECC) is a proposal for asymmetric cryptography cryptology. How to set up a short loop numerical position in a specified location. Elliptic curve cryptography requires a small key compared to the non-elliptic cryptographic curve to provide the same level of security compared to other algorithms and techniques. Elliptic curves can be applied to key generation, digital signatures, random key generators, and other functions. Indirectly, it can be used for encryption by combining key sharing with an uneven encryption system. They are also used in other complete factorization algorithms based on elliptic curves that have applications in cryptographic systems such as: Lenstra elliptic curve factorization.

The least significant bit (LSB) is the binary number one bit. The value that specifies the unit value, that is, determines whether a number is even to or odd. The less important one is sometimes called the lower order or the rightmost bit. This is related to the norm of writing the least significant digit further to the right in position denotation.

This is the least significant digit of a decimal integer, that is Rightmost digit. It is common to assign a position number in the range 0 to N1 to each bit. The number of bits in the binary encoding utilized in this example is N. Usually this is just an exponent of the corresponding bit weights in the base. The manufacturer of some control processing units assigns bit numbers in the opposite way, but the concept of the least significant bit itself remains unidentified as a threat to the unit bits. As a result, the least significant bit is the number of bits that is closest to the least significant bit and contains the least significant bit.

The block diagram in Fig. 1 shows that the message is sent from the sender to Receiver. The message is then hidden in the LSB of the image. This method is

Correspondence should be addressed to Sanjai; sanjair83@gmail.com

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Nandha Engineering College
(Autonomous)
Erode - 638 052.

SMART WATER TANK MONITORING SYSTEM USING NODEMCU WITH ANDROID APPLICATION

Poornachandran S¹, Ravinath D², Santhosh P³, Tamilselvan D⁴, Srinevasan M⁵

¹⁻⁴ UG - Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

⁵ Assistance Professor, Electronics and Communication Engineering, Nandha Engineering College, Erode, Tamilnadu

Abstract: Everyone on the planet requires water to live. Humans aren't the only creature on Earth that needs water to live. Fresh water is currently in short supply. Only 0.03 percent of the water on our planet is fresh water. As the world's population grows, the amount of water available decreases. In order to conserve water for the future generation of water. In this work, a smart water tank monitoring system is suggested that uses a Node MCU and an Android application to monitor the real-time water amount in the tank. This is a new method to IOT (Internet of Things) based water quantity monitoring. This system is made up of sensors that measure the quantity of water in the form of water level. The measured values from the sensors are processed by Node MCU, and the processed data are sent through IOT protocol to the main controller, Node MCU. Finally, take use of cloud computing. Our project also included an android application that used IoT to monitor and regulate water quantity.

Key words: Water level monitoring, real time, Node MCU, IOT

1. INTRODUCTION

In human life, water is the most crucial natural resource. Humans use water for practically every aspect of their everyday lives, including washing, cleaning, bathing, irrigation, and industrial demands. Water is an essential component of life. Water is mostly utilised for everyday activities such as drinking, bathing, cooking, and cleaning. There is enough water, especially in the city and in the village. Water requirements are currently increasing, both in the city and in the hamlet, as the population grows. Increasing water demands, of course, necessitates an expanding system of clean water supply, which must be maintained in order to fulfil the needs of individuals who require clean water on a daily basis. Especially in densely populated areas where the need Water tanks are an important equipment that practically every community, government, and private organization today has as a clean water storage container for everyday usage. As is well known, the availability of clean water is a crucial component of customer happiness and productivity, as is safety, comfort, and energy efficiency. The water tank on the roof top/tower requires a pump for water filling and in its distribution uses gravitational energy to drain water to numerous points of usage, hence the water tank above is preferred to prevent problems like power outages. d for clean water is high. "Toren" equipment, pumps, pipe systems, and other supporting equipment are necessary in water distribution operations from one area to another. Because the "toren" used to hold a water bath is normally managed manually, the water level is frequently unknown, causing the pump to ignite and spill water when someone forgets to switch off the pump machine. This will result in wasted electrical energy use, as well as damage to the walls due to the moisture, which can lead to the growth of moss. As a result, an automatic tool that can conduct remote control to monitor the water level is required, so that the water pump may be shut off as soon as the water level reaches the tank's maximum capacity. Water level sensing systems have been developed in the past, particularly in reservoirs with several uses to support human water demands, such as irrigation, hydropower, and recreational amenities.

2. LITERATURE SURVEY

According to a literature review of water management systems, it has already been applied and tested in a number of studies. Distribution, monitoring, and measuring the amount of water in the tank, as well as bill creation, are all included in the suggested model. Data may be transmitted to the user and admin for invoicing for individual residences, water flow monitoring, water level monitoring, and pipe leakage monitoring using the current IoT platform. The focus of this article was on laser sensors for control and real-time monitoring. The pulses from all channels are counted when the user switches on the gadget. The quantity of water consumed by all users is monitored and managed by a controller. The amount of water in the main tank is monitored using water level sensors.



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Nandha Engineering College
(Autonomous)
Erode - 630 052.

High-Speed Area-Efficient VLSI design of Three-Operand Binary Adder

A. Priyanga¹, C.N. Marimuthu²

PG Scholar, Department of Electronics and Communication Engineering, Nandha Engineering College,
Erode, Tamil Nadu, India¹

Professor, Department of Electronics and Communication Engineering, Nandha Engineering College, Erode,
Tamil Nadu, India²

ABSTRACT: Carry Save Adder (CSA) is the extensively used fashion to perform the three operand addition. This adder is that the start purposeful unit to perform fully completely different calculation in cryptography and pseudorandom bit generator (PRBG) rule. However, the ripple carry stage in the CSA leads to a high propagation delay of $O(n)$. Also, the complement of the carry is generated and propagated inside the carry network of the proposed adder in order to drop the detention. It is one of the foremost promising ways to achieve power consumption for the summation of big operands. This study presents a new replacement adder architecture, specifically designed for big operands, supports on the premise that in massive parallel-prefix adders the smallest significant carries are produced much sooner than the most-significant ones. This ends up in decrease of the area of the summation blocks while not compromising the speed. The results of the proposed adder reported is quicker than the CSA for 32-, 64- and 128-bit design severally.

KEYWORDS: Three-operand adder, Pseudorandom bit generator (PRBG), carry save adder (CSA)

I. INTRODUCTION

To achieve optimum system performance whereas maintaining physical security, it's necessary to implement the cryptography algorithms on hardware standard arithmetic like standard mathematical operation, standard multiplication and standard addition is often used for the arithmetic operations in varied cryptography algorithms so, and the performance of the cryptography formula depends on the economical implementation of the congruential standard operation. The foremost economical approach to implement the standard multiplication and mathematical operation is that the Montgomery formula whose important operation relies on three-operand binary addition. The three-operand binary addition is additionally a primary operation within the linear congruential generator (LCG) based mostly pseudo-random bit generators (PRBG) like coupled LCG (CLCG), changed dual-CLCG (MDCLCG) and matched variable input LCG (CVLCG) changed dual-CLCG (MDCLCG) is that the most secure and extremely random PRBG technique among all the LCG-based and alternative existing PRBG ways. It's polynomial-time unpredictable and secure if $n \geq 32$ -bits. Therefore, the safety of the MDCLCG enhances with the rise of quantity size. However, the region and important path delay will increase linearly since its hardware design consists of 4 three-operand modulo- $2n$ adders, 2 comparators, four multiplexer's space. Hence, the performance of the MDCLCG will be bettered by the provident perpetration of the three-operand adder. The three-operand binary addition are applied either used as a pair of two-operand adders or 1 three-operand adder. The three-operand binary addition may be allotted either by mistreatment 2 two-operand adders or one three-operand adder. Carry-save adder (CS3A) is that the area-efficient and wide adopted technique to perform the three-operand binary addition at intervals the quality arithmetic used in cryptography algorithms and PRBG ways that. However, the longer carry propagation delay at intervals the ripple-carry stage of CS3A seriously influences the performance of the MDCLCG and different cryptography architectures on IoT based hardware devices. Therefore on dock the veritably important path detention, a prefixed two-operand adder like Han-Carlson (HCA) may be used for three-operand double addition. It reduces the vital path delay within the order of $O(\log_2 n)$ however will increase the region within the order of $O(n \log_2 n)$. Therefore, it's a necessity to develop associate economical VLSI style to carry out the short three-operand binary addition with minimum hardware resources. Hence, a novel high-speed space-efficient adder technique is planned practice pre-compute bitwise addition followed by carry-prefix computation logic to perform the three-operand addition throughout this paper that consumes considerably lower gate space whereas minimizing the propagation detention compared to the HCA- grounded three-operand adder (HC3A). The planned adder design is enforced with the Verilog HDL, then synthesized with industrial

Binary Vedic Multiplication Using Carry Save Adder CS3A based on Modified Approximate Three Operand Adder

A. Priyanga¹, C.N. Marimuthu²

¹PG Scholar, Department of Electronics and Communication Engineering, Nandha Engineering College.
²- Professor, Department of Electronics and Communication Engineering, Nandha Engineering College.

Abstract- Consumer electronics markets have increased demand for high-speed, low-power adders with huge operands to be used in new portable systems. One of the most promising ways for achieving a trade-off between delay and power consumption for the addition of big operands is the CSA adder. In this paper, a VLSI architecture is proposed based on Binary Vedic multiplication using Carry save adder. The suggested changing binary Vedic multiplication technique is more efficient in terms of delay. The Vedic multiplication method can be extended for a larger bit size. The Xilinx ISE Design Suite 14.2 is used for circuit synthesis. The simulation results for 4 bit and 8 bit multiplication. VLSI implementation results when compared with existing it reveal that the suggested adder saves more than 12% of energy and reduces the area-delay-product by more than 5%.

Index Terms— Three-operand adder, carry save adder (CSA), Vedic Multiplication.

I. INTRODUCTION:

The word "Vedic" is derived from the word "Veda" which means the store-house of all knowledge. The word "Vedic" comes from the word "Veda" which implies the store-house of all information Vedic arithmetic is associate ancient system of arithmetic existed in Asian nation. Vedic arithmetic is far less complicated and simple to know than typical mathematic. Developing digital systems is hampered by the number. The spread of strategies for implementing quick multipliers within the literature. Another approach for implementing an efficient number is that the Vedic multiplication formula. In Vedic arithmetic, there are three ways to travel concerning multiplying. Vedic of the 3 strategies is generic, that means it's going to be employed in any situation; the opposite are situation-specific. Urdhva Tiryakbhyam is that

the primary vedic multiplication formula. Literally, it signifies in 2 directions: up and down. This multiplier number multiplies 2 operands vertically and crosswise then, adds the ensuing sums.

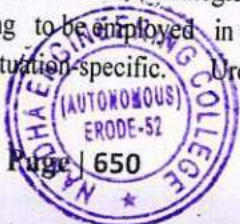
$$\begin{array}{r}
 4 \\
 \times 3 \\
 \hline
 1 \\
 1 \\
 1 \\
 1 \\
 \hline
 1
 \end{array}
 \begin{array}{l}
 \leftarrow 3 \times 6 \\
 \leftarrow 3 \times 4 \\
 \leftarrow 3 \times 6 \\
 \leftarrow 3 \times 4
 \end{array}$$

Fig 1: 2x2 Vedic Mutlification

Multipliers are key parts of the many high performance systems such as FIR filters, Microprocessors, Digital Signal Processors etc. To perform multiplications, an oversized range of adders or parts are used. The traditional system of arithmetic named as vedic multiplier was rediscovered from the Vedas. In distinction to traditional method, this vedic multiplier is easier and simple to know.

It includes sixteen-sutras or formulae and 13 sub-sutras. The variability of applications of this multiplier includes theory of numbers, compound multiplication, pure mathematics operation, calculus, squaring, cubing, cube root, easy quadratic, geometry and marvellous to vedic Numeric Code. The speed is a vital consider the third-dimensional VLSI drawback and conjointly a constraint within the multiplication operation. Therefore increase in speed will be achieved by sinking the quantity of steps within the computation method. Therefore the potency of the system will be evaluated by the assistance of Speed and space consumed by the parts of number determines the potency of a system.

The technique use in this multiplier is principally supported sixteen Sutras. Vedic multiplier techniques





Autonomous Car Parking System Using GSM and RFID Module

Barath R¹, Karthick Kumar K¹, Karthick R¹, Dr C N Marimuthu M.E.,Ph.d²

Department of ECE, Nandha Engineering College, Erode, India¹

Professor & Dean, Department of ECE, Nandha Engineering College, Erode, India²

ABSTRACT: In this fast-moving world of technologies, everyone finds difficult in some platform. Mainly the people spend most of their time in finding the parking slot areas to park the car. While parking the car in parking slot area, the peoples face some difficulties like spending the time and work. People want to use those time for some other important work. While considering people in parking the car in commercial places like shopping malls, cinema theatres, etc...first they have to find the space, only after that they park the car. We designed the solution for to save the humans time and work by automation technology. This technology would designed by hardware and software. This technology is named as Autonomous car parking system using GSM and RFID module. This project will give the exact solution for people to park the car easily and get the car parking slot with the help of some modules. The Autonomous car parking system enables a vehicle to drive itself and park the car in parking area without any human help. We have designed car parking areas of driverless car for detecting and parking the car automatically. Once the car reached the car parking area, the car will start to detect the empty parking slot and detect the road line based on detecting technology. The car will keep on moving the road as well as it detects the free space in both the sides. Once it detected the available parking slot then, the car gets parked and read the Parking slot number using RFID module. Once it was read parking slot number, the slot number and car current status will share through message to the car owner or car driver using GSM module.

KEYWORDS: Hardware, Software, RFID, GSM Module

I. INTRODUCTION

Even if we find the space for parking the vehicle so much time is wasted in finding the exact vehicle parking slot area. It results in more fuel consumption and it is not environment friendly. If we could automatically detect the exact vacant position of the parking slot, it would be helpful not only for the drivers but also for the society. This concept of autonomous car parking system was driven by two main factors: that is need for car parking space and aware of available land. The Autonomous car parking system uses a mechanical device for transporting vehicles to parking spaces in order to conserve a significant amount of space that would otherwise be spent manual parking. The ACPS technology is also known by variety of other names like Automated parking facility (APF), Real time Car parking system (RTCPS), Smart parking System (SPS). All car parking technology will reduce the car parking spaces and saving the time and human work. We designed car parking system technology. The process is that, when the car enters into the parking area, the driver exit the care and enable the parking mode. Once it enabled the car will entering into the parking area and find the parking slot whether the place is vacant or not, Once it find the parking place, the car will parked automatically. Till the process is already exist. We additionally added some extra features like while parking the car in vacant place, once it parked the car will detect the car parking slot number by the help of Radio frequency identification (RFID) module and send the parking slot number to Driver through wireless medium with the help of GSM Module.

II. LITERATURE SURVEY

1. REAL TIME CAR PARKING SYSTEM USING IMAGE PROCESSING

Car parking areas are an essential concept in a vast scope of traffic and civilian applications. With the massive issue of urban traffic congestion and the ever-increasing scarcity of parking spaces, these car parking locations must be well-equipped with autonomous parking data and guidance systems. The counting of parked cars and finding the available car parking site are two goals of intelligent parking lot management. Using image processing technologies, this research presents a new approach for giving parking information and guidance. Counting the number of parked cars is part of the proposed system. Instead of employing electronic sensors or modules placed in the floor, the auto parking system uses pictures to detect the vehicles. At the entrance to the car parking area, a camera has been installed. The



ANALYSIS AND DESIGN OF FIR FILTER USING MODIFIED CARRY LOOK AHEAD ADDER BASED ON DECIMAL FPGA LOGIC BLOCK ARCHITECTURES

¹ADLENEPRIYATHARISINI J, ²KAVITHA.S

¹PG scholar, Department of Electronics and Communication Engineering, Nandha Engineering College (Autonomous)

²Professors, Department of Electronics and Communication Engineering, Nandha Engineering College (Autonomous)

Abstract -The dynamic growth in portable multimedia system devices and communication system has exaggerated the demand for space and power saving high speed Digital Signal processing (DSP) system. The Finite Impulse Response (FIR) Filter is the necessary part in designing an digital signal process system. Usage of digital Finite Impulse Response (FIR) filter is one of the prime block in DSP. Digital multipliers and adders are the foremost crucial arithmetic purposeful units in FIR filters and conjointly decide the performance of whole system. Thus, the low grid style has become a significant performance goal. This paper proposes an FIR filter that is designed using Carry-Look ahead adder and multiplier; where the multiplier is proposed by internal circuit of Modified Carry Look ahead Adder. CLA adder is employed for addition operation that uses quickest carry generation technique to increase the speed by reducing the time needed to repair carry bits and multiplier factor performs multiplication method in hierarchical manner. Thus, the planned methodology will minimize the active power and delay of the FIR filter. The tentative results shows that the FIR filter multiplier factor methodology achieves less quantity of delay and power reduction compared to traditional methodology. The planned FIR filter is programmed using Verilog code and was synthesized and enforced using Xilinx ISE 14.2 tool. and therefore the power is analyzed using power analyzer.

I. INTRODUCTION

1.1 Field-Programmable Gate Array (FPGA)

An FPGA is an integrated circuit that can be programmed after manufacturing to function as any digital circuit determined by the designer. The key difference between FPGA and Application Specific Integrated Circuit (ASIC) is that the ASIC can only be used for a certain application. The major building blocks in modern FPGAs consist of Configurable Logic Blocks (CLBs), Interconnections, Input/output Blocks (IOBs) and embedded blocks such as DSP blocks. An overview of the architecture of modern FPGAs is shown in figure 1.1.

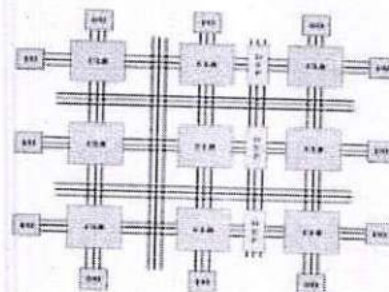


Figure.1.1. An overview of a typical FPGA architecture.

The red boxes indicate a number of CLB blocks distributed over an FPGA. The green boxes indicate input/output blocks of an FPGA. The blue boxes indicate DSP blocks where the focus of this work lies. The vertically and horizontally distributed lines indicate interconnections between the blocks.



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N.SUBHARATHNA PG Scholar, Department of Electronics and Communication Engineering, Nandha Engineering College.

K.SHARMILEE Professor, Department of Electronics and Communication Engineering, Nandha Engineering College.

Abstract: A memristor is associate electrical half that limits or regulates the flow of electrical current in associate extremely circuit and remembers the number of charge that has previously flowed through it. Memristors unit of measurement non-volatile, meaning that they preserve memory whereas not power. The definition of memristor has been broadened to include any kind of non-volatile memory that is supported resistance amendment, which will increase the flow of current in one direction and reduces the flow of current at intervals the opposite means. Ternary Content Addressable Memory (TCAM) cell that employs memristors as storage element. The TCAM cell wants two memristors nonparallel to perform the quality memory operations (read and write) further more as a result of the search and matching operations for TCAM; this memory cell is analyzed with connexion fully completely different choices (such as memristance vary and voltage threshold) of the memristors to technique fast and expeditiously the ternary information. Comparison with completely different memristor-based CAMs furthermore as CMOS-based TCAMs shows that the projected cell offers vital blessings in terms of power dissipation, reduced semiconductor count and search/match

operation performance.

I. Introduction:

MOBILE communication plays a really necessary role in trendy life. With the progress of telecommunication technology, an oversized range of applications area unit designed, like video stream, on-line game, navigation, etc., However, this feature would induce significant run power since an oversized range of transistors area unit used. this means that the TCAM would consume a lot of power and pay a lot of time to recover these knowledge. A memristor (memory resistor) could be a non-linear two-terminal electrical part relating charge and magnetic flux linkage. fantastic growth within the range of net users and also the increasing quality of information measure hungry real time applications have resulted in an exceedingly demand for very high-speed networks. the web could be a mesh of routers and switches, that method knowledge packets and forwards them toward their destinations. every packet contains a header and a payload. The header contains info like a supply address, a destination address, the info length, a sequence range and also the knowledge form of the packet.

A network switch transfers associate degree



Design of Hybrid full adder Topology using Modified Triplet Logic

M.Pavithra¹ PG Scholar, Department of Electronics and communication engineering,
R.Murugasamy² Assistant professor, Department of Electronics and communication engineering.

ABSTRACT

In the recent era, area and power reduction procedure is gaining most attention for achieving minimum energy consumption. Full adder is the primary computational arithmetic block in numerous of the computing executions and hence is the critical component of ALU. Various existing full adders proposed in literature fail to accomplish low power delay product (PDP) and lacks driving strength when used in chains structure. In this project a novel 14T hybrid full adders have been proposed to reduce to area and power consumption. In addition the proposed full adder design is implemented in 4 bit ripple carry adder chain structure to improve the driving strength and reduce the overall silicon area utilization and net power consumption. All the simulations will be carried out using Tanner with 45nm technology.

I. INTRODUCTION

Arithmetic operations, ALU is used as processing element inside the device. Full adder is the primary architecture of ALU and hence improving the performance of full adder is an important point of concern. High speed and low power full adder are essential in achieving high performance battery operated electronic devices. Many logic styles are used in designing full adders using GDI techniques previously. In the dynamic logic style clock signals are given to the NMOS and PMOS transistor. XOR-XNOR techniques have been realize high-speed and high-performance hybrid XOR-XNOR full adders. The full adder circuits based on 4T XOR-XNOR functions have a simple structure and reduced power consumption. The 14T FA designs have overcome non swing problem prevailing in the reported designs at low voltage and subsequently improved the performance of the circuit. This design reduces

propagation delay and area of digital circuits while maintaining low complexity.

II. LITRETURE REVIEW

1. Area and Power Efficient Carry Select Adder using 8T Full Adder B. Sathyabhama, M. Deepika, and S. Deepthi, 2019
In this paper 8T full adder is used as a building block for 8-bit SQRD CSLA. 8T full adder is designed by XNOR hybrid CMOS design. To perform fast arithmetic operations, carry select adder is one of the fastest adders which is used for the processing of data complex.. The SQRD CSLA consists of 8T XNOR full adder. By using the Pass Transistor Logic, 8T XNOR full adder is performed. SQRD CSLA is constructed by equalizing the delay through two carry chains. To achieve low power consumption 8T FA is used as the building block for ripple carry adder. A hybrid CMOS full adder with 8T is constructed by using 3T XNOR circuit. Since XNOR consists of 3 transistors only. Figure.2.1, shows the 3T XNOR circuit. This 3T XNOR is designed using pass transistor logic (PTL). It is a highly compact design. XNOR operation is performed twice in 8T full adder and by using multiplexer, sum and carry were determined. The key factor for high speed design is the number of P-transistors should be less than N-transistor.
2. A Competent Design of 2:1 Multiplexer and Its Application in 1-Bit Full Adder Cell Amit Dubey Sachin Dubey Shyam Akashe, 2020
An architecture of 2:1 Multiplexer has been proposed. As we know that Multiplier is also known as MUX. In terms of consumption of power, temperature, delay and load capacitance of output, MDCVSL gives the good result by the addition of double weak P channel. In terms of delay, consumption of power and load capacitance of output the modified multiplexer of DCVSL 2:1 gives the better result. In the MDCVSL, the

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Low Power Multiplier Design using Hybrid Full Adder

M.Pavithra¹, R.Murugasamy²

PG Scholar, Department of Electronics and Communication Engineering, Nandha Engineering College, Erode,
Tamil Nadu, India¹

Assistant Professor, Department of Electronics and Communication Engineering, Nandha Engineering College, Erode,
Tamil Nadu, India²

ABSTRACT: The multiplier factor is that the simplest unit of Associate in nursing arithmetic circuit that is preponderantly employed in digital process units and a number of other integrated circuits. The potency of a process unit is measured by its speed and power consumption. The multiplier factor circuit involves intensive use of adders that typically boost its hardware quality and this can be a significant defect for quick processes and additionally consumes high power. Therefore, it becomes essential to enhance speed and scale back power consumption within the multiplier factor module. The standard multipliers enforced mistreatment the CMOS and GDI technologies and their combination versions, still the improved speed and low power consumption suffer from high hardware quality. A style of, a hybrid Full Adder (FA) mistreatment Pass Transistors (PTs), Transmission Gates (TGs) and, standard Complementary Metal compound Semiconductor (CCMOS) logic is given. The FA was enforced in forty-five nm technology mistreatment tanner tools. In judge the responsibility, a comparative examination on performance parameters of the projected style has been conducted with twenty existing FA styles with provide voltage varied from 0.4 V to 1.2 V. Moreover, the FAs are extended to wide word length adders to check their performance parameters in massive scale large-scale

I. INTRODUCTION

As VLSI style engineers, we tend to as a society face 2 main issues: Power Dissipation and Propagation Delay. There square measure completely different technologies offered to assist U.S.A. style our circuits. However, each style technology has some limitations that can't be unnoticed. For instance, microprocessors, digital signal process, and image process use subtractions, additions, ANDs, and ORs. Most of the adders increase each the delay and power dissipation that may be a major drawback in digital signal process with reference to our turn, latency, and delay. Therefore, within the circuit, our main focus is to cut back the ability and delay. As VLSI circuit's square measure being developed and integrated into individual chips with higher performance, semiconductor unit intensities square measure of reduced, that not solely will increase the electrical consumption of the circuits however additionally will increase their quality. Nowadays era, one among the most important challenge is to style that kind of circuit provides which provides which supplies not solely the low power however additionally gives the high performance within the VLSI circuits and additionally the delay parameters will be minimized at the corresponded time. For that we will improve these 2 parameters to urge the suitable result. In Complementary Metal compound Semiconductor (CMOS) circuits, there are a unit 3 major enhancements through that we will consume the facility is mentioned below:- The active power because of charging and discharging of the circuit capacitance throughout change.

- Because of the discharge current, there's a discharge power within the circuit.
- There's a brief circuit current that moves from offer to GND wherever the P-Sub still
- N-Sub Network of Complementary Pass semiconductor device computer circuit charge at the same time.

Adiabatic Logic is one in all the foremost distinguished technique that plays a really important role for the facility consumption within the circuit. Adiabatic logic aims to decrease the facility within the logic circuit. Though there are a unit several techniques like pass semiconductor device logic United Nations agency helps to scale back the facility however adiabatic logic is one in all the foremost distinguished technique that is employed for the consumption of power. In VLSI, another most distinguished technique that is employed to scale back the facility i.e. Domino Logic. In terribly giant Scale Integration Circuit, performance plays a really essential role for the design of low power and high speed within the circuit. For division, multiplication still as exponential operations, full adder is one in all the essential block. In VLSI style circuits, hybrid logic is additionally accustomed scale back the facility and offers the high speed





EV IoT an intelligent automation system for electric vehicle charging station

Karthic Saran M*, Santhosh S, Yogeshwaran R, Murugasami R.

Department of Electronics and communication Engineering, Nandha Engineering College, Erode, Tamilnadu.

ABSTRACT

Ever-increasing pollution levels and its impact on the environment, governments are looking for alternate energy options for transportation services. Rapidly depleting global oil reserves and rising oil import bills of governments are also driving the need for alternate energy sources for the transport vehicles. As EVs become more commercial, there will be a need to create an efficient slot booking system as the charging process can be time consuming and the need for more stations will be demanding. Developed the Framework and Architecture of the Next-Generation Communication System based on IoT Slot Prediction and Online EVs Charging Slot Booking at Charging Station. We built the stochastic queuing model for EVs in the charging station. The proposed model of the slot prediction and booking system is designed to create a cost effective and efficient system. Our Cloud based Charging Station Management platform is developed to network and manage multiple charging stations. The proposed IoT and server-based real-time forecast charging infrastructure avoids waiting times and its scheduling management efficiently prevents the EV from halting on road due to battery drain out.

Keywords: EV IoT Charging, Cloud Based Station, NODEMCU, Slot Booking and Tracking.

INTRODUCTION

Introduction to electric vehicles

In many countries people live in densely populated areas, specifically in apartment buildings. With the proliferation of cars for private use, builders started to add subterranean communal parking areas to allow the owners to safely keep their vehicles when not in use. This concept is radically different from those parts of the globe where people tend to live in family houses, typically far from big cities. Since many car makers are currently developing electric vehicles (EVs), the replacement of current combustion engines seems to be plausible in the years to come. Communal garages are a different story as parking

places do not usually have a socket already installed and, in addition, it is not clear yet how the energy cost will be charged to the owners. It is also worth mentioning that power requirements for a quick charge are very high, which will require running three-phase wires of a certain section to each available socket.

An electric vehicle (shown in fig 1), also called an EV, uses one or more electric motors or traction motors for propulsion. An electric vehicle (EV) is one that operates on an electric motor, instead of an internal-combustion engine that generates power by burning a mix of fuel and gases. Though the concept of electric vehicles has been around for a long time, it has drawn a considerable amount of interest in the past decade amid a rising carbon footprint and other environmental impacts of fuel-based vehicles.

Author for correspondence:

Karthic Saran M

Department of Electronics and communication Engineering, Nandha Engineering College, Erode, Tamilnadu.



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Erode - 638 052.



Wormhole Intrusion Detection and Prevention using MCRP in WSN

Dr.D Arulanantham, Dineshkumar K, Gowrishankar K, Imaya varma J, Mathiyalagan S

Associate Professor, Department of ECE, Nandha Engineering College, Erode, India

Department of ECE, Nandha Engineering College, Erode, India

Department of ECE, Nandha Engineering College, Erode, India

Department of ECE, Nandha Engineering College, Erode, India

Department of ECE, Nandha Engineering College, Erode, India

ABSTRACT: Remote Sensor Networks (WSNs) have acquired expanding interest inside research networks for its significant job in wide number of utilizations. It makes life more helpful, protected and simple. Besides, it is adjusted invariant regions e.g., wellbeing, climate, traffic, and industry. Generally speaking, sensors are spatially circulated thus, should have a minimal expense; As a result, they had limited battery capacity, computing capability, and memory area. Sensors' limited capacity to carry out routine safety measures renders them defenceless against several types of attacks. Furthermore, their applications, such as backwoods fire detection, catastrophe help duties, and a slew of others, are vulnerable to postponement or package pollution. In this way, it is obligatory to further develop security. There are different sorts of assaults focusing on various organization layers. One sort is a wormhole assault that is a hurtful and handily sent assault that objectifies the directing layer. Many of these conventions focus on the wormhole address problem in the context of hub energy usage. In any case, a few different proposed methods look at minimising energy consumption in order to establish such criteria while also demanding improved performance estimate. We describe a minimal sub steering convention for the 802.15.40 WSN that aims to reduce energy consumption while also detecting wormhole assaults.

KEYWORDS: Wormhole attack, malicious node, legitimate node, MCRP, WSN.

I. INTRODUCTION

Wireless Sensor Network (WSN) is a foundation-less distant network that is conveyed in a large number of remote sensors in an impromptu manner and used to examine the framework, physical, or ecological situations. A distributed, programmed administering organisation, a remote sensor network consists of sensor hubs that characterise a certain climate. These hubs are invigilating the regular circumstances, like moistness, pressure, heat, sound, wave and heading at various regions. A sensor hub is a little gadget which has a restricted estimation asset. They are erratically and gradually organized in a detected climate. WSN are generally utilized in different applications, for example, region noticing, woods fire noticing, military reconnaissance, medical services, home certification, water quality administration and satellite resembalance. There are a few limits in WSN like restricted lifetime, required low power utilization and less stockpiling. In essence, sensor hubs are divided into four sub-frameworks. We discussed the many types of attacks on Intrusion Detection in this article. In WSN assaults are fundamentally characterized by two sections. Initial segment is the assault against security instrument, and another is directing system. No of assaults are recorded as beneath however we bring up just wormhole assault.

II. WORMHOLE ATTACK IN WSN

In late many years, Wireless Sensor Networks (WSNs) have acquired expanding interest inside research networks for its significant job in wide no of uses. It makes life more helpful, protected and simple. Besides, it is adjusted in variation regions e.g., wellbeing, climate, traffic and industry. It likewise needs foundation and is made out of sensor hubs that can impart straightforwardly through a handset. It is made out of sensors that can detect their general climate, to convey the data to a base station that has an association with the Internet as displayed in Fig. 3 the base station has more computational and stockpiling capacities than sensors. The detected data is sent through the base station to be gotten for those of interest. For instance, living space and climate checking is important to researchers and analysts



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Smart Travelers App Using Flutter

Dr.G.Ramani¹, S.Dinesh Kumar², R.Diyarani³, D.Mathivanan⁴, S.Premnath⁵

¹Professor, Dept of EEE

^{2,3,4,5}Dept of FEE

^{1,2}Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- Public Transport Networks (PTNs) which is difficult to use when the user is unfamiliar with the area they are traveling to their destination. This is true for both infrequent users (including visitors) and regular users, who need to travel to that areas with which they are not acquainted. In these situations, adequate on-trip navigation information can substantially ease the use of public transportation and the driving factor in motivating travelers to prefer it over other modes of transportation. However, estimating the localization of a user is not trivial, although it is critical for providing relevant information. We assess relevant design issues for a modular, cost-efficient user-friendly on-trip Navigation service that uses position sensors, by helping travelers to move single-occupancy vehicles to public transportation systems. The communities can reduce traffic congestion as well as its environmental impact. Here, we describe our efforts to increase the satisfaction of current public transportation users to ride.

Keywords- GPS, Flutter, Dart, Firebase, Google cloud.

I. INTRODUCTION

There are buses made available for passengers travelling long distances, but many passengers don't know the complete information about these buses. The complete information includes the number of buses going to the required destination, bus number, bus timings, the rate through which the bus would pass, time taken for the bus to reach the destination, maps that would guide the passenger with User route, track the current location of the bus and provide the correct time to reach its destination. The proposed system overcomes the problems stated above. The system carries an Android application that gives necessary information about all the buses. This information overcomes the problems faced in the previous application called "Pane Bus Guide". The platform chosen for this kind of system is android. The reason is, the Android Operating System has come up on a very large scale and is owned by almost every person. Android is a user friendly platform, thereby enabling ease of access for all the users. The number of applications made for the Android Operating System is increasing on a large scale ever since its advent. So, We planned to built new application (Smart Traveler App) by using Android Studio and Flutter, which will

provide all the information about the bus Routes, Timings and Destinations.

II. RELATED WORKS

A. Similar Existing System

Around the world, there are many vehicles tracking system have been developed. These systems have their own uniqueness. An example of GPS Tracker is developed to provide vehicle security and GPS location for personal and fleet vehicle owners. This device combines with advanced technology and safely features to keep the vehicles secured whenever they go. Controlling and Monitoring the vehicles can be done in an easy and convenient way. LiveView GPS designed to provide vehicle security and GPS location for fleet vehicle owners. Now they have variety of option to choose their bus and paid their fees, and the all are monitoring by Admin app. They have a device that combines with advanced technology that keep the students are perfect to pick their bus at right time. Google cloud and Firebase are used in their app. This App is made by flutter and Dart. It provides huge list of features like, Fees paid option, transit tracking, distance calculation, historic tracking data auditing and etc.

B. Techniques Used

Nowadays, people used many kinds of different operating system in their smartphone such as iOS, Android and many others. Thus, developers need to develop many kinds of platforms using different frameworks, architectures and contents to build an equal application for all. The cost of implementation for the multiple platforms are high. Developers also need to have the expertise on the various platforms. Developers are introduced to use the alternative way or approach for the multiple implementation such as a cross-platform development approach. There is also an alternative way for developers to less the workload which they can implement and applying reusability techniques in developing equal applications. Thus, by using the two mentioned techniques, they could choose any suitable approaches along with the reusability techniques in using the existing components of existing systems into a new platform that they want to develop.

Zero-Voltage-Switching Single-Phase Full-Bridge Inverter With Active Power Decoupling

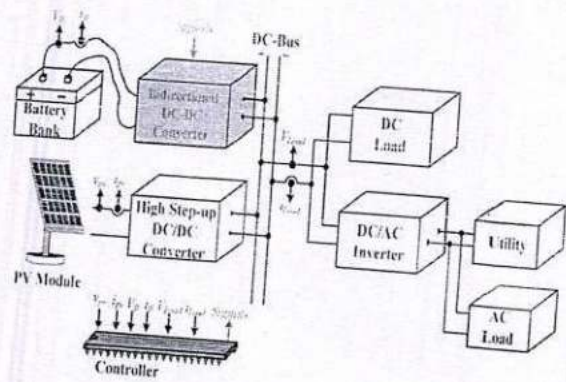
Dr.G.Ramani¹, M.Saminathan², M.Gokul³, K.Sarweswaran⁴

¹Professor, Dept of EEE

^{2,3,4}Dept of EEE

^{1,2,3,4} Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- Sunlight based power is the change of sun oriented energy into warm or electrical energy. Sunlight based innovations can bridle this energy for an assortment of purposes, including power age. In the current technique Transformer, less single-stage Hybrid AC/DC Micro Grid having a few downsides, for example, voltage unbalance, symphonious contortion, and low diminishing spillage current when contrasted with the proposed strategy. So to conquer the disadvantage, this work proposes a Single-Phase Full-span inverter utilizing the Active Power Decoupling strategy. MPPT (Maximum Power Point) control strategies, named as the IMPROVE support strategy and greatest lift control technique brings about the connection of the voltage help reversal capacity. An inverter is a fundamental material in a sun powered energy framework. It is a method for changing over Direct Current (DC) power created by a sunlight based charger to Alternating Current (AC). The converter with two capacitors, one diode, and two inductors for keeping up with balance voltage and low spillage current misfortunes in the output. Furthermore, the semi z-source converters' feedback source current and result load current are both consistent. The semi z-source converters are classed Zero-Voltage-Switching in light of the succession of inductor current and framework arrangement.



This work proposes a novel high step-up DC-DC converter for solar system applications. Three-winding linked inductors, voltage multiplier cells, and a clamp circuit make up the suggested configuration. The voltage-stack and voltage-lift approaches using voltage multiplier cells significantly boost the step-up voltage gain. To avoid a voltage overload on a power switch, the clamp circuit recycles the energy from the leaking inductor. When the voltage stressors of the converter's power switches are significantly lower than the high output voltage, low-voltage-rated power switches with low on-state resistances and costs can be employed to reduce conduction losses and boost conversion efficiency.

I. INTRODUCTION

The PV boards are to a great extent subject to sun illumination (which fluctuates essentially relying upon topographical area), they enjoy a few benefits, including low upkeep and long help life. DC support converters are utilized to move forward this variable in various applications where the PV yield voltage is unseemly, improving the general framework effectiveness. The voltage is expanded by exchanging electric circuits, showing that the end-client voltage is impacted by the obligation cycle. A regulator gives a Pulse-Width-Modulation (PWM) generator that can direct the exchanging signal, suggesting that a proper control rule might be contrived to upgrade the exchanging sign's exhibition.

Dynamic Power Decoupling settle the previously mentioned weaknesses of the average lift converter. Non-disconnected/segregated, bidirectional/unidirectional, voltage took care of/current took care of, and hard exchanged/delicate exchanged are a couple of the few assortments of high move forward DC converters. Many designs have been proposed in the high increase to work on the activity of high move forward converters as far as voltage gain and effectiveness. There has been introduced a high move forward DC converter with a connected inductor and exchanging capacitor. A non-detached buck-support converter with a huge info current wave was accounted for utilizing an exchanging inductor. A non-disconnected bidirectional DC converter with the limit of Zero-Current Switching (ZCS) has been proposed to diminish input current wave, yet this converter experiences low voltage gain and low proficiency in the powerful reach.

Smart Solar Inverter For Farm Shed

P.Jamuna¹, P.Abishek², S.Balakumaran³, R. Manikandan⁴, R.Srinithi⁵

¹Associate professor, Dept of EEE

^{2,3,4,5}Dept of EEE

^{1,2,3,4,5}Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- Solar smart inverters are inverters that are charged through solar power and can be controlled and monitored using IoT. The notion of power in the modern world has become instrumental for the progress of any economy. Almost all engines that run a civilization like homes, enterprises and governments now rely on energy to ensure appropriate functioning. The exponential rise in population coupled with massive pollution from conventional energy resources has led to enormous demand for green power and enhanced pressure on utility grids. For these reasons the future of the energy industry lies in energy generation from renewable sources and efficient energy storage. Energy storage is a convenient backup tool to use against unforeseen circumstances like breakdowns, floods and storms that thwart vital power supply for uncertain time durations. The constraint of increasing population has also complicated global power systems with power cuts and power shortages. But with huge progress in IT sector, most electrical appliances such as inverters are bound to be smarter with time. This smartness is induced in it by allowing information flow between user and machine. We intend to create an IoT-enabled solar smart inverter that uses Wi-Fi technology to engage a two-way communication with the user and equipment. The battery SoC, electrolyte level, and run time of the load on the battery are communicated to the user. The user can control the connected load wirelessly employing a mobile application. This will enable the efficient utilization of energy and also upgrades human comfort. An Arduino Uno with Node MCU which runs on the ESP8266 Wi-Fi module is often used to implement the aforementioned objectives. The output power from solar panel can be maximized by making use of an MPPT system, to obtain high power.

I. INTRODUCTION

Electricity is additionally added to the most essential needs throughout everybody's life. The chart of vitality utilization is getting expanded step by step whereas the vitality assets are decreasing equal. So as to adjust the shortage for power, different sources are utilized to produce power. For the age of power, there are two different ways: one is by additional strategy and other one is nonconventional technique. A portion of the vitality transporters like non-renewable energy sources and atomic powers are additionally

utilized, however they are not inexhaustible assets (i.e., they are not 'topped off' naturally) and it is said to be no ordinary. In its broadest sense, economical force source can be accomplished by utilizing the sunlight based force as source. Sunlight based vitality has the wide accessibility all through the world. Indeed, even the sun has delivered vitality for billions of years. The sun's beams may feline as a significant hotspot for the age of power by changing over it into an electric force. Such application is called as sun oriented warm vitality, which is traditional. Despite the fact that different manageable sources are accessible, for example, wind, downpour, tides and geothermal, characteristic based bio fills and ordinary biomass, sunlight-based force have enormous advantages. These days in India, visit power cut is extremely normal. For that it is essential to utilize the sustainable power source and checking it optionally. The fast development in sustainable power source applications have been engaged by a basic drop in cost the previous decades and specific change in their efficiency, relentless quality and lifetime. Also, by methods for observing the vitality anticipating, family units and networks, the profitability gets expanded. If there should be an occurrence of India's improvement and monetary development, power assumes a crucial job. In vitality utilization, India is the fourth greatest nation after China, USA and Russia. India has an introduced limit of 278.7GW with a for every capita all out power utilization of 1,010 kWh in 2014-15. Despite a development of 5.54% more than 2013-14 and furthermore having less expensive power levies, the per capita utilization is low when contrasted with numerous different nations. The nation represents around 21% of the total populace with no entrance to power. The general jolt rate in India is 64.5%, while 35.5% of the populace despite everything lives without access to power. Web of things implies just the system of Physical articles. The system consists of water sensor which is cost effective and helpful to find the water content in the field. This gives the association of every single article on the planet by methods for remote sensor organize. A portion of the gadgets, structures, vehicles and different articles inserted with programming, sensors, hardware and system availability can empowers these items to gather and trade information.

Design And Analysis of Regenerative Braking In Electric Vehicles Using Ann Algorithm

P.Jamuna¹, M.Dhecnadhayalan², A.K.Goku³, L.Mohana Sundhar⁴, J.Sowntharraj⁵

¹Associate professor, Dept of EEE

^{2, 3, 4, 5}Dept of EEE

^{1, 2, 3, 4, 5}Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- The regenerative braking plays a vital part to maintain the vehicle's strength and getting better energy. Electric vehicle's use mechanical brake to boost the roughness of wheel for the deceleration purpose. However, from the point of view of saving energy, mechanical brake increases out much energy while the EV's kinetic energy is renewed into the thermal one. This project proposes the efficient battery energy management system for regenerative braking application. This project has presented the RBS of EVs which are driven by the BLDC motor. The performance of the EVs' regenerative brake system has been realized by our control scheme which has been implemented both in the simulation and in the experiments. By combining fuzzy control and PID control methods which are both sophisticated methods, RBS can distribute the mechanical braking force and electrical braking force on. In this paper, we have chosen the three most important factors: SOC, speed, and brake strength as the fuzzy control input variables. Conventional braking systems use friction to counteract the forward momentum of a moving car. As the brake pads rub against the wheels, excessive heat energy is created. This heat energy dissipates into the air, wasting up to 30% of the car's generated power.

I. INTRODUCTION

Prologue to Regenerative Braking Systems When a regular vehicle applies its brakes; motor vitality is changed over to warm as grinding between the brake cushions and wheels. This warmth is diverting in the airstream and the vitality is viably squandered the aggregate sum of vitality lost along these lines relies upon how frequently, how hard and for to what extent the brakes are applied. Regenerative slowing down alludes to a procedure in which a bit of the motor vitality of the vehicle is put away by a momentary stockpiling framework. Vitality regularly dispersed in the brakes is guided by a force transmission framework to the vitality store during deceleration. That vitality is held until required again by the vehicle, whereby it is changed over go into motor vitality and used to quicken the vehicle. The size of the part accessible for vitality stock piling changes as per the kind of capacity, drive train effectiveness, and drive cycle and idleness weight. A lorry on the mother way could travel 100 miles between stops.

This speaks to small sparing regardless of whether the proficiency of the framework is 100%. Downtown area driving includes a lot additionally slowing down occasions speaking to a lot higher vitality misfortune with more prominent likely investment funds. With transports, taxis, conveyance vans, etc. there is much increasingly potential for economy. Since regenerative slowing down outcomes in an expansion in vitality yield for a given vitality contribution to a vehicle, the effectiveness is improved the measure of work done by the motor of the vehicle is diminished, thusly decreasing the measure of prime vitality required to impel the vehicle. All together for a regenerative slowing mechanism to be practical the prime vitality spared over a predetermined lifetime must balance the underlying cost, size and weight punishments of the framework To be effective a regenerative breaking mechanism ought to in a perfect world have the accompanying properties, Efficient vitality transformation A vitality store with a high limit for each unit weight and volume, A high force rating so a lot of vitality can stream in a short space of time, Not require over entangled control frameworks to connect it with the vehicle transmission, Smooth conveyance of intensity from the regenerative framework, Absorb and store slowing down vitality in direct extent to slowing down, with the least deferral and misfortune over a wide scope of street speeds and wheel forces.

II. RELATED WORK

[1] S.H. Park, J.S. Kim, J.J. Choi, H. Yamazaki, "Modelling and Control of Adhesion Force in Railway Rolling Stocks", IEEE Control Systems Magazine A wheel slide protection (WSP) system of a railway train has the role of reducing excessive wheel slide from brake applications in situations where wheel/rail adhesion is temporarily impaired. The mechanism of the WSP is complex and is related to highly nonlinear dynamics of the train. Hardware-in-the-loop simulation (HILS) for the WSP system can test various dangerous braking conditions which are not possible in actual train tests, and help to find appropriate parameters of the WSP system. [2] Picasso, D. Caporal, P. Colaneri, "A distributed braking control algorithm with preview action for railroad vehicles", A method is proposed to enhance the overall

Design And Implementation of Leakage Current Detector In Substation Transformer Bushings

M. Prabu¹, R. Sharmila², C. Manoranjani³, E. Poornima⁴

¹Professor, Dept of EEE

^{2,3,4}Dept of EEE

^{1,2,3,4} Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- The substation consists of many transformers. Bushings are one of the main components of transmission and distribution lines and also in substations. Its function is to isolate the phase conductor to other phases and also between conductor and ground. Hence it is made up of good insulation material to prevent breakdown. The insulators installed are commonly in the open air, its performance is influenced by the aging of insulators, microclimatic changes, and the local air pollution which results in leakage of current. Generally, pollutants are conductive so that they will reduce the resistance of the insulator surface. Insulator conductivity gets increased in wet conditions caused by moist air or fog. This decreases the performance of the insulator. Thus, the pollution of the insulator results in a reduction of surface resistance in the insulator. Leakage of current on the insulator causes insulator fault. This paper investigates, the location of the substation where insulator fault occurs. The insulator fault is detected and solved in the initial stage by using different types of sensors mainly the hall effect sensor. This sensor is used for proximity switching, positioning, speed detection, and current sensing application. This project helps to overcome the demand for power which is one of the major problems faced by our country.

I. INTRODUCTION

Outages in a transmission line occur due to failures that can develop abruptly, intermittently or incipiently. The incipient form of outage allows the monitoring and prediction of a possible fault. The incipient faults are often due to insulation problems, whether due to stresses, natural degradation or vandalism. Due to insulators operating in extreme environmental conditions, they typically undergo the deposition of various contaminants on their surface. The deposition of the contaminants decreases the resistivity of this surface, leading to the flow of a leakage current on the insulator due to the stress in its dielectric. The leakage current increases as higher the level of pollution, which eventually leads to the occurrence of a flashover, affecting long-term insulation performance. Due to the local heating that results in the formation of dry bands, the resistive surface of the insulators begins to present non-linear characteristics, which

consequently cause a leakage current with several odd harmonics. Therefore, monitoring based on the leakage current allows observing the operating conditions of the insulators and performing diagnostics, and determining the probable causes of the failure. Recent research has sought to diagnose insulation faults in transmission branches. For this purpose, partial discharges and leakage current are used to characterize faults in insulator chains. In both methods, the measured signals are searched for patterns that can characterize the fault, for localization purposes. The characterization allows the development of mathematical models of transmission lines, to insert the model of the fault insulator, obtaining the leakage current to validate and develop diagnostic methodologies. In this paper, the leakage current to be characterized by the predictive maintenance methodology is obtained in transmission lines sections, from the input and output currents measured at substations located, at the terminals in the transmission line section. Predictive maintenance is possible from the acquired signals by sensors and network data that compose the Online Monitoring of Transmission Lines System MOLLTS. Therefore, the model to be used in this diagnosis methodology is composed of several leakage current signals with faulty insulators installed along this transmission line section. The contribution of this paper is validated by simulation of the leakage current signals using equivalent circuit models of faulty insulators. Also, the harmonic spectrum of characterized signals is used to develop and validate a predictive maintenance methodology based on Fuzzy inference.

II. RELATED WORK

[1]"Temperature-Dependent Surface Charge and Flashover Behaviors of Oil-Paper Insulation Under Impulse with Superimposed DC Voltage" by B. Du, R. Chang, J. Jiang, and J. Li. The effects of ambient temperature and superimposed voltage on surface charge and flashover behaviors in an oil-paperinsulation system. Surface potential decay (SPD) experiments were performed under superimposed voltage with various polarity and amplitude combinations and at a temperature ranging from 20° to 80°C. [2]"Trap energy distribution in polymeric insulating materials through surface

Design And Implementation of Electric Vehicle Fast-Charging Station Combined PV Generator And Energy Storage

M. Prabu¹, M. Karthikeyan², R. Kaviarasu³, M. Mohankumar⁴, A. Sabarinath⁵

¹Professor, Dept of EEE

^{2,3,4,5}Dept of EEE

^{1,2,3,4,5} Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- The importance is given to the market integration of PHEV (Plug-in-Hybrid Electric Vehicle) and EV increasing the interest in the fast-charging technology of such car batteries. The paper reviews work recently conducted in this area and proposes a fast-charging station using flywheel energy storage and a super capacitor as energy storage devices. Design issues and simulation results for a typical Define Level III charger are presented. This paper explores the current and potential future use of fast-charging stations for electric passenger vehicles. The paper aims to analyze current charging patterns at fast-charging stations and the role of fast charging among different charging options. These patterns are explored along the lines of the technical capabilities of the vehicles and it is found that with increasing battery capacity the need for fast charging decreases. However, for those vehicles with large charging capacities, there are indications that fast charging is perceived as more convenient as these are used more often. Such results indicate a larger share for fast charging if charging capacities increase in the future. Results from a spatial analysis show that most fast charging is done at a considerable distance from home, suggesting mostly 'on the road' charging sessions. Some fast-charging sessions are relatively close to home, especially for those without private home charging access. This shows some future potential for fast charging in cities with many on-street parking facilities.

Keywords- Battery, Microcontroller, Converter, PV, PWM Driver.

I. INTRODUCTION

In a power system network, the HVDC or DC transmission played a vital role because of huge power transmission and effective output maintenance. Here in the system, two conversion processes with several switches are used. Hence the losses and harmonics may increase. That's why in the past multilevel inverter concept is introduced and the accuracy and efficiency of the system are increased and the losses and harmonics were also reduced. Even with a huge

number of advantages, it does also have some disadvantages like complex circuits, more voltage stress, and Low fault current tolerance. Because of this reason, the researchers have a look at the betterment of the multilevel converters. Among the research and researchers, the extended version of the multilevel inverter is MMC (Modular multilevel converter). MMC is nothing but a new topology for the voltage source inverter. Here in the converter, the multilevel inverters are separated as submodules with less number of switches. By using the switch the conventional switch drawbacks are limited. By using the methodology, the fault-tolerant strategy may be fulfilled, the fault strategy is nothing but identifying the fault and location of the fault then for the isolation and finally reconfigured as fast as possible.

II. LITERARY REVIEW

A. A. Elserougi, A. S. Abdel-Khalik, A. M. Massoud, S. Ahmed, "A New Protection Scheme for HVDC Converters Against DC-side Faults with Current Suppression Capability. Multilevel-Converter topologies are concerned with the need for series switching when it was progressed the power quality improvement and lower switching loss. S. Cui, S. Sul, "A Comprehensive Dc Short-Circuit Fault Ride Through Strategy Of Hybrid Modular Multilevel Converters (Mmcs) For Overhead Transmission Line. In this paper, a comprehensive DC short circuit fault ride-through (FRT) strategy is proposed for a hybrid modular multilevel converter that combines half-bridge sub-modules and full-bridgesubmodules. By the proposed method, the hybrid MMC-based VSC-HVDC system can ride through a pole-to-pole short circuit fault supporting the AC grid as a Static Synchronous Compensator (STATCOM). Y. J. Jo, T. H. Nguyen, and D. C. Lee, "Condition monitoring of submodule capacitors in modular multilevel converters. The SM capacitors in the modular multilevel converters (MMC), which is based on the capacitance estimation using the information of the current and voltage ripples of the capacitors. O. Abushafa, S. Gadoue, M. Dahidah, and D. Atkinson, A new scheme for monitoring submodule capacitance in modular multilevel

IoT Integrated Air Quality Monitoring And Controlling Using 2nNaOH Chemical Bank

S.Prabhakaran¹, K.Sathish², R.Hari Haran³, G.Karthikeyan⁴, R.Yogeshwaran⁵

¹ Professor, Dept of EEE

^{2,3,4,5} Dept of EEE

^{1,2,3,4,5} Nandha Engineering College, Erode, Tamilnadu, India

Abstract- At present, disasters are basic in the environment because of the unpredictability of their regular habitat. Such regular debacles bring tremendous loss of ownership and life. To overcome these issues this project is proposed. The controller is utilized for controlling every one of the operations. Our framework comprises a wellbeing safety system and control room which is connected through the IoT beneficiary. Here we monitor the co₂, methane, hydrogen sulfide using atmega328p with help of the IoT module to communicate the above parameter wirelessly and also here we add an automatic buffering system which helps to dilute the harmful full gas at instantly.

Keywords- Gas sensor, IoT module, Microcontroller, LED display, Fan, Pump.

I. INTRODUCTION

Air pollution in India is a serious health issue. Of the 30 most polluted cities in the world, 21 were in India in 2019. As per a study based on 2016 data, at least 140 million people in India breathe air that is 10 times or more over the WHO safe limit and 13 of the world's 20 cities with the highest annual levels of air pollution are in India. 51% of the pollution is caused by industrial pollution, 27 % by vehicles, 17% by crop burning, and 5% by other sources. Air pollution contributes to the premature deaths of 2 million Indians every year. Emissions come from vehicles and industry, whereas in rural areas, much of the pollution stems from biomass for cook burning and keeping warm. In autumn and spring months, large-scale crop residue burning in agriculture fields – a cheaper alternative to mechanical tilling – is a major source of smoke, smog, and particulate pollution. India has a low per capita emissions of greenhouse gasses but the country as a whole is the third-largest greenhouse gas producer after China and the United States. A 2013 study on non-smokers has found that Indians have 30% weaker lung function than Europeans. Various studies were conducted to identify the reasons for the sing in pollution in-country including NCR of Delhi, especially during winter months. A study 'Comprehensive Study on Air Pollution and Green House Gases in Delhi, 2016' was conducted by the Indian Institute of

Technology, Kanpur to identify major air pollution sources in NCT of Delhi, their contributions to ambient air pollution levels, and develop an air pollution control plan. The study confirms that Particulate Matter is the main source of pollution and levels of PM10 and PM2.5 are 4-7 times higher than National Ambient Air Quality Standards (NAAQS) in the summer and winter months. Based on the air quality measurements in the summer and winter months, it is inferred that the contribution of PM10 and PM2.5 from different sources is different in summer and winter. Sources of pollution during winter include secondary particles (25 -30%), vehicles (20 – 25%), biomass burning (17 – 26%), municipal solid waste burning (9 – 8%), and to a lesser extent soil and road dust. Sources of pollution during summer include, coal and fly ash (37 – 26%), soil and road dust (26 – 27%), secondary particles (10 – 15%), biomass burning (7 – 12%), vehicles (6 – 9%) and municipal solid waste burning (8-7%).

II. DOCUMENTARY RESEARCH

There are natural and human-induced factors that contribute to climate change. When you look back at the history of Earth, climate change has always happened. Methane (CH₄), Carbon monoxide (CO), Volatile organic compounds (VOCs), Sulphite (SO₄), Nitrogen oxide (N₂O), Chlorofluorocarbons (CFCs), Nitrate (NO₃). Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings or cause damage to the climate or materials. There is a certain percentage of gases present in the atmosphere. An increase or decrease in the composition of these gases is harmful to survival. This imbalance in the gaseous composition has increased the earth's temperature, which is known as global warming. Air pollution has resulted in several respiratory disorders and heart diseases among humans. The cases of lung cancer have increased in the last few decades. Children living near polluted areas are more prone to pneumonia and asthma. Many people die every year due to the direct or indirect effects of air pollution. Almost any toxic chemical could make its way into the atmosphere to pollute the air that we breathe. Aerosol particles (clouds of liquid and solid particles in a gas) that are found in the air may

Energy Efficient Smart Metering System Using IoT and GSM

B.Ramraj¹, E.Aruna², A.Divya³, S.Deepankumar⁴, P.I.Neelakanda Pillai⁵

¹Assistant Professor, Department of EEE, Nandha Engineering College, Erode, Tamilnadu, India.

^{2,3,4,5}UG Scholar, Department of EEE, Nandha Engineering College, Erode, Tamilnadu, India.

Abstract- This paper describes PIC16f877a Microcontroller based design and implementation of energy meter using IOT concept. The proposed system design eliminates the human involvement in Electricity maintenance. The Buyer needs to pay for the usage of electricity on schedule, in case that he couldn't pay, the electricity transmission can be turned off autonomously from the distant server. The user can monitor the energy consumption in units from a web page by providing device IP address. Theft detection unit connected to energy meter will notify company side when meter tampering occurs in energy meter and it will send theft detect information through GSM modem and theft detected will be displayed on the terminal window of the company side. Wi-Fi unit performs the IOT operation by sending energy meter data to web page which can be accessed through IP address. The Hardware interface circuit consists of PIC16f877a Microcontroller, MAX232, LCD display, Theft detection unit and ESP8266 WiFi module. Wi-Fi unit performs the IOT operation by sending energy meter data to web page which can be accessed through IP address.

Keywords: PIC16F887A, Energy Meter, GSM Module, ESP8266, MAX232, LCD Display.

I. INTRODUCTION

This paper proposes smart, integrated power consumption monitoring system has been implemented with the use of open standard technology, commercial project & household items which actively monitors the voltage & current ration in remote system. Here a GSM based smart energy metering system using IOT which will replace traditional meter reading method. They can monitor the meter readings regularly without the person visiting each house. Microcontroller based power consumption monitoring system that senses parameters & shows on an LCD display. The meter readings are automatically send on Cloud generated using IOT. According to that reading we have to pay the bills. The main drawback of this system is that person has to go area by area and he has to read the meter of every house and handover the bills. Many times errors like extra bill amount, or notification from electric board even though the bills are paid

are common errors. To overcome this drawback we have come up with an idea which will eliminate the third party between the consumer and service provider, even the errors will be overcome. In this paper the idea of smart energy meter using IOT have been introduced. In this method we are using microcontroller because it is energy efficient.

II. RELATED WORKS

Energy is a very important resource for life and increasing social welfare, this means that a sufficient and reliable supply of energy is needed to ensure sustainable development, but the use and conversion of primary energy mostly produce emissions. The increasing level of environmental problems related to energy use has led to a growing interest in the problem of sustainable development. Therefore, to overcome these problems requires the use of resources, technology, appropriate incentives, and strategic policy planning. Energy management is the best solution for managing energy use. The definition of energy management has been suggested by several experts and researchers. According to Ates and Durakbasa [1], Energy Management is a combination of activities to carry out energy efficiency, engineering, and related process management to produce energy costs and lower CO² emissions. According to the German Federal Environment Agency [2], Energy Management is an action planned and implemented to ensure minimum energy input to achieve a predetermined/targeted performance. Based on research conducted by Bunse et al [3], energy management is defined as an activity of controlling, monitoring, and improving energy efficiency. prove sustainable energy performance . According to Segatto et al [4], EMS is an automation system that can collect energy measurement data from a place or building, and compile these data in a visualization form that can be understood by users. According to Shamseldein et al [5], the EMS is a computer system used by users to monitor, control, and carry out optimal energy management. According to Robin Kent [6], an EMS is needed to identify, plan and complete projects to produce energy savings, without a system the energy management activities will not be properly accommodated and eventually become damaged. EMS unites and handles the