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Content

Description	Pg. No.
Agriculture Applications of Internet of Things: A Survey Comparison of Clustering Algorithm S.Sindhu,L.Arockiam	5
Comparison of Clustering Algorithm RugadaVaikuntaRao,N.Sireesha, Mrs.J.Nalini	6
Structural Health Monitoring Using IoT B Satheesh, VelamuriManasa ,Y.Jaswanth, B. SaiLikitha, K. Sri Sahithi, K.Trivani	7
Sensor Based Frisking P Sireesha, Archana B T, , M. PratyushaJyothi, J. Tallababu, Ch. Harika, G. Madhavi	8
Automatic Smart Irrigation System Using IOT Technology Kishore Buddha, K.Poojitha, G.Pavan, Rahul Kumar, D.Devi , V.N SaiRohini Kumar, D. Jaswanth	9
Optimal Time Table Generation Using Genetic Algorithm N G S Raju, B.G.PoornimaHimaketan, M.Tejasri , K. Komali , T. SaiHarika, R. Lohit Kumar	10
Hydrogen Fuel Cell Based Energy Production for Domestic Appliances A SwethaM.Hemanth Kumar, Suraj Nahak, Manda Sravan Kumar, Vara Prasad	11
Passive Target Tracking Using Sonar Measurements M S B Deepthi, KausarJahan, MallaMounika Naga Lakshmi, Piradula Suresh, Routhulapudi Lalitha Lakshmi S Praveenya, PentakotaSwarjan	12
IoT Based Home Thief Movement Detection and Alerting System Using GSM Technology Matta Sankara Sastry, Srinivasa Rao, N. Prudhivi, P. Jyothi, M. Srinivas, K. Bhagya Lakshmi	13
Wavelet Signal and Image Denoising R. V. S. Lakshmi Kumari , R. Suneel Kumar, B. Pavani, G. Tejasri, Ch. Latha, V.Moulika	14

Design and Implementation of Underground Cable Fault Detector review on control strategies in micro grid to smart	15
R.SrideviAravelli S L K Gopalamma, Kusul Kumar K, N. Srinivas, Sumanth Kumar, S. LaxmanRao	
No Death in India over Usage of EMS Application	16
SulochanaKengam,M RVSG Guptha, Mr. Raj PavanPoliseti	
Role of Smart Technique in Irrigation System	17
G Rajasekharam , K. Srinivasarao, S. Srinowshya, G. Manoharsri, B. Pydiraju, J. Yaswanth	
Study on Green Concrete for the Future	18
Y H PrasannaRaju,B. Sudheerkumar, N. Vamsikrishna, V. Venkatesh	
Dynamic Electric Vehicle Charging System	19
Ramesh Surisetty,CH Ravi Kumar, P Gnanendra Kumar, V Ganesh, P Teja, V Sai Kumar	
Switched Reluctance Motor for Hybrid Electric Vehicle using IoT Cloud	20
L.V.Rajesh Kumar, Alfoni Jose K, K.S.S.Jahnavi,K.NarayanaMurthy,M.Savan Kumar, M.S.D kiran	
Generating Electricity by Using Heating Panel	21
B. V. Suresh, K Vijay Kumar, B P S PrakashRao, B Siva Sai, D S Siva Kumar, B RakeshYadav	
Health Care System for Home Quarantine People Using Raspberry Pi, GSM and IOT Technology	22
GiridharBabu, Sheik Shabeena, Karri Jayasri, Lanka VenkataSaiTejaswini, AneLokesh, Kobbari Rajesh	
Covid-19 Fencing and Contact Traceability	23
M.G. Varaprasad· A.S.N.Varma·T.Divya,P.Yamini ,I.Sreelekhyha, K.Teja	
Smart Power Factor Smart Power Factor Controller	24
G Jyothi, T. Ramesh babu, B.Lohidhar ,E.Mohan,CH. Sri harsha ,K .Vamsikrishna	
Autonomous Delivery Robot	25
B. Siva Prasad, K.S.N.VSomesheswararao,`K.Mytri,R.Indraja, K.Thriveni, D.Ajay Kumar	
Accident Detection and Alert System using Arduino	26
A Vasudeva Rao, P. Amrutha, V. Moulika,M.Manju, K.BhagyaDharani, B.Kedharsai	

A Comprehensive Approach to Develop Pavement Bricks from IoT(Iron Ore Tailings) and Solid Plastic Waste to Generate Green And Cyclic Economy Towards Waste To Wealth Mission	27
Rugada Vaikunta Rao	
Solar Powered BLDC Motor with HCC Fed Water Pumping System for Irrigation	28
J. Deleep Kumar, S. Sai Kumar	
A Review on Control Strategies in Micro grid to Smart	29
O. Lakshmi Bhavana, Aravelli S L K Gopalamma	
Capturing Human Categorization of Natural Images by Combining Deep Networks and Cognitive Model	30
VenkataKalyaniVangapandu, NamrathaPadiyar	
IOT Applications with Secured Light Weight Cryptography	31
Namratha Padiyar, Venkata KalyaniVangapandu	
Implementation of Cloud Technology in Education	32
V. Manasa, B.G. Poornima	
Elliptic Cryptography Curve for Secured Text Encryption	33
Likitha.K, M.Srinivasa Rao	
Study of Seismic Analysis of Multi Story Buildings With and Without Basement	34
Y Hemanth Kumar	
Renewable Energy Based Integrated Automated Full Body Sanitizing System	35
B. V. Veeranjanyulu	
An Approach for Reconstruction of Unavailable Data in Cloud Storage System Using Partially Distributed File System with Parity	36
Ramaraju. S V S V.P, Komali K	
Predicting the Hydrogen Storage Capacity of Lithium Doped MWCNTs Nano particles using Machine Learning Techniques	37
Madhavi Konni Soma Sekhar Kadiyala, Challa Narasimham	

Vehicle Accident Prevention and Detection System Alfoni Jose K, B V Siva Prasad	38
Appraisal of An Employee's Performance at Work With Reference To Coromandal International Ltd, Visakhapatnam Dr. Rama Kumar P.B., Prof. Dr. Jaladi Ravi, Mr. P. Kiran Kumar	39
Detection of cancer cells using Image processing P.PoornaPriya,S. Harshita ,M. Soujanya,V. Bindu , P. Jhansi	40
A Study on Employees Satisfaction on Welfare & Safety Measures adopted in Power Sector Companies Y. Babji,P.B.RamKumar,A.Kiran Kumar	41
Pattern Synthesis using Fourier Transform Method J Babu, AdariBhargavi,MandapatiPavitra, KoiladaChanakya, Buddha Bhanusree	42
Comparative Study on Text Pre-Processing Techniques SampathiraoSuneetha, Prasanna Kumar Lakineni	43
PAPR Reduction Using Hybrid Ps-Gw Optimization P.Amrutha, Shiva Kumari	44
Design of A Compact Mimo Antenna For Fifth Generation Applications Dr. P. PoornaPriya, B. Sirisha, D. Gowri, S. Mounavi, B. Sravani	45
Measuring Platelet Count by Using contour Aware Segmentation K Vani,R.Suneelkumar ,R.Latha, P.SriRamya, K.Yamini , A.Ramjagan	46
An automatic toll ticketing system using image processing K Vijaya Pasamsa, M.Kishore kumar,Y. Durga lakshmi, B.Maraju, P.harish, S.Tejasri	47

PAPR Reduction Using Hybrid Ps-Gw Optimization

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Abstract OFDM has changed the way bandwidth was utilized in communication, this paper explains fundamentals of OFDM and its Multiband implementation in Ultra Wideband Technology. The most famous and attractive strategy used in wireless communication for huge transmission of data with higher rate was orthogonal frequency division multiplexing (OFDM) approach and for transmission of higher bandwidth range UWB approach is used. Major problem identified in OFDM and UWB-OFDM systems is high PAPR. The reduction of PAPR in OFDM system has been carried out with one of the most familiar approach called Partial transmit sequences (PTS). Various techniques are already presented for reducing the PAPR, some of them are, clipping, SLM, and PTS. From that PTS is considered as an efficient method because the PAPR was reduced by PTS without causing any signal distortion. In this work, PTS along with hybridization optimization algorithm named as PS–GW will be implemented to get the minimum performance on PAPR and computational complexity. The PS–GW is a combination of both the Particle Swarm Optimization (PSO) and Grey Wolf Optimizer (GWO) which search the optimal combination of phase rotational factors efficiently. A fundamental thought in this method was that the capacity of exploitation in PSO was enhanced with the capacity of investigation in GWO to create a two variations in quality. The results produced by this proposed method shows that the reduction was effectively determined in both PAPR and computational complexity. The same technique is applied to multiband OFDM ultra wide band signals and PAPR is observed.

Keywords: OFDM, UWB, PTS, PSO, GWO, PAP