

2020 IEEE 17th India Council International Conference (INDICON 2020)

**New Delhi, India
10 – 13 December 2020**

Pages 1-517



**IEEE Catalog Number: CFP20598-POD
ISBN: 978-1-7281-6917-0**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP20598-POD
ISBN (Print-On-Demand):	978-1-7281-6917-0
ISBN (Online):	978-1-7281-6916-3
ISSN:	2325-940X

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

OPTIMAL COMPONENT SIZING OF AN ISOLATED PV-WIND-BATTERY MICROGRID IN INDIA USING MULTI OBJECTIVE OPTIMISATION.....	1
<i>Jani Das</i>	
PLUG-AND-PLAY PRIORS ENABLED SAR IMAGE INPAINTING IN THE PRESENCE OF SPECKLE NOISE.....	7
<i>Satyakam Baraha, Ajit Kumar Sahoo</i>	
STAKESONET: ANALYSIS OF STAKEHOLDERS USING SOCIAL NETWORKS.....	13
<i>Tanveer Hassan, Chaudhary Wali Mohammad, Mohd. Sadiq</i>	
TILED-PYRAMIDAL WHOLE SLIDE IMAGE CREATION WITH CONSTANT MEMORY COMPLEXITY.....	19
<i>KK Harinarayanan, Abhay Kumar</i>	
MACHINE LEARNING TECHNIQUES FOR PERFORMANCE ENHANCEMENT OF Si ₃ N ₄ -GATE ISFET PH SENSOR.....	25
<i>Aditya Mehta, Hitesh Ahuja, Nishad Sahu, Rishabh Bhardwaj, Satyam Srivastava, Soumendu Sinha</i>	
SEAMLESS CONTROL OF RENEWABLE ENERGY SYSTEM WITH GRID CONNECTED AND ISLANDED MODES.....	32
<i>Varsha Yadav, Seema, Bhim Singh, Arunima Verma</i>	
REAL TIME FOREGROUND SEGMENTATION FOR VIDEO SEQUENCES WITH DYNAMIC BACKGROUND.....	38
<i>Manit Baser, Miloni Mittal, Devesh Samaiya</i>	
A NOVEL ULTRA-WIDEBAND AND MULTIFUNCTIONAL REFLECTIVE POLARIZATION CONVERTER.....	43
<i>Soumya Chakravarty, Debasis Mitra</i>	
AN EFFICIENT CONTROL STRATEGY FOR FREQUENCY SUPPORT IN SMART GRIDS USING ELECTRIC VEHICLES.....	47
<i>Sreelakshmi Ramadas, P Sreejaya</i>	
ON-CHIP INTELLIGENT FREQUENCY SCALING USING ARTIFICIAL NEURAL NETWORKS.....	54
<i>Arkid Kalyan Bera, Prachi Sharma, Anu Gupta</i>	
A PHASE-WISE ANALYSIS OF MACHINE LEARNING BASED HUMAN ACTIVITY RECOGNITION USING INERTIAL SENSORS.....	61
<i>Aditya Mehta, Sai Krishna Vaddadi, Vinay Sharma, Prateek Kala</i>	
SIMULTANEOUS MONITORING OF CARDIOPULMONARY SIGNALS UNOBTRUSIVELY: A DUAL RADAR BASED APPROACH.....	68
<i>Arindam Ray, Smriti Rani, Anwasha Khasnobish, Tapas Chakravarty</i>	
DESIGN AND DEVELOPMENT OF CAPACITOR RUN SPLIT-PHASE FAN MOTOR FOR HIGHER EFFICACY.....	73
<i>Utkarsh Sharma, Bhim Singh</i>	

CONTROL OF SOLAR-EV AND GRID INTEGRATED SYSTEM	79
<i>Yashi Singh, Bhim Singh, Sukumar Mishra</i>	
DESIGN AND IMPLEMENTATION OF GRID SEQUENCE SEPARATOR BASED CONTROL FOR SINGLE-PHASE MICROGRID	85
<i>Ankita Arora, Alka Singh</i>	
ARCHITECTURE OF FOG COMPUTING, ISSUES AND CHALLENGES: A REVIEW	92
<i>Satish Kumar Singh, Sanjay Kumar Dhurandher</i>	
DESIGN OF GAN BASED COMPARATOR CIRCUIT FOR RADIATION DETECTORS.....	98
<i>Vimal Kant Pandey, Cher Ming Tan, Sandeep Sharma</i>	
LONG TERM FORECASTING OF AMBIENT AIR QUALITY USING DEEP LEARNING APPROACH.....	104
<i>K. Krishna Rani Samal, Korra Sathya Babu, Abhirup Acharya, Santos Kumar Das</i>	
GROUNDING LOSSY INDUCTANCE SIMULATOR USING SINGLE FTFTTA.....	110
<i>Ravendra Singh, Dinesh Prasad</i>	
OBSERVER-BASED DISTURBANCE REJECTION VOLTAGE CONTROL OF PV-BATTERY BASED MICROGRID	116
<i>Shailendra Kumar, Bhim Singh</i>	
CHARACTERIZATION OF FABRY PEROT INTERFEROMETER BASED PRESSURE SENSOR OF RANGE 100 MBAR	122
<i>Shrinkhla Ghildiyal, Rajappa Balasubramaniam, Joseph John</i>	
A JOINT SPARSE AND CORRELATION INDUCED SUBSPACE CLUSTERING METHOD FOR SEGMENTATION OF NATURAL IMAGES	127
<i>Jobin Francis, Akhil Johnson, Baburaj Madathil, Sudhish N George</i>	
HARMONIC ANALYSIS OF THE TRAPEZOIDAL WAVES IN THE POWER QUALITY ISSUES.....	134
<i>Tapas Halder</i>	
A FRAMEWORK FOR DETECTION OF ANDROID MALWARE USING STATIC FEATURES	140
<i>Meghna Dhalaria, Ekta Gandotra</i>	
ANALYZING THE IMPACT OF DEGREES OF FREEDOM ON THE PERFORMANCE OF FRACTIONAL ORDER PID CONTROLLERS IN ROBOTIC MANIPULATORS WITH PAYLOADS.....	147
<i>Perez Yeptho, Khushboo Katheria, Sharanya Swain, Perna Gaur</i>	
S ⁴ BZ PFC CONVERTER FOR BLDC MOTOR CEILING FAN	153
<i>Amit Kumar, Utkarsh Sharma, Bhim Singh</i>	
META-DRN: META-LEARNING FOR 1-SHOT IMAGE SEGMENTATION	159
<i>Atmadeep Banerjee</i>	
MULTILAYER MICROMAGNETIC MODELS FOR ALL SPIN LOGIC.....	165
<i>Shivam Verma</i>	
HIGH LEVEL SYNTHESIS OF CHAOS BASED TEXT ENCRYPTION USING MODIFIED HILL CIPHER ALGORITHM.....	170
<i>Anvit Negi, Devansh Saxena, Kriti Suneja</i>	

DESIGN OF FOPID CONTROLLER FOR OPTIMIZING AVR SYSTEM USING NEURAL NETWORK ALGORITHM	175
<i>Amrit Kaur Bhullar, Ranjit Kaur, Swati Sondhi</i>	
EFFECTIVENESS OF MULTI-FRACTAL ANALYSIS IN DIFFERENTIATING SUBGROUPS OF RETINAL IMAGES.....	181
<i>Devanjali Relan, Kiran Khatter</i>	
APPLICATION OF DIFFERENTIAL EVOLUTION ALGORITHM TO OPTIMAL CONTROL PROBLEM WITH STATE VARIABLE CONSTRAINTS	187
<i>Venkata Satya Durga Manohar Sahu, Padarbinda Samal, Chinmoy Kumar Panigrahi</i>	
DEEP LEARNING IDENTIFIES BRAIN COGNITIVE LOAD VIA EEG SIGNALS	194
<i>Anirudra Diwakar, Taranjit Kaur, Chetan Ralekar, Tapan Kumar Gandhi</i>	
FREQUENCY RECONFIGURABLE MICROSTRIP PATCH ANTENNA WITH AN ARC-SHAPED CUT	199
<i>Devesh Kumar, Anwar Shahzad Siddiqui, Hemender Pal Singh, Malay Ranjan Tripathy</i>	
DYNAMIC FUNCTIONAL CONNECTIVITY REVEALS STAGES OF FACE PERCEPTION IN BRAIN	204
<i>Shefali Gupta, Tapan Kumar Gandhi, Pawan Sinha</i>	
NANO-ROBOTIC BASED THROMBOLYSIS: DISSOLVING BLOOD CLOTS USING NANOBOTS	212
<i>Puru Malhotra, Nimesh Shahdadpuri</i>	
AUTOMATIC EXTRACTION OF SEGMENTS FROM RESUMES USING MACHINE LEARNING.....	216
<i>B Gunaseelan, Supriya Mandal, V Rajagopalan</i>	
CONTROL OF QUADRATIC BUCK CONVERTER USING NON-LINEAR CONTROLLER	222
<i>Kumar Pandey, Mahesh Kumar, Amita Kumari, Jagdish Kumar</i>	
PERFORMANCE ANALYSIS OF CEREBELLUM CONTROLLER FOR NONLINEAR SYSTEMS	228
<i>Md Qutubuddin, G. Vijaya Bhargavi, Narri Yadaiah</i>	
DCNN BASED DUAL ASSURANCE MODEL FOR AGE ESTIMATION BY ANALYZING FACIAL IMAGES	235
<i>Zarana Shah, Moumita Roy</i>	
UNBOXING THE BLACKBOX - VISUALIZING THE MODEL ON HAND RADIOGRAPHS IN SKELETAL BONE AGE ASSESSMENT	241
<i>Shipra Madan, Anirudra Diwakar, Tapan Gandhi, Santanu Chaudhury</i>	
$L_{1/2}$ REGULARIZED RPCA TECHNIQUE FOR 3D HUMAN ACTION RECOVERY	247
<i>M. S. Subodh Raj, Sudhish N. George</i>	
DESIGN OF A ROBUST CONTROLLER FOR A VOLTAGE-MODE CONTROLLED BUCK CONVERTER	252
<i>Sayan Bhattacharya, Amit Kumar Singha, Aparajita Sengupta</i>	
ROOT CAUSE ANALYSIS OF POWER SWITCH IN DEADLOCK STATE USING IEEE 1801 (UPF).....	257
<i>Sagar J. Patel, Sorabh Sachdeva, Siddhartha Jain</i>	

CLASSIFICATION OF HYPERSPECTRAL IMAGE USING ENSEMBLE LEARNING METHODS: A COMPARATIVE STUDY	263
<i>Diganta Kumar Pathak, Sanjib Kumar Kalita, Dhruva Kumar Bhattacharya</i>	
2D-FFT BASED MODULATION CLASSIFICATION USING DEEP CONVOLUTION NEURAL NETWORK.....	269
<i>Yogesh Kumar, Gaurav Jajoo, Sandeep Kumar Yadav</i>	
POWER AND SPECTRUM EFFICIENT D2D COMMUNICATION FOR 5G IOT USING STACKELBERG GAME THEORY	275
<i>Subha Ghosh, Debashis De</i>	
WATER STRESS IDENTIFICATION IN CHICKPEA PLANT SHOOT IMAGES USING DEEP LEARNING.....	282
<i>Shiva Azimi, Taranjit Kaur, Tapan K Gandhi</i>	
OCULAR ARTIFACT ELIMINATION FROM EEG SIGNALS USING ROBUST VARIABLE STEP SIZE LMF ADAPTIVE ALGORITHM	289
<i>Sridhar Chintala, Ankit Kumar, Jaisingh Thangaraj</i>	
DISTURBANCE OBSERVER BASED FRACTIONAL ORDER SLIDING MODE CONTROL FOR QUADROTOR	294
<i>Ashutosh Bist, Swati Sondhi</i>	
DESIGN AND ANALYSIS OF FLEXIBLE MICROSTRIP ANTENNA FOR WEARABLE APPLICATIONS AT ISM BAND	301
<i>Payal Bhardwaj, Ritesh Kumar Badhai</i>	
DIAGNOSIS OF PARKINSON'S DISEASE USING COMPUTER AIDED TOOL BASED ON EEG	306
<i>K Shreya Prabhu, Roshan Joy Martis</i>	
DESIGN ANALYSIS OF A LUNA SHAPED UWB ANTENNA FOR SPECTRUM SENSING IN 3.1-10.6GHZ	310
<i>T. Gayatri, G. Srinivasu, D. M. K. Chaitanya, V. K. Sharma</i>	
ANALYSIS OF AN ADAPTIVE FUZZY CONTROL SCHEME: APPLICATION TO A LOWER LIMB EXOSKELETON	315
<i>Anusha Kumar, Puneet Mishra</i>	
EMPIRICAL VALIDATION OF REQUIREMENTS TRACEABILITY METRICS FOR REQUIREMENTS MODEL OF DATA WAREHOUSE USING SVM	322
<i>Tanu Singh, Manoj Kumar</i>	
MASK DISPOSAL BIN.....	327
<i>Aditya Mangesh Baradkar</i>	
A NOVEL FUZZY ADAPTIVE JAYA OPTIMIZATION FOR AUTOMATIC GENERATION CONTROL IN MULTI-AREA POWER SYSTEM.....	330
<i>Chittaranjan Pradhan, Terje Gjengedal</i>	
REVITALIZING STOCK PREDICTIONS WITH MACHINE LEARNING ALGORITHMS – AN EMPIRICAL STUDY	336
<i>Vaibhav Gaur, Shubham Sood, Lisha Uppal, Manpreet Kaur</i>	
INTELLIGENT ELEVATOR DESIGN USING PLC	342
<i>Pearl Pullan, Muskan Arora, Krishna Mehta, Vandana Niranjana</i>	

A COMPARATIVE ERROR PERFORMANCE STUDY OF POWER ADAPTIVE REGENERATIVE RELAYING POLICY, AND BENCHMARK RELAYING POLICIES	348
<i>Rahul Sharma, Sainath Bitragunta</i>	
PREDICTIVE FAILURE ANALYSIS OF SPINDLE MOTOR & CUTTING OIL CONDITION MONITORING OF GRINDING MACHINE USING ARTIFICIAL INTELLIGENCE MODELS	354
<i>Anudruti Singha, Junaid Ali, Vansh Khara</i>	
ISLANDING DETECTION IN DC MICROGRIDS USING SYSTEM IMPEDANCE MONITORING TECHNIQUES	361
<i>Bhabani Kumari Choudhury, Premalata Jena</i>	
PATTERN RECOGNITION TECHNIQUE BASED ISLANDING DETECTION SCHEME IN GRID-CONNECTED PV SYSTEM	367
<i>Omveer Singh, Shailesh Kumar Gupta, Shabana Urooj, Jyoti Sagar</i>	
BO-TREE: AN EFFICIENT SEARCH TREE.....	374
<i>Y. Bhavani, Kiran Kumar Bejjanki, Jaya Krishna Bhonagiri, Sai Srikar Puppala</i>	
BI-LSTM AND ENSEMBLE BASED BILINGUAL SENTIMENT ANALYSIS FOR A CODE- MIXED HINDI-ENGLISH SOCIAL MEDIA TEXT	379
<i>Konark Yadav, Aashish Lamba, Dhruv Gupta, Ansh Gupta, Purnendu Karmakar, Sandeep Saini</i>	
AN AUTOMATIC DRONE TO SURVEY ORCHARDS USING IMAGE PROCESSING AND SOLAR ENERGY.....	385
<i>P Surekha, Nithisha Venu, Ashwini N Shetty, Omang Sachan</i>	
DESIGN AND CONTROL OF A BI-DIRECTIONAL CLLC RESONANT CONVERTER FOR LOW VOLTAGE ENERGY STORAGE SYSTEMS	392
<i>Ajeet K. Dhakar, Abhinav Soni, Hari Om Bansal</i>	
OUTAGE ANALYSIS OF DF BASED MIXED HYBRID MULTI-HOP COOPERATIVE SYSTEM	400
<i>Smriti Rekha Baruah, Pallab Sarma</i>	
AN OPTIMIZED AHO-CORASICK MULTI-PATTERN MATCHING ALGORITHM FOR FAST PATTERN MATCHING.....	406
<i>Uday Trivedi</i>	
OSEPCLOUD: OPPORTUNISTIC SCENARIO-BASED SECURITY AND PRIVACY ENHANCED DATA FORWARDING FRAMEWORK FOR CLOUD COMPUTING	411
<i>Siddhant Banyal, Kartik Krishna Bhardwaj, Riyanshi Gupta, Isha Verma, Prerna Gaur</i>	
300MHZ TO 500MHZ OPTIMIZATION OF ARM CORTEX M7 FOR SENSOR FUSION SOCS BY USING MULTI-THRESHOLD LIBRARIES AND MULTI-BIT REGISTER CELLS IN 16NM FINFET	417
<i>Neerupama Gupta, Anuj Grover</i>	
ANDROID APPLICATIONS ENRICH SATCOM TERMINALS HUMAN INTERFACES: THREE USE CASES	422
<i>Leena Kohli Kapoor, Sunkara Ashish</i>	
PERFORMANCE ANALYSIS OF MACHINE LEARNING AND DEEP LEARNING MODELS FOR TEXT CLASSIFICATION.....	427
<i>C M Suneera, Jay Prakash</i>	

SOLAR PV INTEGRATION TO E-RICKSHAW WITH REGENERATIVE BRAKING AND SENSORLESS CONTROL.....	433
<i>Biswajit Saha, Bhim Singh</i>	
A NEW COVID-19 MEDICAL IMAGE STEGANOGRAPHY BASED ON DUAL ENCRYPTED DATA INSERTION INTO MINIMUM MEAN INTENSITY WINDOW OF LSB OF X-RAY SCANS	439
<i>Subhaluxmi Sahoo, Sony Snigdha Sahoo</i>	
TRANSFER LEARNING FOR SUBJECT-INDEPENDENT STRESS DETECTION USING PHYSIOLOGICAL SIGNALS	445
<i>K Radhika, V Ramana Murthy Oruganti</i>	
EARLY CLASSIFICATION OF ABNORMAL HEALTH USING LONGITUDINAL STRUCTURAL MRI DATA	451
<i>K Devika, V Ramana Murthy Oruganti</i>	
AUTOMATIC OFFICE ENVIRONMENT SYSTEM FOR EMPLOYEES USING IOT AND COMPUTER VISION.....	457
<i>Devang Sharma, Himanshu Sharma, Dipesh Panchal</i>	
IMPROVED SPEECH EMOTION RECOGNITION USING MODIFIED MEAN CEPSTRAL FEATURES.....	463
<i>Krishna Chauhan, Kamlesh Kumar Sharma, Tarun Varma</i>	
RETINAL VESSEL SEGMENTATION USING ROBINSON COMPASS MASK AND FUZZY C-MEANS.....	469
<i>Kiran Khatter, Devanjali Relan, Atul Mishra</i>	
INTERMEDIATE GENERATION SELECTION ATTENTION AND MULTI-SCALE FEATURE AGGREGATION FOR SEGMENTATION OF CELL REGIONS IN RPE IMPLANT ABSORBANCE IMAGES.....	475
<i>Gaurav Patel, Hitesh Tekchandani, Shrish Verma</i>	
FREQUENCY REGULATION TECHNIQUE IN AC-DC NETWORK USING CONVERTER CURRENT MODULATION IN VSC-HVDC SYSTEM	482
<i>Ashima Taneja, Radheshyam Saha, Madhusudan Singh</i>	
ANALYSIS OF PACKET AGGREGATION ON CLOUD GAMES.....	490
<i>Aditi Gupta, Subrat Kar</i>	
A 345 NW POWER CONTINUOUS TIME DELTA SIGMA MODULATOR FOR BIOMEDICAL APPLICATIONS.....	494
<i>Laxmeesha Somappa, Maryam Shojaei Baghini</i>	
EVALUATION OF PERFORMANCE METRICS AND DENOISING OF PCG SIGNAL USING WAVELET BASED DECOMPOSITION	498
<i>Samit Kumar Ghosh, Rajesh Kumar Tripathy, R N Ponnalagu</i>	
AN INTEGRATED DETECTION AND TREATMENT RECOMMENDATION FRAMEWORK FOR BREAST CANCER USING CONVOLUTIONAL NEURAL NETWORKS AND TOPSIS.....	504
<i>Devdatta Basu, Sheetal Kashid, Sanjay Pawar, Debabrata Datta</i>	
CLASSIFICATION OF MOTOR IMAGERY WAVES USING HYBRID-CONVOLUTIONAL NEURAL NETWORK.....	511
<i>Pushkar Khetrpal, Saraja Kadambari</i>	

GENDER AND AGE GROUP PREDICTIONS FROM SPEECH FEATURES USING MULTI-LAYER PERCEPTRON MODEL	518
<i>Saksham Goyal, Vinay Vasanth Patage, Sourabh Tiwari</i>	
PERFORMANCE-BASED ANALOGISING OF NEEDLEMAN WUNSCH ALGORITHM TO ALIGN DNA SEQUENCES USING GPU AND FPGA	524
<i>Chirag Kyal, Rishav Kumar, Adil Zamal</i>	
VARIATIONAL MODE DECOMPOSITION BASED MENTAL TASK CLASSIFICATION FROM ELECTROENCEPHALOGRAM	529
<i>Manali Saini, Udit Satija, Madhur Deo Upadhayay</i>	
INVESTIGATION OF THE EFFECT OF ORGANIC AND INORGANIC CARBON ON BIOMASS PRODUCTION AND ASTAXANTHIN ACCUMULATION OF THE MICROALGA HAEMATOCOCCUS PLUVIALIS USING ARTIFICIAL NEURAL NETWORK.....	536
<i>Vinoj Chamilka Liyanaarachchi, Malith Premaratne, Pematththu Hewa Viraj Nimarshana, Thilini Udayangani Ariyadasa</i>	
FEATURE DESCRIPTORS FOR FACE RECOGNITION.....	542
<i>Puja S Prasad, Vinit Kumar Gunjan</i>	
IOT BASED NON-CONTACT PORTABLE THERMAL SCANNER FOR COVID PATIENT SCREENING.....	546
<i>Tanima Bhowmik, Rohan Mojumder, Indrajit Banerjee, Gaurav Das, Anagha Bhattacharya</i>	
DYNAMIC ENSEMBLE BASED FEATURE SELECTION MODEL FOR CREDIT CARD FRAUD DETECTION	552
<i>Shubhi Shukla, Deepak Rakesh</i>	
MULTI-AGENT REINFORCEMENT LEARNING BASED EFFICIENT ROUTING IN OPPORTUNISTIC NETWORKS.....	558
<i>Jagdeep Singh, Sanjay Kumar Dhurandher, Isaac Woungang</i>	
COMPLEX STATE VARIABLES BASED NOVEL HYPERCHAOTIC SYSTEM WITH NINE EQUILIBRIA	564
<i>Sugandha Khavaiyya, Piyush Pratap Singh</i>	
UNIVERSAL LOGIC GATES USING ORGANIC THIN-FILM TRANSISTOR	570
<i>Neetika Kashyap, Vandana Niranjana</i>	
MODIFIED IMC FOR AUTOMATIC VOLTAGE REGULATOR VIA ORDER REDUCTION TECHNIQUES.....	576
<i>Rishabh Verma, Anil Kumar Yadav, Pawan Kumar Pathak</i>	
RESPONSE SURFACE METHODOLOGY FOR OPTIMIZATION OF CATHODE SURFACE AREA AND INTER-ELECTRODE GAP IN ELECTRO-GENERATION OF H ₂ O ₂	581
<i>Wanniarachchige Paramitha Sandani, Malith Premaratne, Thilini U. Ariyadasa, Jagath K. Premachandra</i>	
TWO-LEVEL COMBINED CLASSIFICATION TECHNIQUE USING RANKLET TRANSFORMATION FOR THE DETECTION OF MRI BRAIN TUMOR	587
<i>Manu Singh, Vibhakar Shrimali</i>	
PROPELLER POWER EFFECT STUDY INSTRUMENTATION FOR PERFORMANCE EVALUATION OF AIRCRAFT DESIGN.....	592
<i>Chaturi Singh, Rohit Samkaria, Tanu Shukla</i>	

EVOLUTION OF ELECTRIC VEHICLE CHARGING & ENERGY STORAGE INFRASTRUCTURE IN INDIA	597
<i>Abhay Bakre, Sameer Pandita, Deepak Tripathi</i>	
A FINE TUNED MODEL OF GRASSHOPPER OPTIMIZATION ALGORITHM WITH CLASSIFIERS FOR OPTIMAL TEXT CLASSIFICATION.....	604
<i>Anshu Khurana, Om Prakash Verma</i>	
DEMONSTRATING LOW-COST UNMANNED AERIAL VEHICLE FOR ANTI-POACHING	611
<i>Joseph K. Paul, Tankala Yuvaraj, Karthikay Gundepudi</i>	
EFFECT OF SOC UNCERTAINTY ON MPC BASED ENERGY MANAGEMENT STRATEGY FOR HEVS.....	618
<i>Susenjit Ghosh, Dhrupad Biswas, Desham Mitra, Somnath Sengupta, Siddhartha Mukhopadhyay</i>	
AN AUTOMATED APPROACH TO DETECT AND LABEL ABANDONED OBJECTS FROM VIDEOS USING GENERALIZED ROIS.....	624
<i>Monika Mehta, Kamaldeep Kaur</i>	
AUTOMATIC LICENSE PLATE RECOGNITION OF BIKERS WITH NO HELMETS.....	630
<i>Aditya Mandeep Vakani, Ashwin Kumar Singh, Shrey Saksena, Vanamala H. R.</i>	
IMPROVED RLS ALGORITHM FOR VOLTAGE REGULATION OF WIND-SOLAR RURAL RENEWABLE ENERGY SYSTEM.....	635
<i>Souvik Das, Bhim Singh</i>	
DISTRIBUTED GENERATORS BASED DSTATCOM AND ITS HARMONIC ASSESSMENT	641
<i>Rinchin W. Mosobi, Sarsing Gao</i>	
DELAY-DEPENDENT STABILITY ANALYSIS OF NETWORK-CONTROLLED DC MOTOR WITH TIME-INVARIANT DELAYS.....	647
<i>Manikandan Subramanian, Priyanka Kokil</i>	
FUSION OF INFORMATION FOR FAULT DIAGNOSIS IN ANALOG CIRCUITS.....	654
<i>M. Parai, K. Ghosh, H. Rahaman</i>	
AN ACCURATE AUTO-TUNABLE QUADRATURE-PHASE GENERATOR CIRCUIT FOR ROBUST SENSING APPLICATIONS	660
<i>Shahid Malik, Laxmeesha Somappa, Meraj Ahmad, Maryam Shojaei Baghini</i>	
HEALTHCARE APPLICATIONS OF 3D PRINTING IN HUMAN IMPLANTS: A REVIEW	665
<i>Saveri Singh, Shabana Urooj, Naresh Batra, Shaeen Kalathil</i>	
PREDICTION OF NUMBER OF FATALITIES DUE TO COVID-19 USING MACHINE LEARNING.....	671
<i>Manpinder Singh, Saiba Dalmia</i>	
POWER ALLOCATION ASSISTED NEW CONTROL JAMMING SCHEME FOR NOMA ENABLED AF RELAY NETWORK	677
<i>Narasimha Nayak Vankudoth, Kiran Kumar Gurrala</i>	
MODELING OF SELECTED SET OF SOFTWARE REQUIREMENTS USING UML CLASS DIAGRAMS.....	683
<i>Mohd. Arif, Chaudhary Wali Mohammad, Mohd. Sadiq</i>	

EMD-BASED DISCRIMINATION OF MENTAL ARITHMETIC TASKS FROM EEG SIGNALS	689
<i>Virender Kumar Mehla, Amit Singhal, Pushpendra Singh</i>	
FUZZY ENTROPY AS A MEASURE OF EEG COMPLEXITY DURING RAJAYOGA PRACTICE IN LONG-TERM MEDITATORS.....	693
<i>G Pradeep Kumar, Ramakrishnan Angarai Ganesan, Kanishka Sharma</i>	
TONSILLITIS BASED EARLY DIAGNOSIS OF COVID-19 FOR MASS-SCREENING USING ONE-SHOT LEARNING FRAMEWORK.....	698
<i>Himansh Mulchandani, Poojan Dalal, Ojas A. Ramwala, Parima Parikh, Upena Dalal, Mita Paunwala, Chirag Paunwala</i>	
SHORT TEXT INTENT CLASSIFICATION FOR CONVERSATIONAL AGENTS.....	704
<i>Sahil Kuchlous, Madhura Kadaba</i>	
DESIGN OF A LOW POWER 1T-1MTJ NON-VOLATILE SRAM CELL WITH HALF- SELECT FREE OPERATION	708
<i>Kanika Monga, Nitin Chaturvedi, S Gurunarayanan</i>	
TOWARDS THE LAW ENFORCEMENT OF FIREARMS	713
<i>Kushagra Yadav, Ravneet Punia, Ns Raghava</i>	
SOIL ANALYSIS AND ITS TYPE PREDICTION WITH SPEECH ENABLED OUTPUT USING IOT AND AWS.....	719
<i>Suman Mohapatra, Alivarani Mohapatra, Aniket Patil</i>	
EFFECTIVENESS OF PHASE CORRELATION SPECTRAL SIMILARITY MEASURE IN DISTINGUISHING TARGET SIGNATURES FOR HYPERSPECTRAL DATA ANALYSIS	723
<i>Palla Parasuram Yadav, Amba Shetty, Bs Raghavendra, Av Narasimhadhan</i>	
AN EFFICIENT IMAGE INTERPOLATION USING EDGE-ERROR BASED SHARPENING	728
<i>Jagyanseni Panda, Sukadev Meher</i>	
SOLAR DISTRIBUTION IN RAILWAY ENERGY BUSINESS	734
<i>Ghan Shyam Singh</i>	
REALIZATION OF FULLY DIFFERENTIAL THIRD ORDER OTA-C FILTERS USING CMLT TECHNIQUE.....	737
<i>Lily Kumari, Shweta Kumari, Maneesha Gupta</i>	
DESIGN AND ANALYSIS OF VOLTAGE CONTROL FUNCTION GENERATOR USING HIGHLY LINEAR CCII	744
<i>Shweta Kumari, G. S. Visweswaran, Lily Kumari</i>	
IMPLEMENTATION OF NON-SWITCHING DISCRETE TIME SLIDING MODE CONTROL FOR SPEED TRACKING OF A DC MOTOR.....	750
<i>Jagannath Samantaray, Sohom Chakrabarty</i>	
CONTROL OF INDIGENOUS AUTOMATIC SWITCHED NEUTRAL SECTION - A REVOLUTION IN RAILWAY TRACTION POWER	756
<i>Ghan Shyam Singh</i>	
MODELLING AND ANALYSIS OF MULTI-JUNCTION PHOTOVOLTAIC CELLS	760
<i>Arjit Verma, Abhijit Pethe</i>	
SMART ROOMS	766
<i>Lohit Sai Karumuri, Anuradha Yarlagadda</i>	

EXPOSING DEEPPAKES USING CONVOLUTIONAL NEURAL NETWORKS AND TRANSFER LEARNING APPROACHES	770
<i>Shraddha Suratkar, Faruk Kazi, Mukul Sakhalkar, Nikhil Abhyankar, Mrunal Kshirsagar</i>	
SENSITIVITY ANALYSIS OF IMC-PID CONTROLLER WITH SMITH PREDICTOR USING DIFFERENT FILTERS.....	778
<i>Manish Yadav, Hiren Kumar G. Patel</i>	
OPTICAL-NOC: FUTURE OF NEW COMPUTATIONAL SYSTEMS.....	784
<i>Kapil Sharma, Vivek Kumar Sehgal</i>	
SUPERNUMERARY ROBOTIC LIMBS FOR THE BLIND.....	790
<i>SG Shreyanka, Parthan Manisekaran, Kakarlapudi Sai Varma, D Sethuram</i>	
AUTONOMIC RUNTIME ADAPTATION FRAMEWORK FOR POWER MANAGEMENT IN LARGE-SCALE HIGH-PERFORMANCE COMPUTING SYSTEMS.....	797
<i>Sumit Kumar Saurav, S Bindhumadhva Bapu</i>	
EVENT-TRIGGERED ROBUST TRACKING CONTROLLER FOR UNCERTAIN NONLINEAR SYSTEMS USING ADAPTIVE CRITIC.....	804
<i>Raju Dahal, Indrani Kar</i>	
A STREAMLINED APPROACH FOR ASSESSING THE POWER QUALITY IN RENEWABLE ENERGY SYSTEMS.....	810
<i>Mohit Bajaj, Amit Kumar Singh</i>	
MULTI-OUTPUT FLYBACK CONVERTER CLOSED LOOP CONTROL WITH MPPT TRACKED PV MODULE.....	816
<i>Rajat Singh, Sourav Bose, Prakash Dwivedi</i>	
FRAMEWORK FOR MULTIMODAL IMAGE FUSION FOR DETECTION OF GLIOBLASTOMA	822
<i>Leena Chandrashekar, A Sreedevi</i>	
INTERPRETING A BLACK-BOX MODEL USED FOR SCADA ATTACK DETECTION IN GAS PIPELINES CONTROL SYSTEM.....	828
<i>Jash Rathod, Chaitali Joshi, Janavi Khochare, Faruk Kazi</i>	
TCAD ASSESSMENT BASED DEVICE TO CIRCUIT-LEVEL PERFORMANCE COMPARISON STUDY OF SOURCE POCKET ENGINEERED ALL-SI VERTICAL TUNNEL FET AND GASB/SI HETEROJUNCTION VERTICAL TUNNEL FET	835
<i>Manas Ranjan Tripathy, Ashish Kumar Singh, Satyabrata Jit</i>	
QUADRUPED ROBOTS: GAIT ANALYSIS AND CONTROL	840
<i>Tarun Joseph, Ahmed Shaikh, Mitesh Sarode, Yerramreddy Srinivasa Rao</i>	
SUPERVISED MACHINE LEARNING FOR LINK PREDICTION USING PATH-BASED SIMILARITY FEATURES.....	846
<i>Anisha Kumari, Satya Prakash Sahoo, Ranjan Kumar Behera, Bibhudatta Sahoo</i>	
A NOVEL PIDA CONTROLLER DESIGN FOR A SINGLE-AXIS GIMBAL SYSTEM.....	853
<i>Mahendra Kumar, Yogesh V. Hote</i>	
COMPARATIVE STUDY OF CURVATURE CORRECTION IN CMOS BANDGAP REFERENCE CIRCUIT	859
<i>Anushree, Jasdeep Kaur</i>	

AXI BASED THREE 8-BIT PARALLEL INPUT TO ONE SERIAL OUTPUT CONVERTER WITH PRIORITY MANAGEMENT SYSTEM AND ASYNCHRONOUS CLOCKS AT INPUT AND OUTPUT.....	863
<i>Manshi Agrawal, Juilly Sunilrao Videkar, Anuj Grover</i>	
DESIGN AND SIMULATION OF OPERATIONAL AMPLIFIER USING NON CONVENTIONAL METHOD FOR LOW POWER APPLICATIONS.....	869
<i>Dipesh Panchal, Amisha Naik</i>	
A COMPACT CP STAR-SHAPED RECTENNA FOR WLAN	872
<i>M Ayyappan, Pragati Patel</i>	
DISCRETE TIME ADAPTIVE OBSERVATION OF CAPACITOR VOLTAGE OF MODULAR MULTILEVEL CONVERTERS.....	878
<i>Jagannath Samantaray, Rupak Chakraborty, Sohom Chakrabarty, Anubrata Dey</i>	
HIGH-RADIX VEDIC SRT DIVISION RETIRING IRREDUNDANT QUOTIENT DIGITS ON-THE-FLY	884
<i>Ryan Dsouza</i>	
EFFECTS OF ELECTRICAL AND PHYSICAL PARAMETERS ON MOBILITY OF ORGANIC THIN FILM TRANSISTOR	889
<i>Shreya Sharma, Priyanka Deep, Raghav Tandon, Vaishnavi Anand, P Sandeep Kumar, Rajesh Agarwal</i>	
DESIGN OF A HEXA-DIRECTIONAL FSO COMMUNICATION FOR UAVS	894
<i>Robin Koshy Mathews, Charan Kotaprolu, Jeevesh Reddy Katha Venkata, Sai Tharun Kakkirala, Raj Kumar Gajula</i>	
AWAF: AI ENABLED WEB CONTENTS AUTHORIZING FRAMEWORK	898
<i>Ravi Nanjundappa, N Gajendra, Lakshya, Siba Prasad Samal, N Mahesha, Aakash Pahuja, Venu Madhav Musham, Eun Namgung</i>	
PARAMETER ESTIMATION AND COMPARATIVE ANALYSIS OF CONTROL DESIGN TECHNIQUES FOR BLDC HUB MOTOR	903
<i>Shivanand Pal, Akshit Patel, Aditya Mandar Jabade, Kartheek Miduthuru, Gaurav Sahu, B. A. Botre, Brijendra Kumar Verma, S. A. Akbar</i>	
ANALYSIS OF DUAL ACTIVE BRIDGE CONVERTER IN DUAL-PHASE-SHIFT MODE USING PULSE-WIDTH MODULATION TECHNIQUE	911
<i>Aashish Ranjan, Anand Abhishek, Brijendra Kr. Verma, Subhash Kr. Ram, Sachin Devassy, Ajeet Kr. Dhakar</i>	
DEVICE-TO-CIRCUIT INTEGRATED DESIGN OF DMFET BIOSENSOR AND ITS READOUT USING CMOS PRE-CHARGE AMPLIFIER.....	918
<i>Nishant Gupta, Kavindra Kandpal</i>	
GLAUCOMA DETECTION AND SEGMENTATION AS COMPUTER AIDED DESIGN: A REVIEW AND STUDY	925
<i>Jayesh Vasudeva, Pranshu Rastogi, Jyoti Yadav</i>	
ACTIVELY COMPENSATED READ ASSIST TECHNIQUE FOR 0.6 V OPERATION OF 16 MB HIGH DENSITY SRAM IN 65NM LSTP.....	932
<i>Belal Iqbal, Mohd Arij, Tushar Bansal, Anuj Grover</i>	

VISUAL WORLD TO AN AUDIBLE EXPERIENCE: VISUAL ASSISTANCE FOR THE BLIND AND VISUALLY IMPAIRED	939
<i>S Shiv Mohith, S Vijay, V Sanjana, Niranjana Krupa</i>	
TRAJECTORY BASED HUMAN ACTION RECOGNITION USING CENTRE SYMMETRIC LOCAL BINARY PATTERN DESCRIPTORS	945
<i>S Shiv Mohith, S Vijay, V Sanjana, Niranjana Krupa</i>	
ENERGY SORTED MATRIX PENCIL METHOD TO IDENTIFY DOMINANT MODES FROM NOISY DATA.....	951
<i>Shishir Suvarna, Navyashree Shetty, Hrishikesh Date, Shivesh Mishra, Tejas Indani, Faruk Kazi</i>	
MODIFYING FPGA DESIGN FLOW FOR ACHIEVING BETTER CIRCUIT OPTIMIZATIONS	958
<i>Burhan Khurshid, Abida Yousuf</i>	
BIOSPECKLE ANALYSIS FOR EVALUATING THE EFFECTS OF TEMPERATURE REGIME ON SEED IMBIBITION CHARACTERISTICS	963
<i>Puneet Singh, Amit Chatterjee, Vimal Bhatia, Santosh Rana, Shashi Prakash</i>	
TWO DIMENSIONAL MOVING AVERAGE FILTER FOR PERFORMANCE ENHANCEMENT OF NOISY PHASE SHIFTED INTERFEROGRAMS.....	967
<i>Amit Chatterjee, Puneet Singh, Vimal Bhatia, Shashi Prakash</i>	
EARLY DETECTION OF SEED INFECTION USING MOTION HISTORY IMAGE BASED LASER BIOSPECKLE TECHNIQUE.....	973
<i>Puneet Singh, Amit Chatterjee, Vimal Bhatia, Santosh Rana, Shashi Prakash</i>	
REAL-TIME ROUTING FOR ITS ENABLED FOG ORIENTED VANET	978
<i>Ananya Paul, Sulata Mitra</i>	
A COMPARATIVE ANALYSIS OF MACHINE LEARNING CLASSIFIERS FOR ROBUST HEART DISEASE PREDICTION.....	985
<i>Hiren Kumar Thakkar, Hrushikesh Shukla, Sonali Patil</i>	
STEALTHY GPS SPOOFING: SPOOFER SYSTEMS, SPOOFING TECHNIQUES AND STRATEGIES	991
<i>Pardhasaradhi Bethi, Srihari Pathipati, Aparna P</i>	
AN FPGA-BASED DEAD-TIME COMPUTATION TECHNIQUE FOR NEUTRAL POINT CLAMPED MULTILEVEL INVERTER (NPC-MLI)	998
<i>Rishiraj Sarker, Asim Datta</i>	
PHASE OPPOSITION DISPOSITION PWM (POD-PWM) STRATEGY TO REDUCE WTHD CONTENT FROM AN NPC INVERTER-FED ELECTRIC VEHICLE SYSTEM.....	1003
<i>Rishiraj Sarker</i>	
DESIGN OF SMALL WIND TURBINE ELECTRIC SYSTEM FOR HOUSEHOLD ELECTRICITY AND WATER SUPPLY FOR IRRIGATION IN RURAL TANZANIA.....	1009
<i>Isaka J. Mwakitalima, Mohammad Rizwan, Narendra Kumar</i>	
ANALYSIS OF AI TECHNIQUES FOR MAXIMUM POWER POINT TRACKING UNDER PARTIAL SHADING CONDITIONS	1017
<i>Shagun Chaudhary, Alka Singh</i>	

LOW-RESOURCE END-TO-END SANSKRIT TTS USING TACOTRON2, WAVEGLOW AND TRANSFER LEARNING	1023
<i>Ankur Debnath, Shridevi S Patil, Gangotri Nadiger, Ramakrishnan Angarai Ganesan</i>	
OPTIMIZATION TECHNIQUES IN PV-WIND BASED DISTRIBUTION GENERATION- A BRIEF REVIEW	1028
<i>B. Srikanth Goud, B. Loveswara Rao, B. Nagi Reddy, N. Rajesh, B. Anjan, Ch. Rami Reddy</i>	
IMPROVED MODIFIED NEWTON RAPHSON LOAD FLOW METHOD FOR ISLANDED MICROGRIDS	1034
<i>Kashinath Hesaroor, Debapriya Das</i>	
CASCADED SOGI-FLL BASED REFERENCE CURRENT EXTRACTION METHOD FOR ACTIVE POWER FILTER IN MORE ELECTRIC AIRCRAFT	1040
<i>Animesh Mukherjee, Chandrasekaran S.</i>	
SOFTWARE PATTERNS TO IDENTIFY CREDIT RISK PATTERNS	1045
<i>Siddharth Bhatore, Y. Raghu Reddy, Lalit Mohan Sanagavarapu, Svl Sarat Chandra</i>	
SLEEP-AWAKE CLASSIFICATION USING EEG BAND-POWER-RATIOS AND COMPLEXITY MEASURES	1053
<i>Ramakrishnan Angarai Ganesan, Ritika Jain</i>	
STARFISH-SHAPED MIMO DIELECTRIC RESONATOR ANTENNA	1059
<i>Monika Yadav, M. Swathi Sivadas, Pragati Patel</i>	
PROFIT MAXIMIZATION OF MULTIPLE ACTIVE DISTRIBUTION NETWORKS USING A FUZZY BASED APPROACH.....	1064
<i>Avirup Maulik, Debapriya Das</i>	
AN ATTACK RESISTANCE MODEL FOR TRUSTWORTHINESS EVALUATION IN VANET.....	1071
<i>Urmila Bhanja</i>	
STUDY OF MPPT AND FPPT: A BRIEF COMPARISON	1078
<i>Gopal Chandra Mahato, Tanmoy Roy Choudhury, Byamakesh Nayak</i>	
ESTIMATION OF REGENERATIVE BRAKING FORCE IN ELECTRIC VEHICLES FOR MAXIMUM ENERGY RECOVERY	1085
<i>Prasanth Bathala, B. Sanju Srivasthav, Y. Sai Srinivas Reddy, K. Deepa</i>	
BACTERIAL IMAGE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORKS	1092
<i>Tumun Shaily, S Kala</i>	
DETERMINATION OF OPTIMAL SIZE OF BATTERY ENERGY STORAGE SYSTEM (BESS) FOR A RENEWABLE POWER BASED MICROGRID	1098
<i>Avirup Maulik, Debapriya Das</i>	
IMPLEMENTATION OF ANT COLONY OPTIMIZATION AND PARTICLE SWARM OPTIMIZATION IN ECONOMIC LOAD DISPATCH PROBLEM USING RENEWABLE SOURCE	1104
<i>Abhinav Srivastava, Satyendra Singh</i>	
MAGNETIC COUPLING CHARACTERISTICS OF SPIRAL SQUARE - CIRCULAR COUPLED COILS FOR WIRELESS EV BATTERY CHARGING SYSTEM.....	1110
<i>Dharavath Kishan, Marupuru Vinod, Nagendrappa Harischandrappa</i>	

HOW SUCCESSFUL IS A LOCKDOWN DURING A PANDEMIC?	1115
<i>Anwesh Kabiraj, Debojyoti Pal, Pushan Bhattacharjee, Kingshuk Chatterjee, Ritajit Majumdar, Debayan Ganguly</i>	
EFFECT OF CLIMATIC CONDITIONS ON GENDER SEGREGATED COVID-19 INFECTIONS AND FATALITIES.....	1121
<i>Srijit Chakrabarti, Pushan Bhattacharjee, Prince Khatick, Kingshuk Chatterjee, Ritajit Majumdar, Debayan Ganguly</i>	
A PROBABILISTIC ROUTING-BASED SECURE APPROACH FOR OPPORTUNISTIC IOT NETWORK USING BLOCKCHAIN.....	1127
<i>Poonam Rani, Arnav Balyan, Vibha Jain, Devesh Sangwan, Pushpinder Pal Singh, Jyoti Shokeen</i>	
STRATEGIC REDUCTION OF AREA AND POWER IN FIR FILTER ARCHITECTURE FOR ECG SIGNAL ACQUISITION.....	1134
<i>Sudhanshu Janwadkar, Rasika Dhavse</i>	
DESIGN AND ANALYSIS OF BEAM FORMING MICROSTRIP-FED ANTENNA FOR 5G NR APPLICATIONS.....	1141
<i>Jayshri Kulkarni</i>	
SEMI-BLIND ROBUST WATERMARKING WITH DUAL COMPLEX TREE WAVELET BASED HYBRID TRANSFORM AND SVD.....	1145
<i>Gurpreet Kaur, Rekha Agarwal, Vinod Patidar</i>	
PERFORMANCE EVALUATION AND ANALYSIS OF CNT FOR STRAIN SENSOR APPLICATIONS.....	1150
<i>Karamvir Singh, Bhoop Singh, Sandeep Sharma, Monish Gupta, Chandra Charu Tripathi</i>	
AN INTELLIGENT SYSTEM TO DETECT VIOLENT MOB ACTIVITIES	1156
<i>Prajakta Yadav, Pratham Regundwar, Aditya Wyawahare, Pankaj Pawar, Jyoti Madake</i>	
A SMART HOME SECURITY SYSTEM IN LOW COMPUTING IOT ENVIRONMENT	1166
<i>Jayanta Paul, Rajat Subhra Bhowmick, Baisakhi Das, Biplab K Sikdar</i>	
REAL TIME PEDESTRIAN DETECTION USING ROBUST ENHANCED TINY-YOLOV3.....	1173
<i>Chintakindi Balaram Murthy, Mohammad Farukh Hashmi</i>	
A 30-PULSE CONVERTER AND 4-LEVEL CASCADED INVERTER BASED MEDIUM VOLTAGE DRIVE USING MODIFIED LSPWM TECHNIQUE.....	1178
<i>Rohit Kumar, Bhim Singh, Piyush Kant</i>	
EXTREME GRADIENT BOOSTING CLASSIFICATION OF MOTOR IMAGERY USING COMMON SPATIAL PATTERNS	1183
<i>Malaika Vijay, Amith Kashyap, Aushim Nagarkatti, Shruti Mohanty, Rajasekar Mohan, Niranjana Krupa</i>	
A HIERARCHICAL APPROACH FOR MULTI-CLASS GALAXY CLASSIFICATION	1188
<i>Mridula Singhal, Shruti V. Hegde, Rajini Makam, Koshy George</i>	
NOVEL PERIODICALLY LOADED SLOW WAVE TRANSMISSION LINE WITH SPURIOUS MODE SUPPRESSION	1194
<i>Anuj Kumar Sahoo, Karun Rawat</i>	

DESIGN AND IMPLEMENTATION OF A CONSENSUS ALGORITHM TO BUILD ZERO TRUST MODEL	1198
<i>Annapurna P Patil, Gaurav Karkal, Jugal Wadhwa, Meer Sawood, K Dhanush Reddy</i>	
VISUALIZATION OF IMPEDANCE SPECTRA OF ANATOMICAL FINDING USING IMPEDANCE MARKS.....	1203
<i>Dhruba Jyoti Bora, Rajdeep Dasgupta</i>	
CONFIGURABLE TRANSACTOR FOR PRE-SI BOOT ROM VALIDATION	1208
<i>Atulesh Kansal, Akash Goel, Jhalak Gupta</i>	
PEV TRAFFIC-BASED PLANNING ATTRIBUTES FOR FAST CHARGING STATIONS.....	1211
<i>Shakti Vashisth, Praveen Kumar Agrawal, Nikhil Gupta, K. R. Naizi, Anil Swarnkar</i>	
ANALYSIS OF INTER-BEAT INTERVALS FROM WRIST PULSE SIGNALS	1218
<i>K. Sriharini, R. Kumanan, S. Sivagaminathan, V. Koushik, L. Vidhya</i>	
TUNICATE SWARM-BASED BLACK HOLE ENTROPIC FUZZY CLUSTERING FOR DATA CLUSTERING USING COVID DATA	1224
<i>Satish Chander, P Vijaya</i>	
A REAL-TIME COMPARATIVE STUDY ON THE PERFORMANCES OF UPQC WITH DIFFERENT CONTROL ALGORITHM.....	1229
<i>Biswajit Sahoo, Anup Kumar Panda, Mrutyunjaya Mangaraj, Gyana Manjari Sahoo</i>	
KINEMATICS ANALYSIS AND JACOBIAN CALCULATION FOR SIX DEGREES OF FREEDOM ROBOTIC ARM	1235
<i>Manpreet Kaur, Swati Sondhi, Venkata Karteek Yanumula</i>	
CROSS POLARIZATION REDUCTION OF LINE FED CIRCULAR MICROSTRIP BY DEFECTED GROUND STRUCTURE	1241
<i>G Rajalakshmy, Arpita Thakre</i>	
STEP-DOWN FIBONACCI SWITCHED CAPACITOR CONVERTERS- A TOPOLOGICAL DESIGN METHOD	1246
<i>Arvind Gupta, Shirish Raizada</i>	
OPTIMAL DSTATCOM ALLOCATION USING A HYBRID SEAGULL-DIFFERENTIAL EVOLUTION ALGORITHM.....	1252
<i>Padarbinda Samal</i>	
DESIGN AND ANALYSIS OF A NOVEL SPACE-TIME- FREQUENCY BLOCK CODED VECTOR OFDM SCHEME ROBUST TO RAYLEIGH FADING	1258
<i>Basil K Jeemon, Shahana T Kassim</i>	
FPGA-ASSISTED FRAMEWORK FOR HEART RATE EVALUATION USING ECG SIGNAL PROCESSING.....	1263
<i>Shruti Jain</i>	
MACHINE LEARNING ORIENTED RESOURCE ALLOCATION TO ACHIEVE ULTRA LOW POWER, LOW LATENCY AND HIGH RELIABILITY VEHICULAR COMMUNICATION NETWORKS.....	1269
<i>Sasweth C Rajanarayanan, Rohit Misra, Rahul Jashvantbhai Pandya</i>	
CROSS BORDER ELECTRICITY TRADING POLICY OF POWER INDIA FOR HUMANITY & AMITY.....	1274
<i>Tapas Halder</i>	

COORDINATED OPTIMAL POWER AND HEAT DISPATCH IN A MULTI-ENERGY MICROGRID	1280
<i>Anshuman Singh, Sumedha Sharma, Ashu Verma</i>	
PORTABLE SURFACE PLASMON RESONANCE (SPR) MEASUREMENT DEVICE FOR SENSING APPLICATIONS	1285
<i>Ritayan Kashyap, Ananya Bhattacharjee, Khargeswar Rangpi, Noman Hanif Barbhuiya, Biplob Mondal</i>	
A SIMPLIFIED LOAD VOLTAGE CONTROL SCHEME FOR POWER CONVERSION APPLICATIONS USING MODULAR MULTILEVEL CONVERTERS	1290
<i>V. V. Vaishakh, C. Sreekumar</i>	
TWITTER BOT DETECTION AND THEIR INFLUENCE IN HASHTAG MANIPULATION	1296
<i>Sanket Barhate, Ritika Mangla, Dhvani Panjwani, Suyash Gatkal, Faruk Kazi</i>	
BINARY STATE PREDICTION OF SLEEP OR WAKEFULNESS USING EEG AND EOG FEATURES	1303
<i>Ramakrishnan Angarai Ganesan, Ritika Jain</i>	
AUTOMATED SEGMENTATION OF OVERLAPPING CELLS IN CERVICAL CYTOLOGY IMAGES USING DEEP LEARNING	1310
<i>Ashwin Umadi, Kushal Nagarajan, Juthik Bangalore Venkatesha, Aashutosh Ganesh, Koshy George</i>	
SPACE VECTOR MODULATION STRATEGY FOR THREE LEVEL OPERATION OF FIVE-PHASE TWO-LEVEL DUAL VOLTAGE SOURCE INVERTER SYSTEM.....	1317
<i>Shailesh Kumar Gupta, Mohammad Arif Khan</i>	
EMULATION OF MEMS CAPACITIVE SENSOR FOR CMOS INTERFACE CIRCUIT VALIDATION	1321
<i>Piyush Joshi, Navin Singhal, M. Santosh, Ayan Bandyopadhyay, Saumya Paliwal, Ravindra Mukhiya, S. C. Bose</i>	
SPACECRAFT DOCKING USING MODEL PREDICTIVE CONTROL WITH STK-BASED VISUALIZATION	1326
<i>Ashik C Jayamon, Mathew Chethipuzha, Jashwanth S, Aravind R, Sreeja S</i>	
NEUROMORPHIC APPROACH BASED CURRENT SENSING ANALOG TO DIGITAL CONVERTER FOR BIOMEDICAL APPLICATIONS	1333
<i>Navin Singhal, M. Santosh, S. C. Bose, Abhijit Karmakar</i>	
A STATIC HAND GESTURE BASED SIGN LANGUAGE RECOGNITION SYSTEM USING CONVOLUTIONAL NEURAL NETWORKS.....	1339
<i>Diksha Hatibaruah, Anjan Kumar Talukdar, Kandarpa Kumar Sarma</i>	
PI AND FUZZY LOGIC CONTROL OF SINGLE PHASE GRID CONNECTED INVERTER SERVING TWO PV PANELS.....	1345
<i>Dhruv Bhatia, Alka Singh, Ankita Arora</i>	
OPTIMAL LOCATION OF AC-HVDC TIE-LINE IN A MULTI-AREA LFC SYSTEM INCORPORATED WITH RENEWABLE AND ESD CONSIDERING CA OPTIMIZED PI-TID CASCADE CONTROLLER	1351
<i>Naladi Ram Babu, Lalit Chandra Saikia, Sanjeev Kumar Bhagat, Satish Kumar Ramoji, Biswanath Dekaraja, Manoja Kumar Behera</i>	

REALIZATION OF MACH-ZEHNDER MODULATOR WITH ULTRAHIGH EXTINCTION RATIO AT MINIMUM TRANSMISSION BIAS POINT	1357
<i>Aasif Bashir Dar, Faroze Ahmad</i>	
TCAD SIMULATION OF P-CHANNEL SOI-BASED DIELECTRIC-MODULATED FIELD-EFFECT TRANSISTOR BIOCHEMICAL SENSOR	1362
<i>Akshit Deep Singh, Soumendu Sinha</i>	
SENSITIVITY ANALYSIS OF ACOUSTIC ATTENUATION WITH ENVIRONMENTAL PARAMETERS FOR AIR TO GROUND PROPAGATION OF ACOUSTIC SIGNAL	1368
<i>Sunil Kumar Sinha, Arun Kumar, Rajendar Bahl</i>	
INTEGRATED ACCESS BACKHAUL NODE SUPPORTING 5G AND IOT ACCESS	1373
<i>Jayanta Kumar Ray, Samrendra Nath Sur, Rabindranath Bera, Pallabi Biswas, Sanjib Sil, Quazi Mohammad Alfred</i>	
FPGA BASED IMAGE READOUT FROM CAMERA USING ETHERNET PROTOCOL AND PYTHON.....	1381
<i>Akshay Augustine, P Anand, K Devadershan, K Kiran, P Kiran, Bhuvan Balan</i>	
A DUAL APPROACH FOR CREDIT CARD FRAUD DETECTION USING NEURAL NETWORK AND DATA MINING TECHNIQUES.....	1388
<i>Aanchal Sahu, GM Harshvardhan, Mahendra Kumar Gourisaria</i>	
TEAM: TIME AND ENERGY AWARE APPLICATION PARTITIONING AND RESOURCE ALLOCATION STRATEGY ON MEC PLATFORM.....	1395
<i>Vishal Deka, Charu Guleria, Manojit Ghose</i>	
PROMOTER IDENTIFICATION IN DNA SEQUENCES USING MACHINE LEARNING.....	1402
<i>Zuber Khan, Rajdeep, Ravi Kumar Arya, Tirupathiraju Kanumuri</i>	
POWER PROFILING AND ANALYSIS OF CODE OBFUSCATION FOR EMBEDDED DEVICES	1406
<i>Anjali J Suresh, Sriram Sankaran</i>	
DRIVER FATIGUE DETECTION.....	1412
<i>Impana Girish, Ajay Kumar, Atul Kumar, Anuradha M</i>	
CONCEPTUAL FRAMEWORK FOR ACCIDENT PRONE HOTSPOT IDENTIFICATION AND REMOVAL USING HISTORICAL DATA ANALYTICS.....	1418
<i>Nidhi Singh, Manoj Kumar</i>	
SUSPICIOUS ACTIVITY DETECTION FROM VIDEOS USING YOLOV3	1425
<i>Nipunjita Bordoloi, Anjan Kumar Talukdar, Kandarpa Kumar Sarma</i>	
A TEMPORAL CONVOLUTION NETWORK APPROACH TO STATE-OF-CHARGE ESTIMATION IN LI-ION BATTERIES	1430
<i>Aniruddh Herle, Janamejaya Channegowda, Dinakar Prabhu</i>	
REAL-TIME HUMAN DETECTION WITH THERMAL CAMERA FEED USING YOLOV3.....	1436
<i>Rumi Kalita, Anjan Kumar Talukdar, Kandarpa Kumar Sarma</i>	
CAPACITY INSIGHTS FOR SHARED-RF AND ON-DEMAND SYSTEMS	1441
<i>Soyinka Nath, Shree Prakash Singh, Sujata Sengar</i>	

A COMPARATIVE STUDY BETWEEN A CLASSICAL AND OPTIMAL CONTROLLER FOR A QUADROTOR.....	1448
<i>Prathamesh Saraf, Manan Gupta, Alivelu Manga Parimi</i>	
PEARSON CORRELATION COEFFICIENT BASED ATTRIBUTE WEIGHTED K-NN FOR AIR POLLUTION PREDICTION	1454
<i>Ankita Jain, Rajya Lakshmi Lella</i>	
OPTIMAL PMU PLACEMENT FOR SMART GRID: A TECHNICAL CASE STUDY	1462
<i>Marwan Ahmed Abdullah Sufyan, Mohd Zuhaib, Mohd Rihan</i>	
EFFECT OF TRANSFORMER OIL RECONDITIONING ON OIL PROPERTIES AND DISSOLVED GASES	1469
<i>Nirjhar Basu, Divakar B Gupta, Pandharinath R Jundhare, Tapas Kumar Dey, Kvsn Murthy, Nivas S Gulavani, Manoj Joshi</i>	
PERFORMANCE ANALYSIS OF HYBRID NOMA-OMA SCHEME FOR 5G NR SYSTEM	1474
<i>Rahul Makkar, Divyang Rawal, Nikhil Sharma, Vijay Kumar Chakka</i>	
FACIAL EMOTION BASED REVIEW ACCUMULATION SYSTEM.....	1480
<i>Himanshu Sharma, Devang Sharma, Krutarth Bhatt, Bhavya Shah</i>	
STUDY OF SUB-NYQUIST SAMPLING TECHNIQUES FOR MULTI-BAND SIGNALS	1486
<i>Umesh Sharma, Monika Agrawal</i>	
HOME INVERTER BASED COORDINATED AND DISTRIBUTED FREQUENCY CONTROL IN A SMART HYBRID POWER SYSTEM	1491
<i>Renuka Loka, Alivelu Manga Parimi</i>	
ON THE EFFICIENCY OPTIMIZATION OF VFD DRIVES IN HVAC SYSTEMS	1497
<i>Nikhil Krishna Bajjuri, Amit Kumar Jain</i>	
AUTOMATIC THREAT DETECTION IN SINGLE, STEREO (TWO) AND MULTI VIEW X-RAY IMAGES	1503
<i>Abhina Tuli, Rohi Bohra, Tanma Moghe, Niti Chaturvedi, Doming Mery, Dhiraj</i>	
CNN-BPSO APPROACH TO SELECT OPTIMAL VALUES OF CNN PARAMETERS FOR SOFTWARE REQUIREMENTS CLASSIFICATION.....	1510
<i>Manjubala Bisi, Kirti Keskar</i>	
DESIGN OF HIGH ACCURACY, POWER EFFICIENT AND AREA EFFICIENT 16X16 APPROXIMATE MULTIPLIER	1516
<i>A Vignesh, Rasika Dhavse</i>	
HIGH IMPEDANCE FAULT DETECTION IN PRIMARY DISTRIBUTION NETWORK EMPLOYING VOLTAGE AND CURRENT SEQUENCE COMPONENTS	1522
<i>Prashantkumar V. Dhawas, Prashant P. Bedekar, Praful V. Nandankar</i>	
IMPACT OF TARGET TRACKING MODULE IN GPS SPOOFER DESIGN FOR STEALTHY GPS SPOOFING	1529
<i>Pardhasaradhi Bethi, Srihari Pathipati, P Aparna</i>	
INTEGRATION OF DISTRIBUTED GENERATION TO MICROGRID WITH VIRTUAL INERTIA.....	1535
<i>Gurugubelli Vikash, Arnab Ghosh, Shubhobrata Rudra</i>	

THERMAL ANALYSIS OF PEM FUEL CELL AND LITHIUM ION BATTERY PACK IN CONFINED SPACE	1541
<i>Ashita Victor, Abhay Shankar Jha, Janamejaya Channegowda, Sumukh Surya, Kali Vara Prasad Naraharisetti</i>	
EXACT FORMULAS FOR FAULT AWARE CORE MAPPING ON NOC RELIABILITY	1547
<i>Aruru Sai Kumar, T. V. K. Hanumantha Rao, B. Naresh Kumar Reddy</i>	
MITIGATION OF SPEED DEVIATION OF DC MOTOR USING MEMRISTIC MODEL PREDICTIVE CONTROLLER	1552
<i>Anirban Sengupta, Rijhi Dey, Chitragada Roy</i>	
STUDY OF GALLIUM ARSENIDE BASED PERFECT METAMATERIAL ABSORBER IN THE BROADBAND REGION	1557
<i>Raj Kumar, Bipin K Singh, Praveen C Pandey</i>	
CHARACTERIZATION OF MEDITATION EEG BASED ON CONSISTENCY OF COVARIANCE MATRICES OVER TIME	1561
<i>Ramakrishnan Angarai Ganesan, G Pradeep Kumar, Kanishka Sharma</i>	
DEEP ANALYSIS ON FISHERIES CLASSIFICATION	1567
<i>Sanchita Khare, Jai Kumar Dewani, Loveleen Amar, Nenavath Srinivas Naik</i>	
VOLTAGE AND FREQUENCY CONTROL FOR DG INVERTER IN LOW VOLTAGE ISLANDED MICROGRID WITH IMPROVED VIRTUAL IMPEDANCE DROOP CONTROL SCHEME.....	1573
<i>Manoja Kumar Behera, Lalit Chandra Saikia, Satish Kumar Ramoji, Biswanath Dekaraja, Sanjeev Kumar Bhagat, Naladi Ram Babu</i>	
AN 8 BIT BINARY WEIGHTED CMOS CURRENT STEERING DAC USING UMC 180NM TECHNOLOGY	1580
<i>Sujata Kotabagi, Siddalingesh Ravikanth Sibandi, Raghavendra Nayak, Arvind Patil</i>	
MODIFIED PARTICLE SWARM OPTIMIZATION BASED TECHNIQUE FOR POWER FLOW COMPUTATION	1585
<i>Poulami Ghosh, Subrata Biswas, Prithwiraj Purkait</i>	
CAPACITY ANALYSIS OF THE HYBRID FSO/RF SYSTEM UNDER THE EFFECT OF FADING IN FEEDBACK PATH	1590
<i>Shreesh Kumar Shrivastava, Shree Prakash Singh, Sujata Sengar</i>	
ANALYSIS OF POWER SYSTEM SECURITY USING BIG DATA AND MACHINE LEARNING TECHNIQUES.....	1597
<i>Ravi V Angadi, Suresh Babu Daram, P. S Venkataramu</i>	
CONTINGENCY RANKING THROUGH BIG DATA ANALYTICS WITH GIPFC IN POWER SYSTEM UNDER N-1CONDITION	1605
<i>Ravi V Angadi, Suresh Babu Daram, Durgam Pravallika, P. S Venkataramu</i>	
DESIGN AND DEVELOPMENT OF AR-PLASYS: AUGMENTED REALITY BASED PLANT MONITORING SYSTEM.....	1611
<i>Honey Shah, Jyotika Gurnani, Sachin Gajjar</i>	
PERFORMANCE COMPARISON OF SAMPLED HYSTERESIS AND PREDICTIVE CONTROL METHODS FOR TRACKING CURRENT IN APF.....	1616
<i>Sandeep Ojha, Rajesh Gupta</i>	

PERFORMANCE ANALYSIS OF 6-PULSE 2-LEVEL HVDC-VSC USING PARTICLE SWARM OPTIMIZATION (PSO) BASED CONTROLLER IN D-Q REFERENCE FRAME UNDER AC FAULT CONDITIONS.....	1622
<i>Sushree Sangita Patnaik, Aradhana Khillo, Suru Naresh</i>	
REAL-TIME BIOMETRIC VERIFICATION AND MANAGEMENT SYSTEM USING FACE EMBEDDINGS.....	1628
<i>Ankur Sikarwar, Himanchal Chandra, Indradeo Ram</i>	
GEO TRACKING OF WASTE, TRIGGERING ALERTS AND MAPPING AREAS WITH HIGH WASTE INDEX.....	1632
<i>Deep Pujara, Pratyusha Patel, Sachin Gajjar</i>	
PERFORMANCE ANALYSIS OF LAMBDA-ITERATION METHOD FOR SOLVING ELD PROBLEM IN CLOUD BASED GENERATION SCHEDULING DATA MANAGEMENT SYSTEM.....	1637
<i>Subhra J. Sarkar, Palash K. Kundu, Gautam Sarkar</i>	
FREQUENCY MULTIPLIER USING PHASE-LOCKED LOOP.....	1642
<i>Harish G Shettar, Sujata Kotabagi, Nagaratna Shanbhag, Sachin Naik, Rahul Bagali, Shreyas Nandavar</i>	
OPTIMAL UNIFIED FREQUENCY AND VOLTAGE CONTROL OF MULTI-AREA MULTI-SOURCE POWER SYSTEM USING THE CASCADED PIDN-TIDF CONTROLLER.....	1647
<i>Satish Kumar Ramoji, Lalit Chandra Saikia, Biswanth Dekaraja, Manoja Kumar Behera, Sanjeev Kumar Bhagat, Naladi Ram Babu</i>	
PERFORMANCE ANALYSIS OF 6-PULSE HVDC-VSC USING DEADBEAT CONTROLLER IN D-Q REFERENCE FRAME UNDER AC FAULT CONDITIONS.....	1653
<i>Aradhana Khillo, Sushree Sangita Patnaik, Suru Naresh</i>	
IMPLEMENTATION OF BIOIMPEDANCE DEMODULATOR FOR GLOTTOGRAPHY.....	1659
<i>Harikrishna Singapuri, Aksh Patel, Anand Darji, Jignesh Sarvaiya</i>	
COORDINATED CONTROL OF VOLTAGE AND FREQUENCY IN A THREE-AREA MULTISOURCE SYSTEM INTEGRATED WITH SMES USING FOI-FOPDF CONTROLLER.....	1665
<i>Biswanath Dekaraja, Lalit Chandra Saikia, Satish Kumar Ramoji, Naladi Ram Babu, Sanjeev Kumar Bhagat, Manoja Kumar Behera</i>	
OBJECT DETECTION USING THERMAL IMAGING.....	1672
<i>Rohan Ippalapally, Sri Harsha Mudumba, Meghana Adkay, Nandi Vardhan H. R.</i>	
MODIFIED ELECTRIC SPRING MODULE BASED VOLTAGE AND FREQUENCY CONTROL FOR POWER FLOW MECHANISM.....	1678
<i>Saptarshi Ray, Tridibesh Nag, Subrata Biswas, Debashis Chatterjee</i>	
A LABORATORY SETUP FOR SYNCHROPHASOR APPLICATIONS.....	1684
<i>Annu Ahlawat, Anirudh Goyal, Saurabh Kumar Mishra, S T Nagarajan</i>	
FRUITVEGCNN: POWER- AND MEMORY-EFFICIENT CLASSIFICATION OF FRUITS & VEGETABLES USING CNN IN MOBILE MPSOC.....	1690
<i>Somdip Dey, Suman Saha, Amit Singh, Klaus McDonald-Maier</i>	
SOUND EVENT SEPARATION AND CLASSIFICATION IN DOMESTIC ENVIRONMENT USING MEAN TEACHER.....	1697
<i>Rajat Sharma, Sourabh Tiwari, Rohit Singla, Saksham Goyal, Vinay Vasanth Patage, Rashmi T Shankarappa</i>	

AUTOMATIC DETECTION OF FAKE NEWS USING TEXTUAL ENTAILMENT RECOGNITION.....	1703
<i>Purnendu Kumar Rath, Rohini Basak</i>	
DRIVER DROWSINESS DETECTION USING FACIAL PARAMETERS AND RNNs WITH LSTM.....	1709
<i>Vishnu Yarlagadda, Shashidhar G. Koolagudi, M V Manoj Kumar, Swapna Donepudi</i>	
GREEN COMPUTING IN HETEROGENEOUS INTERNET OF THINGS: OPTIMIZING ENERGY ALLOCATION USING SARSA-BASED REINFORCEMENT LEARNING	1716
<i>Ankita Jaiswal, Sushil Kumar, Upasana Dohare</i>	
EFFICIENT SINK MOBILITY BASED ROUTING PROTOCOL FOR HETEROGENEOUS WIRELESS SENSOR NETWORK WITH MULTIPLE MOBILE SINKS.....	1722
<i>Preeti, Vinod Kumar Jain</i>	
ISLANDED OPERATION OF PV SYSTEM DURING GRID OUTAGE	1728
<i>Gaurav Modi, Bhim Singh</i>	
ENERGY EFFICIENT APPROACH TO ESTIMATE LIVE LOCATION USING SMARTPHONE'S BAROMETER.....	1734
<i>Anirudh Srinivasa Raghavan, Hardik Gourisaria, Pranav Bhatt, Sameer Raju Dhole</i>	
PERFORMANCE EVALUATION OF AFFINE PRECODING AND DECODING BASED CDMA-FBMC/OQAM SYSTEMS	1740
<i>Radhashyam Patra, Arunanshu Mahapatro, Amaresh Kumar Sahu, Naresh Chandra Naik</i>	
WALL CRACK DETECTION USING TRANSFER LEARNING-BASED CNN MODELS.....	1746
<i>Sayyed Bashar Ali, Reshul Wate, Sameer Kujur, Anurag Singh, Santosh Kumar</i>	
DATA DRIVEN MULTIVARIATE AIR QUALITY FORECASTING USING DYNAMIC FINE TUNING AUTOENCODER LAYER.....	1753
<i>K. Krishna Rani Samal, Korra Sathya Babu, Ankit Kumar Panda, Santos Kumar Das</i>	
SCHEDULING AND ROUTING OF MOBILE CHARGING STATIONS TO CHARGE ELECTRIC VEHICLES IN A SMART-CITY	1759
<i>Ubaid Qureshi, Arnob Ghosh, Bijaya Ketan Panigrahi</i>	
UNIFIED TEST FRAMEWORK FOR VOICE ENABLED DEVICES.....	1766
<i>Chittaranjan Pradhan, Sunil A Kinange, Jayavel Kannappan</i>	
AN EFFICIENT BINARIZED NEURAL NETWORK FOR RECOGNIZING TWO HANDS INDIAN SIGN LANGUAGE GESTURES IN REAL-TIME ENVIRONMENT.....	1772
<i>Mohita Jaiswal, Vaidehi Sharma, Abhishek Sharma, Sandeep Saini, Raghuvir Tomar</i>	
A LOW POWER LOW RIPPLE SCHMITT TRIGGER BASED PWM BOOST CONVERTER FOR ENERGY HARVESTING APPLICATIONS	1778
<i>Salma Khan, Syed Azeemuddin, Mohammed Arifuddin Sohel</i>	
DAY AHEAD SOLAR IRRADIANCE FORECASTING USING MARKOV CHAIN MODEL	1782
<i>Shreyanshu Garg, Ashvi Agrawal, Shubham Goyal, Kusum Verma</i>	
SPECTRAL CHARACTERISTICS OF CASCADED UNIFORM FBGS OF VARYING LENGTHS.....	1787
<i>V Naga Bhaskar Chaluvadi, Prasant Kumar Pattnaik</i>	

A GENERALIZED APPROACH FOR UTILIZATION OF GAAS-ALGAAS BASED RING RESONATOR IN REALIZATION OF BOOLEAN EXPRESSION	1791
<i>Vartika Rao, Sanjoy Mandal</i>	
IMPACT OF REVERSE GATE OXIDE STACKING ON GATE ALL AROUND TUNNEL FET FOR HIGH FREQUENCY ANALOG AND RF APPLICATIONS	1796
<i>Amit Das, Binod Kumar Kanaujia, Vandana Nath, Sonam Rewari, R. S. Gupta</i>	
PLACEMENT OF IPFC FOR POWER LOSS REDUCTION IN TRANSMISSION LINES USING FIREFLY ALGORITHM.....	1802
<i>Vishnu Charan Thippana, Aivelu Manga Parimi, Chandram Karri</i>	
CELL OPTIMIZATION AND REALIZATION OF MGDI AND QCA BASED COMBINATIONAL LOGIC CIRCUITS FOR NANOTECHNOLOGY APPLICATIONS.....	1808
<i>Divya Tripathi, Sana, Subodh Wairya</i>	
TWO-SWITCH HIGH GAIN BOOST CONVERTER.....	1816
<i>Mummadi Veerachary</i>	
COVID-19 FACE MASK DETECTION USING TENSORFLOW, KERAS AND OPENCV.....	1822
<i>Arjya Das, Mohammad Wasif Ansari, Rohini Basak</i>	
POWER SYSTEM INERTIA ESTIMATION UNDER LIMITED FREQUENCY MONITORING NODES.....	1827
<i>Pijush Kanti Dhara, Zakir Hussain Rather</i>	
EVALUATION OF AUTOENCODER FOR CBIR SYSTEM IN DEEP LEARNING	1833
<i>Aashay Pawar</i>	
AN ADAPTIVE WAVELET APPROACH FOR DETECTION OF BREATHINESS IN SPEECH.....	1837
<i>Sibasis Sahoo, Samarendra Dandapat</i>	
ENCODER AND ADAPTIVE DECODER FOR A (15,6,2) DEC-TED BCH CODE.....	1844
<i>Pallavi Rao, Pranjali Babshet, Ramya Arun Babu, M S Sunita</i>	
DESIGN AND ANALYSIS OF A SYSTEM TO READ BRAILLE WITH REMOTE CLOUD ARCHITECTURE.....	1850
<i>Rao Krishna Virinchi, Paulson K Antony, Shreyaa Saravanan, V Dhakshain Balaji, Vaishnavi Suresh Krishnan, Edith Susanna Andrews, Chris Joy Kokkat, S Melvin Noel, Tk Sreejeeth Vijay, Harshit Goyal, C. Vijayalakshmi</i>	
A COMPARATIVE EVALUATION OF THE DEEP LEARNING ALGORITHMS FOR POTHOLE DETECTION	1856
<i>Roopak Rastogi, Uttam Kumar, Archit Kashyap, Shubham Jindal, Saurabh Pahwa</i>	
AN ENHANCED STABILITY CRITERION FOR STRICT PASSIVE ANALYSIS OF DIGITAL FILTERS	1862
<i>Mounika Pulikonda, Priyanka Kokil</i>	
A NOVEL DECENTRALIZED VIRTUAL IMPEDANCE DROOP INTEGRATING PHASE LOCKED LOOP (PLL) CONTROL SCHEME FOR PARALLEL DG INVERTER IN AN ISLANDED MICROGRID	1867
<i>Manoja Kumar Behera, Ravi Raj, Lalit Chandra Saikia</i>	
WATKINS-JOHNSON CONVERTER BASED PV WATER PUMPING SYSTEM.....	1873
<i>Anuradha Tomar</i>	

PERFORMANCE EVOLUTION OF SMALL SIGNAL MODEL BASED PEAK CURRENT MODE CONTROLLER FOR OFF-BOARD FAST CHARGING DC-DC CONVERTER	1878
<i>Balakrishna Nallamothu, B. Santhana Krishnan, Ravindra Janga</i>	
DRIVER DROWSINESS DETECTION USING KNOWLEDGE DISTILLATION TECHNIQUE FOR REAL TIME SCENARIOS	1884
<i>Hitesh Ahuja, Sumeet Saurav, Sahaj Srivastava, Chandra Shekhar</i>	
DESIGN & REAL-TIME FIELD IMPLEMENTATION OF MICRO-INVERTER FOR RURAL APPLICATIONS.....	1889
<i>Anuradha Tomar, Phuong H. Nguyen, Sukumar Mishra</i>	
COMPARATIVE ANALYSIS OF THE CONTROL OF LLC RESONANT CONVERTER USING PROPORTIONAL-INTEGRAL AND MACHINE LEARNING BASED TECHNIQUES	1895
<i>Priyesh Pandey, Sivaramrao Bodda, Prashant Agnihotri</i>	
WIND-PV-BATTERY BASED MICROGRID WITH DISCRETE THREE-PHASE FREQUENCY-LOCKED LOOP CONTROL	1901
<i>Sudip Bhattacharyya, Bhim Singh</i>	
AN EFFICIENT IOT MODEL FOR ON-DEMAND PARTICULATE MATTER CONTROL SYSTEM IN COAL MINING CITIES	1908
<i>Kumar Saurabh, Vikash, Lalita Mishra, Shirshu Varma</i>	
A BIDIRECTIONAL ONBOARD CHARGING SYSTEM FOR E-RICKSHAW USING INTERLEAVED SEPIC CONVERTER.....	1915
<i>Utsav Sharma, Bhim Singh</i>	
LINK PREDICTION USING SEMI-AUTOMATED ONTOLOGY AND KNOWLEDGE GRAPH IN MEDICAL SPHERE.....	1920
<i>Sandeep Varma, Shivam Shivam, Rishu Jamaiyar, Anukriti Anukriti, Soumya Kashyap, Anurag Sarkar</i>	
STABILITY ENHANCEMENT OF SINGLE GENERATOR CONNECTED TO GRID BY LINEAR QUADRATIC REGULATOR.....	1925
<i>Ganesh P. Prajapat, Atul Awasthi</i>	
PERFORMANCE ANALYSIS OF CUBATURE RULE BASED KALMAN FILTER FOR TARGET TRACKING.....	1931
<i>Sumanta Kumar Nanda, Vimal Bhatia, Abhinoy Kumar Singh</i>	
IMPLEMENTATION OF FACE RECOGNITION ALGORITHM ON A MOBILE SINGLE BOARD COMPUTER FOR IOT APPLICATIONS.....	1937
<i>Swarnendu Guha, Amlan Chakrabarti, Sujoy Biswas, Soumen Banerjee</i>	
SIMULATION STUDY BASED PERFORMANCE PROJECTION OF NEGATIVE CAPACITANCE FET	1942
<i>Shalini Chaudhary, Chitrakant Sahu, Menka</i>	
DEVELOPMENT OF DEEP SEA UNMANNED UNDERWATER ROBOTS: A SURVEY	1947
<i>M. P. R. Prasad, Pentakota Sai Kiran</i>	
SELF ADAPTIVE PARTICLE SWARM OPTIMIZATION BASED GLOBAL MAXIMUM POINT TRACKING ALGORITHM FOR PHOTOVOLTAIC SYSTEMS.....	1954
<i>Devanand Kumar, Harish Kumar Varma Gadiraju, Venugopal Reddy</i>	

AN IMPROVED ANGULAR STATOR FLUX FREQUENCY COMPUTATION METHOD FOR ENHANCED MPPT OPERATION OF DFIG UNDER UNBALANCED GRID VOLTAGE	1960
<i>Mohananiitha Asha Rani, Manickam Chakkarapani, Chilakapati Nagamani, Saravana Ilango Ganesan</i>	
SMALL SIGNAL MODELLING AND PERFORMANCE PREDICTION OF DAB WITH DPS CONTROL	1967
<i>Saran Chaurasiya, Bhim Singh</i>	
EYES SPEAK OUT MIND: DEEP MODELS FOR GAZE-BASED ANALYSIS OF BILINGUAL AND MONOLINGUAL READING.....	1973
<i>Arka Prava Roy, Soumen Kumar Koley, Utpal Garain</i>	
STUDY ON COMPARISON OF POWER LOSSES BETWEEN UPQC AND UPQC-DG.....	1980
<i>Sisir Kumar Yadav, Ashish Patel, Hitesh Datt Mathur</i>	
DESIGN OF FRACTIONAL ORDER CONTROLLER FOR WOOD-BERRY DISTILLATION COLUMN.....	1986
<i>Rishu Kumar, Satyam Anand, Ashish Khulbey, Amar Nath Jha</i>	
PERFORMANCE ANALYSIS OF SOTA TRANSFORMER NETWORK IN NUMERICAL EXPRESSION CALCULATION.....	1992
<i>Isha Ganguli, Rajat Subhra Bhowmick, Jaya Sil</i>	
A MACHINE LEARNING BASED BIKE RECOMMENDATION SYSTEM CATERING TO USER'S TRAVEL NEEDS.....	1998
<i>Ananta Kumar Das, Amogh Manoj Joshi, Subhasish Dhal</i>	
REAL TIME VEIN DETECTION AND MAPPING USING NEAR INFRA-RED LIGHTS	2004
<i>Sumedh Naik, Rashmi Phadnis, Meghna Prabhu</i>	
VERTICAL GAN SPLIT GATE TRENCH MOSFET WITH IMPROVED HIGH FREQUENCY FOM	2010
<i>Nilesh Kumar Jaiswal, V. N. Ramakrishnan, Sukhendu Deb Roy</i>	
DISTRIBUTED INCREMENTAL STRATEGY FOR RADIO TOMOGRAPHIC IMAGING.....	2015
<i>Abhijit Mishra, Upendra Kumar Sahoo, Subrata Maiti</i>	
SMART LEARNING ENVIRONMENTS FRAMEWORK FOR EDUCATIONAL APPLICATIONS IN IOT ENABLED EDUCATIONAL ECOSYSTEMS: A REVIEW ON AI BASED GUI TOOLS FOR IOT WEARABLES	2021
<i>Divanshi Priyadarshni Wangoo, S. R. N Reddy</i>	
VOTING CLASSIFICATION METHOD FOR VEHICLE NUMBER PLATE DETECTION	2029
<i>Shubham Anand, S. Indu</i>	
OCPD BASED ELECTRIC VEHICLE SUPPLY EQUIPMENT AND ITS USER INTERFACE FOR AC CHARGING IN INDIAN SCENARIO.....	2035
<i>Sapna Ravindran, S Amal, Y V Bhavya, V Chandrasekar</i>	
METHODOLOGY TO ESTIMATE ROBUSTNESS OF LAYOUTS OF RADIATION HARDENED FLIP-FLOPS TO HIGH ENERGY RADIATIONS	2041
<i>Kamakshi Pandey, Anuj Grover, Abhishek Jain</i>	
COVID-19 DATA VISUALIZATION AND DATA ANALYTICS WITH A SMART STANDALONE MOBILE APPLICATION	2047
<i>Abhijit Poddar, Monali Poddar</i>	

ON-LINE PARAMETER IDENTIFICATION AND STATE OF CHARGE ESTIMATION OF LI-ION BATTERY	2053
<i>Arpita Mondal, Aurobinda Routray, Sreeraj Puravankara, Debanjana Pahari</i>	
STUDY AND ANALYSIS OF UNIQUE HEALTH IDENTIFIERS AND APPLICABILITY OF AADHAAR AS A UNIQUE HEALTH IDENTIFIER	2060
<i>Abhijat Chaturvedi, A S Cheema, P K Srivastava, Astha Rai, Siddharth Srivastava</i>	
DESIGN OF SLOTTED RMPA USING DEFECTED GROUND STRUCTURE FOR MOBILE APPLICATIONS.....	2065
<i>Preet Kaur</i>	
INVESTIGATION OF DUAL-MATERIAL DOUBLE GATE JUNCTIONLESS ACCUMULATION-MODE CYLINDRICAL GATE ALL AROUND (DMDG-JLAM-CGAA) MOSFET WITH HIGH-K GATE STACK FOR LOW POWER DIGITAL APPLICATIONS	2070
<i>Sumedha Gupta, Neeta Pandey, R S Gupta</i>	
GNSS INTENTIONAL INTERFERENCE MITIGATION VIA AVERAGE KF INNOVATION AND PSEUDO TRACK UPDATION	2074
<i>Pardhasaradhi Bethi, Srihari Pathipati, P Aparna</i>	
TWITTER SENTIMENT ANALYSIS USING DEEP LEARNING MODELS.....	2079
<i>Arnab Roy, Muneendra Ojha</i>	
ADAPTIVE NEURO FUZZY INFERENCE SYSTEM FOR MPPT IN STANDALONE SOLAR PHOTOVOLTAIC SYSTEM.....	2085
<i>Ishita Kapur, Dhruv Jain, Arihant Jain, Rachana Garg</i>	
FOREIGN ACCENT RECOGNITION WITH SOUTH INDIAN SPOKEN ENGLISH.....	2091
<i>Guntur Radha Krishna, Ramakrishnan Krishnan, Vinay Kumar Mittal</i>	
ADVANCEMENT IN RADIAL POWER DISTRIBUTION NETWORK USING HIGH IMPEDANCE FAULT RELAY	2096
<i>Prashantkumar V. Dhawas, Prashant P. Bedekar, Praful V. Nandankar</i>	
POWER GATED ECRL ADIABATIC LOGIC BASED OPTIMIZED TWO-INPUT MULTIPLEXER	2102
<i>Aarushi Mann, Naman Malhotra, Abhishek Wadhwa, Neeta Pandey</i>	
HOME AUTOMATION USING TV WHITESPACE TECHNOLOGY	2108
<i>Abhinav Jain, Archit Goswami, Prerna Gaur</i>	
STUDIES ON PARALINGUISTIC SPEECH SOUNDS	2112
<i>Devi Bhavani Kadali, Vinay Kumar Mittal</i>	
ESSENCE KERNEL IN OVERCOMING CHALLENGES OF AGILE SOFTWARE DEVELOPMENT	2118
<i>Debasish Jana, Pinakpani Pal</i>	
EMOTIONAL ANALYSIS AND TRENDS IN MUSIC DEVELOPMENT.....	2126
<i>Kavyansh Chourasia, Aishwarya Maurya, Akashdeep, Nenavath Srinivas Naik</i>	
CARDIOVASCULAR DISEASE (CVD) PREDICTION USING MACHINE LEARNING ALGORITHMS.....	2132
<i>Ibashisha A. Marbaniang, Nurul Amin Choudhury, Soumen Moulik</i>	

DESIGN AND BENCHMARK OF ISO-STABLE HIGH DENSITY 4T SRAM CELLS FOR 64MB ARRAYS IN 65NM LSTP	2138
<i>Rahul Kumar, Shubham Baunthiyal, Rupali Tewari, Dudala Venkata Siva Ganesh, Abhishek Thiplapura Chandre Gowda, Riya Yadav, Anuj Grover</i>	
HEPATOCELLULAR CARCINOMA (HCC) LIVER CANCER PREDICTION USING MACHINE LEARNING ALGORITHMS	2145
<i>Sanapala Rajesh, Nurul Amin Choudhury, Soumen Moulik</i>	
AN ANALYSIS OF REGULARIZATION METHODS IN DEEP NEURAL NETWORKS	2150
<i>Akshay Badola, Vineet Padmanabhan Nair, Rajendra Prasad Lal</i>	
TRACKING CONTROL OF A MOBILE MANIPULATOR WITH EXTERNAL TORQUE DISTURBANCES USING COMPUTED TORQUE CONTROL	2156
<i>Shyju Susan Mathew, V. R. Jisha</i>	
COMPARATIVE ANALYSIS OF IM/BLDC/PMSM DRIVES FOR ELECTRIC VEHICLE TRACTION APPLICATIONS USING ANN-BASED FOC	2163
<i>Sheshadri Shekhar Rauth, Banshidhari Samanta</i>	
A SYSTEM FOR AUTOMATIC REGIONAL ACCENT CLASSIFICATION	2171
<i>Guntur Radha Krishna, Ramakrishnan Krishnan, Vinay Kumar Mittal</i>	
DEPENDENCE OF NUMBER OF INPUTS AND WEIGHTS DURING TRAINING OF FFANN.....	2176
<i>Veenu Veenu, Mohinder Pal Singh Bhatia</i>	
WEARABLE SYSTEM FOR REAL-TIME REMOTE MONITORING OF RESPIRATORY RATE DURING COVID-19 USING FIBER BRAGG GRATING	2181
<i>Arjita Das, Shikha Ambastha, Soumen Sen, Sudip Samanta</i>	
BUILDING FOOTPRINT EXTRACTION FROM AERIAL IMAGES USING MULTIREOLUTION ANALYSIS BASED TRANSFER LEARNING	2185
<i>Pranjal Ranjan, Sarvesh Patil, Rizwan Ahmed Ansari</i>	
LOW-PROFILE, COMPACT, TWO PORT MIMO ANTENNA CONFORMING WI-FI-5/WI-FI-6/V2X/DSRC/INSAT-C FOR WIRELESS INDUSTRIAL APPLICATIONS.....	2191
<i>Jayshri Kulkarni, Chow-Yen-Desmond Sim, Vivek Deshpande</i>	
A DECISION FRAMEWORK REFERENCE FOR ISFET SENSOR-BASED ELECTRONIC SYSTEMS DESIGN FOR AGRICULTURE INDUSTRY APPLICATIONS	2196
<i>George Archbold Taylor, Carlos Parra, Henry Carrillo, Abdul Mouazen</i>	
A UNITY POWER FACTOR RECTIFIER BASED DYNAMIC VOLTAGE RESTORER FOR MICROGRID APPLICATIONS	2202
<i>Khan Md Shafquat Ullah, Muhammad M. Roomi, Mohd Tariq, Bin Zhao</i>	
DETERMINING REACTIVE POWER LEVELS TO IMPROVE BUS VOLTAGES USING PSO.....	2208
<i>Jyothir Latha Aakula, Aayushi Khanduri, Akhil Sharma</i>	
DESIGN OF ROBUST DEPTH CONTROLLER FOR AN AUV WITH DISTURBANCE	2215
<i>Ravishankar P. Desai, Narayan S. Manjarekar</i>	
OPTIMAL REACTIVE POWER SIZING IN DISTRIBUTION SYSTEMS TO OPTIMIZE THE VOLTAGE PROFILE AND POWER LOSS USING FBS BASED ESA ALGORITHM	2222
<i>Joseph Sanam, Mallavarapu Lakshmi Sowjanya, Doppalapudi Pujitha, Sangula Chaithanya, B Mani Deepika</i>	

DETECTION AND SPREAD PREDICTION OF COVID-19 FROM CHEST X-RAY IMAGES USING CONVOLUTIONAL NEURAL NETWORK-GAUSSIAN MIXTURE MODEL	2228
<i>Yasin Khan, Pritam Khan, Sudhir Kumar, Jawar Singh, Rajesh M. Hegde</i>	
DRISHYAM: REAL-TIME TEXT TO BRAILLE CONVERSION AND REALISATION.....	2234
<i>Himanshu Gautam, Prerna Gaur</i>	
NEW WIDEBAND VERTICAL TETRASKELION-SHAPED DIELECTRIC RESONATOR ANTENNA.....	2241
<i>Pragati Patel, Yogesh Solunke</i>	
ANALYSIS OF LTE-A PCRF WITH AND WITHOUT DRA	2247
<i>Priyatosh Mandal</i>	
MULTI-LEVEL SPEAKER AUTHENTICATION: AN OVERVIEW AND IMPLEMENTATION.....	2253
<i>V Amrutha, K H Anagha, K Amshu Kamal, Balachandra Kumaraswamy</i>	
MACHINE LEARNING ASSISTED AUTOMATIC ANNOTATION OF ISOVOLUMIC MOVEMENT AND AORTIC VALVE CLOSURE USING SEISMOCARDIOGRAM SIGNALS	2259
<i>Deepak Rai, Hiren Kumar Thakkar, Deepak Singh, Harsha Vardhan Bathala</i>	
RELAXATION OSCILLATOR BASED DIGITAL INTERFACE CIRCUIT FOR RESISTIVE SENSORS	2265
<i>K Elangovan, Chandrika Sreekantan Anoop</i>	
AN ATTENTION BASED HIERARCHICAL LSTM MODEL FOR DETECTION OF MYOCARDIAL INFARCTION.....	2270
<i>Debasish Jyotishi, Samarendra Dandapat</i>	
STUDY OF OPTIMIZATION TECHNIQUES WITH PHYSICAL CONSTRAINTS TO OPTIMAL LFC FOR INTERRELATED POWER SYSTEM.....	2275
<i>Sunil Kumar, Rashmi Agarwal, Preeti Dahiya</i>	
NOVEL STANDBY LEAKAGE REDUCTION TECHNIQUE IN SRAM CELL WITH ENHANCED READ DATA STABILITY BY DYNAMICALLY VARYING THE CELL RATIO AND PULL-UP RATIO USING WORDLINE.....	2281
<i>Arjun Singh Yadav, Ankur Beohar, Sunanda Ambulker</i>	
COMPUTER VISION BASED ACCIDENT DETECTION FOR AUTONOMOUS VEHICLES	2287
<i>Dhananjai Chand, Savyasachi Gupta, Ilaiah Kavati</i>	
EVALUATION OF EMPIRICAL MODELS FOR THE ASSESSMENT OF GLOBAL SOLAR RADIATION IN BARAMATI REGION, MAHARASHTRA.....	2293
<i>Manisha, Ashruti Upadhyaya, Prerna Gaur</i>	
BATTERY POWERED LSB CONVERTER FED BLDC DRIVE SYSTEM FOR ELECTRIC VEHICLE APPLICATIONS.....	2299
<i>Ujjwal Kumar Kalla, Kusum Lata Agarwal, Nikhil Bhati, Sanjeev Singh, Shailendra Kumar, Bhim Singh</i>	
A NOVEL CURRENT DIFFERENTIAL RELAYING SCHEME FOR TRANSMISSION LINE PROTECTION.....	2305
<i>Ruchika Gupta, Shoyab Ali, Gaurav Kapoor</i>	
DEEP UNET NETWORK FOR THE INTIMA MEDIA THICKNESS MEASUREMENT IN ULTRASOUND IMAGES.....	2311
<i>Somasundaram Devaraj</i>	

Author Index