2020 International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET 2020)

Patna, India
10-11 July 2020

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CONFERENCE PROGRAMME

International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET -2020)

10-11, July 2020

DAY 1: 10-07-2020

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Time	Programme
09:30-10:30	**Inaugural Session**
10:30-11:10	**Plenary Talk 1– Prof. Sujit Kumar Biswas, Vice Chair Technical Activities, IEEE India Council.**
11:10–11:25	**Break**
11:25-14:15	<div align="center">**Day 1	Technical Session-1**</div> <div align="center" style="color:red">**Power System Control and Protection (Venue: Hall-1)**</div>
11:25-11:45	**Invited Talk – Prof. Kalyan Chatterjee, ISM Dhanbad**
11:45 – 12:00	Paper ID:10 Title: Short Term Load Forecasting: A Hybrid Approach Using Data Mining Methods...1 *Authors: Pallavi Borthakur and Barnali Goswami*
12:00 – 12:15	Paper ID:15 Title: Modelling and Simulation of Electrically Exploding Wire Opening Switch for Pulse Compression...7 *Authors: Pankaj Soni, Harsh Sharma, Radhesh Dewett, Sangeeta Gulati and H K Gupta*
12:15 – 12:30	Paper ID:18 Title: Effect of change in Environmental factors on coordination of overcurrent relays with DG Integration...12 *Authors: Jayant Mani Tripathi, Adhishree Srivastava and Dr. Sanjeev Kumar Mallik*
12:30 – 12:45	Paper ID:21 Title: S-Transform Assisted CUSUM Based Protection Strategy for Transmission Lines Possessing UPFC...18 *Authors: Sauvik Biswas, Vishal Parhi, Anudeep Bhatraj and Paresh Kumar Nayak*
12:45 – 13:00	Paper ID:26 Title: Performance Analysis of HVDC Lines Using Surge Arrester...24 *Authors: Shobha Agarwal, Rakesh Kumar Singh and Vimlesh Verma*
13:15 – 13:30	Paper ID:28 Title: Load Shifting Based DSM Strategy for Peak Demand Reduction in a Microgrid...29 *Authors: Jwala Prasad, Taksh Jain, Nishant Sinha and Sneha Rai*
13:30 – 13:45	Paper ID: 60 Title: Accommodative Energy Market for Battery Energy Storage and Grid Balancing...35 *Authors: Asif Nazar and Dr. Naqui Anwer*
13:45 – 14:00	Paper ID: 106 Title: Role of Demand Side Management in Automatic Load Frequency control...40 *Authors: Swetalina Bhuyan, Sunita Halder Nee Dey and Subrata Paul*

Power Electronics and Drives (Venue: Hall-2)

11:25-11:45   **Invited Talk – Dr. R. K. Behera, IIT Patna**

11:45 – 12:00   Paper ID:16
Title: Fault-Tolerant Converter Topology for Speed Control of Induction Motor Drive...46
Authors: Bhaskar S S Gupta Yelamarthi and Srinivasa Rao Sandepudi

12:00 – 12:15   Paper ID: 30
Title: Scalar Control of Induction Motor Drive with Inverter Fault-Tolerance Capability...52
Authors: Bhaskar S S Gupta Yelamarthi and Srinivasa Rao Sandepudi

12:15 – 12:30   Paper ID: 41
Title: Performance Analysis of Brushless Direct Current Motor Drive for Different types of
DC-DC Converter Using MPPT...57
Authors: Sweety Kumari and Ramesh Kumar

12:30 – 12:45   Paper ID: 44
Title: Torque Ripple reduction of BLDC motor introducing Delay in the Gate Firing
Circuits ...62
Authors: Susanta Ray and Ritam Chakraborty

12:45 – 13:00   Paper ID: 51
Title: A new generalized topology of multilevel inverter with reduce number of DC
sources and switches...67
Authors: Avinash Maurya and Ambarisha Mishra

13:00 – 13:15   Paper ID: 62
Title: Novel Reduced Switch 9-Level DC/AC Converter With Unequal Sources...73
Authors: Rajesh Kumar Mahto and Ambarisha Mishra

13:15 – 13:30   Paper ID: 64
Title: Mathematical Modelling, Simulation and Control of Five-Phase Induction Motor
Drives ...77
Authors: Sartaz Ahmad and Ambarisha Mishra

13:30 – 13:45   Paper ID: 67
Title: Effectiveness of Space Vector PWM in Three-Phase Inverter...81
Authors: Sweta Kumari and Rajib Kumar Mandal

13:45 – 14:00   Paper ID: 80
Title: Modelling of Hybrid Electric Vehicle Charger and Study the Simulation Results...86
Authors: Abhishek Gaurav and Anurag Gaur

14:00 – 14:15   Paper ID: 105
Title: Comparative Analysis of Different Converter Topologies for an SRM Drive
with Conventional and Vector Control Schemes...92
Authors: Yawer Abbas Khan, I.S. Twinkle, Shashi Kumar and Vimlesh Verma

14:15–14:30   **Break**

14:30–17:00

Day 1 | Technical Session-2

Power System Optimization (Venue: Hall-1)

14:30–14:50 **Invited Talk – Prof. P. Acharjee, NIT Durgapur**

14:50–15:05 Paper ID: 7
Title: Multi-point Optimal Placement of Shunt Capacitor in Radial Distribution
Network: A Comparison...98
Authors: Dibya Bharti

15:05–15:20 Paper ID: 61
Title: Optimal Non-convex Combined Heat and Power Economic Dispatch Using
Particle Swarm Optimization...104
*Authors: Siddharth Suhas Joshi, G Rahul Prashanth, Vinay Kumar Jadoun, Anshul
Agarwal and Saurabh Kumar Pandey*

15:20–15:35 Paper ID: 69
Title: Hybrid Intelligence Technique for Reactive Power Planning using FACTS devices...110
Authors: Nihar Karmakar, Saurav Raj and Biplab Bhattacharyya

15:35–15:50 Paper ID: 72
Title: A Novel Optimization Technique for LFC and Virtual Inertia Emulation of A
Multi Area Hybrid Power System...116
Authors: Sariki Murali, Ravi Shankar and Pulakraj Aryan

15:50–16:05 Paper ID: 76
Title: An Improved 3-Phase Load Flow for DG Integrated Distribution Systems Based
on PSO...122
Authors: Sudhakar Reddy Sama, Subrata Paul and Sunita Halder Nee Dey

16:05–16:20 Paper ID: 77
Title: SOS Based Solution for Optimization of Indian Power System...128
Authors: Nagendra Palukuru, BalaChnennaiah P and Vaisakh K

16:20–16:35 Paper ID: 87
Title: Application of Quasi Opposition Based Whale Algorithm For LFC of Multi-area
Deregulated Power System Using Fractional Controller ...133
Authors: Ashiwani Kumar, Prabhat Kumar Vidyarthi and Pulakraj Aryan

16:35–16:50 Paper ID: 89
Title: Interactive Search Algorithm Based Automatic Generation Control Using
Cascade Control and UPFC ...139
Authors: Utkarsh Raj, Ravi Shankar and Pankaj Rai

16:50–17:05 Paper ID: 93
Title: Optimal Power Flow with BAT algorithm for a Power System to reduce
transmission line losses using SVC...145
Authors: Lakshmi P, Venkateswara Rao Bathina, Ramesh Devarapalli and Pankaj Rai

Automation and Signal Processing (Venue: Hall-2)

14:30–14:50   **Invited Talk – Dr. Paramita Guha, CSIR-CSIO, Chandigarh**

14:50–15:05   Paper ID: 48
Title: Path Planning of UGV using Sampling Based Method and PSO in 2D Map Configuration: A Comparative Analysis...150
Authors: Rahul Prakash, Dr. Dharmendra Kumar Dheer and Dr. Mukesh Kumar

15:05–15:20   Paper ID: 52
Title: Estimation of Theophylline in Black Tea Using NIR Spectroscopy...156
Authors: Shreya Nag, Debangana Das, Hemanta Naskar, Runu Banerjee Roy, Bipan Tudu and Rajib Bandyopadhyay

15:20–15:35   Paper ID: 53
Title: Discrimination of Various Clones of Black Tea Using NIR Spectroscopy...159
Authors: Debangana Das, Shreya Nag, Hemanta Naskar, Ajanta Kumar Hazarika, Runu Banerjee Roy, Santanu Sabhapondit, Bipan Tudu and Rajib Bandyopadhyay

15:35–15:50   Paper ID: 54
Title: Development of Linseed Oil Based Quartz Crystal Microbalance Sensor for Detection of Trimethylamine...162
Authors: Samhita Dasgupta, Barnali Ghatak, Sanjoy Banerjee, Sk Babar Ali, Jyotsna Dei, Bijay Kumar Behera, Runu Banerjee Roy and Bipan Tudu

15:50–16:05   Paper ID: 55
Title: Fish Freshness Assessment using NIR spectroscopy...166
Authors: Jyotsna Dei, Hemanta Naskar, Samhita Dasgupta, Shreya Nag, Bijay Behera, Bipan Tudu, Runu Roy and Rajib Bandyopadhyay

16:05–16:20   Paper ID: 57
Title: Detection of Curcumin using A Simple and Sensitive Molecularly Imprinted Polymer (MIP) Embedded Graphite Electrode Based Electrochemical Sensor ...169
Authors: Hemanta Naskar, Sheikh Saharuk Ali, A. H. M. Toufique Ahmed, Debangana Das, Shreya Nag, Bipan Tudu and Rajib Bandyopadhyay

16:20–16:35   Paper ID: 82
Title: Secured Pulse Rate Monitoring System using IoT and Cloud...173
Authors: Aritra Ray and Hena Ray

16:35–16:50   Paper ID: 104
Title: Self-Supplied Automatic Control of Street Light...179
Authors: Surya Rai, Khushboo Kumari and Diwakar Verma

Time	Programme

09:30-10:10 Plenary Talk– 2: Prof. Ramesh Bansal, Department of Electrical and Computer Engineering, University of Sharjah, Sharjah, United Arab Emirates

10:10–10:30 Break

10:30-12:50

Day 2 | Technical Session-1

Microgrid and Power Electronic Applications (Venue: Hall-1)

10:30–10:50 Invited Talk – Dr. S. K. Parida, IIT Patna

10:50–11:05 Paper ID: 5
Title: Impact of Distributed Generation on the Reliability Allocation of Distribution System : A Mesh-Grid Approach...184
Authors: Sonal S and Debomita Ghosh

11:05–11:20 Paper ID: 29
Title: Integration of PV, Battery and Supercapacitor in Islanded Microgrid...190
Authors: Mahesh Kumar Choudhary and Ashwani Kumar Sharma

11:20–11:35 Paper ID: 38
Title: A Probabilistic Approach for Reactive Power Compensation in an Active Distribution Network with Wind Based Renewable Integration ...196
Authors: Amaresh Gantayet and Dharmendra Kumar Dheer

11:35–11:50 Paper ID: 88
Title: Design and Analysis of the Gate Driver Circuit for Power Semiconductor Switches...202
Authors: Ashutosh Kumar Singh, Rajib Kumar Mandal, Ravi Raushan and Pratyush Gauri

11:50–12:05 Paper ID: 94
Title: Siting and sizing of DG unit to minimize loss in distribution network in the presence of DG generated harmonics...208
Authors: Barnali Motling, Subrata Paul and Sunita Halder Nee Dey

12:05–12:20 Paper ID: 95
Title: Design of a High Gain DC-DC Converter For Renewable Energy Applications...213
Authors: Pranjit Kumar Roy, Ajoyjit Ghosh, Ashoke Mondal and Shilpi Bhattacharya

12:20–12:35 Paper ID: 97
Title: Single-Phase Average Reactive Power Measurement Using Instantaneous Power Theory in a Fixed Point Processor...219
Authors: Dipankar Chatterjee and Suvarun Dalapati

12:35–12:50 Paper ID: 103
Title: Grid Connected Photovoltaic Systems with Multilevel Inverter...225
Authors: Ashutosh Kumar Singh, Rajib Kumar Mandal, Ravi Raushan and Pratyush Gauri

Sensors and Signal Processing (Venue: Hall-2)

10:30–10:50   **Invited Talk – Prof. Bipan Tudu, Jadavpur University**

10:50–11:05   Paper ID: 36
Title: CNN Classifier based Low-resolution Face Recognition Algorithm...231
Authors: Shyam Singh Rajput and K V Arya

11:05–11:20   Paper ID: 56
Title: Anisotropic Diffusion Based Unsharp Masking and Crispening for Denoising
and Enhancement of MRI Images...235
Authors: Ravi Ranjan Kumar, Abhinav Kumar and Subodh Srivastava

11:20–11:35   Paper ID: 70
Title: Single-channel color image cryptosystem using chaotic structured phase encoding...241
Authors: Muhammad Abuturab

11:35–11:50   Paper ID: 78
Title: Reduced Graphene Oxide/Amino-Nitroso-Uracil Nanocomposite for the
Detection of Heavy Metals in Aqueous Environment...245
Authors: Pramanand Kumar, Chandramika Bora and Subrata Das

11:50–12:05   Paper ID: 86
Title: Impact of back gate voltage on sensing metric of dielectric modulated Tunnel FET
biosensor...249
*Authors: Praveen Dwivedi, Amitesh Kumar, Brajendra Singh Sengar, Vivek Garg and
Rohit Singh*

12:05–12:20   Paper ID: 92
Title: Effect of applied bias on Schottky interface to affect resistive switching in a
memristive device...252
*Authors: Amitesh Kumar, Praveen Dwivedi, Brajendra Singh Sengar, Vivek Garg and
Rohit Singh*

12:20–12:35   Paper ID: 99
Title: Performance Analysis For Wireless Non-Orthogonal Multiple Access
Downlink Systems...255
Authors: Ashish Pandey, Indrajeet Kumar and Ritesh Mishra

12:35–12:50   Paper ID: 101
Title: Study of Cognitive Fatigue using EEG Signal Analysis...261
Authors: Anwesha Sengupta

12:50–13:30   **Break**

Day 2 | Technical Session-2

Renewable Energy and Application (Venue: Hall-1)

13:30–13:50   **Invited Talk - Prof. N. B. Dev Choudhury, NIT Silchar**

14:05–14:20   Paper ID: 22
Title: Performance Analysis of Parallel-Connected Grid Independent Wind Energy Conversion Systems (WECS) with Energy Storage...267
Authors: Sri Datta Sai Polaki, Vidhyadhari Kotipatruni, Harija Rani Kirlampalli and Sastry V. Vedula

13:00 –13:15   Paper ID:27
Title: Impact of Renewable Sources in AGC for Two Area Interconnected Power System...273
Authors: Prateek Sharma, Abhishek Mishra and Ravi Shankar

14:20–14:35   Paper ID: 31
Title: Investigation of Buffer less Cu2ZnSnS4 Based Solar Cell...278
Authors: Prashant Kumar Verma, Pooja Punetha and Brajendra Singh Sengar

14:35–14:50   Paper ID: 39
Title: Energy Consumption and Energy Saving Potential in Indian Textile Sector...281
Authors: Saurabh Kumar Rajput, Dharmendra Kumar Dheer and Sulochana Wadhwani

14:50–15:05   Paper ID: 66
Title: Investigation of Environmental Effects on the Performance of Solar PV Modules...287
Authors: Kalpana Bijayeeni Samal and Abhyarthana Bisoyi

15:05–15:20   Paper ID: 73
Title: Dynamic participation of DFIG based wind farms for improved frequency regulation...292
Authors: Abhishek Saxena, Ravi Shankar and Pankaj Rai

15:35–15:50   Paper ID: 96
Title: Wind Generation Forecasting Using Python...298
Authors: Md Irfan Ahmed, Prateem Pan, Ramesh Kumar and R. K. Mandal

Control System (Venue: Hall-2)

13:30–13:50 **Invited Talk – Dr. Abhishek Dey, NIT Rourkela**

13:30–13:45 Paper ID: 47
Title: Robust Least Square Filter for Simultaneous Localization and Mapping...303
Authors: Sharifuddin Mondal and Wan Kyun Chung

13:45–14:00 Paper ID: 63
Title: Equilibrium Optimized AGC of Multi-Area Restructured Power System Using Cascaded Fractional Fuzzy Controller...306
Authors: Pulakraj Aryan, Ravi Shankar and Mrinal Ranjan

14:00–14:15 Paper ID: 75
Title: Discretization of Linear Time-Varying Systems...312
Authors: Gagan Deep Meena and JanardhananSivaramakrishnan

14:15–14:30 Paper ID: 79
Title: Stabilizing x-z Inverted Pendulum via Fractional Order PID Controller...318
Authors: Satyendra Kumar and MoinaAjmeri

14:30–14:45 Paper ID: 83
Title: LFC Scheme for A Deregulated Multi-Area Power System using Cascaded Fractional Order Controller...324
Authors: Sariki Murali, Ravi Shankar, ShivamShrivastav, Utkarsh Dhawal and Vishal Kannaujia

14:45–15:00 Paper ID: 84
Title: Load Frequency Regulation using Linear Active Disturbance Rejection Control Technique...330
Authors: Anand Kumar, Md Nishat Anwar and Ranjeet Kumar

15:00–15:15 Paper ID: 85
Title: Application of a Novel Political Optimization in Optimal Parameter Design of PI Controller for the BLDC motor Speed Control...336
Authors: Ramesh Devarapalli, Naraharisetti Jaya Naga Lakshmi and Upendra Prasad

15:15–15:30 Paper ID: 91
Title: Gain-Scheduled Feedback Controller Design for a Nonlinear Continuous Stirred Tank Reactor ..341
Authors: Ankita Ranjan, Sarbani Chakraborty and Vijaya Laxmi

15:30–15:50 Paper ID: 102
Title: PID Control of a Fixed Displacement Electro-Hydrostatic Actuation System...347
Authors: Nimai Pada Mandal

16:00-16:20 **Valedictory Session**