

2020 5th IEEE International Conference on Recent Advances in Engineering (ICRAIE) | 978-1-7281-9867-6/20/53130-0 | DOI: 10.1109/ICRAIE45105.2020.9558546

2020

5<sup>th</sup> IEEE International Conference (Virtual Mode)  
on  
Recent Advances and Innovations in Engineering  
(IEEE - ICRAIE-2020)

IEEE Conference Record # 51050

December 1-3, 2020

PROCEEDING

ORGANIZED BY



IEEE

DELHI SECTION



POORNIMA  
COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f) • Accredited by NBA

VENUE: Poornima College of Engineering, Jaipur (Raj.), INDIA

**5<sup>th</sup> IEEE International Conference  
On  
Recent Advances and Innovation in Engineering  
(ICRAIE-2020)  
(IEEE Record # 51050)**

**Presentation Schedule  
Technical Sessions**

**Track 1 - Computer Science Engineering and Information Technology**

Track Chair: Dr. Ajay Khunteta      Track Co-Chair: Dr. Surendra Yadav

**Tuesday, Day 1: 1<sup>st</sup> December, 2020**

Sr.No	ID	Time	Authors	Paper Title
<b>Session IA: Artificial Intelligence and Machine Learning (12:00 noon - 2:00 pm)</b>				
<b>Session Chair: Dr. Nilanjan Dey Rapporteur: Dr. Ajay Khunteta</b>				
1.	1570658504	12.00 noon - 12.15 pm	Madan Lal Saini (Poonma University, India); Shilpi Kulsreshtha (Jogannath University, India)	Study for the Prediction of E-Commerce Business Market Growth Using Machine Learning Algorithm
2.	1570678190	12.15 pm - 12.30 pm	Suninder Kaur Saini (UG, India); Vishal Dhall (UIET, Panjab University, India); Sarbjot Singh & Akashdeep Sharma (Panjab University, India)	Visual Exploratory Data Analysis of COVID-19 Pandemic
3.	1570662976	12.30 pm - 12.45 pm	Dipti Verma Nishina (DYPI/CAM, India)	Implementation of Machine Learning Algorithm for Predicting Performance of Student With Specific Reference to Master of Computer Application (MCA) Programme
4.	1570683960	12.45 pm - 1.00 pm	Yashvath Kumar Gantupalli and Venkatasaketha (PES University, India); Amudhewaran S (VTU, India); Devashish S Vaishnav (PES University, India)	High-Scale Food Recommendation Built on Apache Spark Using Alternating Least Squares
5.	1570691475	1.00 pm - 1.15 pm	Siwoo Kim and Ly Liang (Choice Research Group, USA)	Forecasting Housing Starts and Mortgage Rates Using Statistical and Computational Analysis
6.	1570691684	1.15 pm - 1.30 pm	Mihir Gandhi; Devansh Saajeev Solanki; Rutvij Sanjay Dapardar; Nirmita Shinde; Satish Kar (K. J. Somaiya College of Engineering, India)	Smart Control of Traffic Light Using Artificial Intelligence
7.	1570684251	1.30 pm - 1.45 pm	Priyanka Dwivedi (IIT Delhi, India)	An Embedded Deep Learning Based Traffic Advisory System

15

Sr.No	ID	Time	Authors	Paper
<b>Session II A: Artificial Intelligence and Machine Learning (3:00 pm - 4:30 pm)</b>				
<b>Session Chair: Dr. Krishan Kumar, HoD CSE NIT Uttarakhand, Srinagar Rapporteur: Dr. Neelam Chaplot</b>				
8.	1570692375	3.00 pm-3.15 pm	Bhawana Maurya (Government Women Engineering College, India); Saroj Hiranwal (RIET, India)	A Review on Liver Cancer Detection Techniques
9.	1570694211	3.15 pm-3.30 pm	Anil Singh Parihar, Shivansh Singh, Srishri Nanduri and Yashrajgav, Dept. of Computer Science and Engineering, Delhi Technological University New Delhi, India	A comparative analysis of Deep Learning based approaches for Low-light Image Enhancement
10.	1570693295	3.30 pm-3.45 pm	Pushpendra Singh Sisodia (Poonma College of Engineering, India)	An Elderly Fall Detection Techniques Using Depth Images
11.	1570693476	3.45 pm-4.00 pm	Sowmya Sanaagaarapu (Anna University, India); Sashank Sridhar (Anna University, India)	Dynamic Routing Framework Proposal for SDWAN Using Topology-Based Multi-Link Learning
12.	Invited 1	4.00 pm-4.15 pm	Costin Badica, Amelia Badica (University of Craiova, Romania); Maria Ganza (Warsaw University of Technology, Poland); Marcin Paprzycki (Systems Research Institute Polish Academy of Sciences, Poland); Mirjana Ivanovic (University of Novi Sad, Serbia)	Multi-Agent Simulation of Core Spatial SIR Models for Epidemic Spread in a Population
<b>Session III A: Networks, Security and Biometrics (4:30 pm-6:00 pm)</b>				
<b>Session Chair: Dr. Priyanka Dahiya, SOC, DIT Dehradun Rapporteur: Dr. Neelam Chaplot</b>				
13.	1570680800	4.30 pm-4.45 pm	Brian Septian (Osaraja University, India)	IoT Based Power Monitoring System for Diesel Generator
14.	1570691093	4.45 pm-5.00 pm	Priya Mukund Deshmukh (PRMITER, Anwarli, Maharashtra, India)	Biometric Jammer: A Security Enhancement Using SVM Classifier
15.	1570693893	5.00 pm-5.15 pm	Garima Mathur (Poonma College of Engineering, Jaipur, India); Sanjeev Yadav (Govt. Women Engineering College Jaipur, India)	Monitoring and Detection of Blood Flow Based on internet of Things
16.	1570692213	5.15 pm-5.30 pm	Daniel Mulariqi Mohamed Azzhar (Universiti Teknologi MARA Cawangan, Kedah, Malaysia); Siti Rafiqah Muboniat Dawana (Universiti Teknologi MARA Cawangan, Kedah & Faculty of Computer & Mathematical Sciences, Malaysia)	A Review: Standard Requirements for Internet of Vehicles (IoV) Safety Applications
17.	1570687975	5.30 pm-5.45 pm	Shafiqat Mansoor (Universiti Teknologi Mara & Kedah Branch, Malaysia)	Blockchain-Based Internet of Vehicles (IoV): An Approach Towards Smart Cities Development

16

**Wednesday, Day 2: 2<sup>nd</sup> December, 2020**

**Session IVA: Natural Language Processing (8:00 am - 9:30 am)**

**Session Chair: Dr. Anil Kumar Dahiya, Head Research DIT Dehradun  
Rapporteur: Dr. Praveen Gupta**

Sr.No	ID	Time	Authors	Paper
18.	1570683255	8:00 am - 8:15 am	Nor Hafizah Abdul Razak and Nurul Husna Mahadzir (Universiti Teknologi MARA, Cawangan Kedah, Malaysia)	A New Sentiment Analysis Model for Mixed Language Using Contextual Lexicon
19.	1570683464	8:15 am - 8:30 am	Noor Hasmita Abdul Talib and Saffa Raehan Zainal Abidin (Universiti Teknologi MARA, Malaysia); Shifa Zahrah Wan Nur (Nasional University Of Malaysia, Malaysia)	Serious Game Development - A Miraculous Literacy Tool for Helah Students
20.	1570660403	8:30 am - 8:45 am	Apar Gary and Rohit Kumar Kalyar (Banasther University, India)	Psent20: An Effective Political Sentiment Analysis With Deep Learning Using Real-Time Social Media Tweets
21.	1570688191	8:45 am - 9:00 am	Tanmay Vijay (Rajasthan Technical University, Kota, India); Ayan Chawla (Dev University, Jalandhar, India); Balan Dhanka (ICCT, University of Rajasthan, Jaipur, India); Purnendu Karmakar (The IIM Institute of Information Technology, India)	Sentiment Analysis on COVID-19 Twitter Data
22.	1570694115	09:00 am-09:15 am	Kamlesh Lakhwani (Lovely Professional University Phagwara, Punjab, India); Sandeep Bhargava (Poonma College of Engineering Jaipur); Deependra Sonawani (Poonma College of Engineering, Jaipur); Dr. Ruchi Doshi (Jayoti Vidyapeeth Women's University, Jaipur); Kamal Kant Hiran (Sir Padampat Singhania University Udaipur, Rajasthan, India)	An Enhanced Approach to Infer Potential Host of Coronavirus by Analysing Its Spike Genes Using Multilayer Artificial Neural Network
<b>Session VA: Natural Language Processing (9:30 am - 10:30 am)</b>				
<b>Session Chair: Dr. Anil Kumar Dahiya, Head Research DIT Dehradun Rapporteur: Dr. Praveen Gupta</b>				
23.	1570693653	9:30 am - 9:45 am	Amrita Sharma and Neva Chaudhary (Manipal University Jaipur, India)	Linear Regression Model for Agile Software Development Effort Estimation
24.	1570693157	09:45 am - 10:00 am	Siti Nurhayati Ismail (Universiti Teknologi MARA, Kedah, Malaysia); Shahirah Mohamed Hatin (Universiti Teknologi MARA, Fozak Branch, Tpkah Campus, Malaysia)	Chemistry Education: Rate of Reaction via Learning Mobile Application

17

25.	1570691117	10:00 am- 10:15 am	Malaysia); Shamsul Jamel Elias (Doctor of Philosophy, Malaysia); Abd Razaq Mansoor (Universiti Teknologi MARA Kedah, Malaysia); A Fauz Wany Yoon Khang (Universiti Teknikal Malaysia Melaka, Malaysia)	Prediction of the Onset of Diabetes Using Artificial Neural Network and Pima Indians Diabetes Dataset
<b>Session VIA: Parallel, Distributed and High Performance Computing (12:30 pm-1:30 pm)</b>				
<b>Session Chair: Dr. Emmanuel Pilli, HoD CSE, MNJT, Jaipur Rapporteur: Dr. Ajay Khunteta</b>				
26.	1570681577	12:30 pm - 12:45 pm	Thaval Jayantrakanar Pujara and Malharajayanthu Indian Institute of Science, India)	Mixed Integer Linear Programming Model for Scheduling Turn-in Orders to Minimize Total Weighted Earliness/Lateness
27.	1570681984	12:45 pm - 1:00 pm	Minal Moharir and Shobha G (RV College of Engineering, India); Akshay Oppalappan (RV College of Engineering, India); Akash R and Rohit Mohan Krishna G V L (RV College of Engineering, India); S Nitin Padil (RV College of Engineering, India); Mohit Prakash Saxena (CITRA & E-Design Pvt Ltd, India)	A Study and Comparison of Various Types of Load Balancers
28.	1570688154	1:00 pm - 1:15 pm	Inderjit Singh Dhanoa and Kulvinder Kaur (Guru Nanak Dev Engineering College, Ludhiana, India); Fauzaj Bhabhri (Guru Nanak Dev Engineering College, Ludhiana)	Optimized PSO-EFA Algorithm for Energy Efficient Virtual Machine Migrations
29.	1570691402	1:15 pm- 1:30 pm	Stefka Fidanova (Institute of Information and Communication Technologies, Bulgaria)	Hybrid Ant Colony Optimization Algorithm for Multiple Knapsack Problem
<b>Session VII A: Deep Learning and Neural Networks (4:30 pm-6:00 pm)</b>				
<b>Session Chair: Dr. Ajay Pratap, CSE Dept., IIT BHU Rapporteur: Dr. Sumi Gupta</b>				
30.	1570678324	4:30 pm-4:45 pm	Leena Chaturvedi (RVCE, India); A Sreelakshmi (IIT, India)	Angle Classifier for Registration of MRI and CT Brain Images Using Deep Learning
31.	1570679627	4:45 pm-5:00 pm	Alak Nogi (National Institute of Technology)	Face Mask Detection Classifier

18

7.	1570657693	01:30PM-1:45PM	<b>BhuvneshRathor</b> (Student, Electrical Engineering, Rajasthan Technical University, Kota, Kota, India); <b>Gaurav Jain</b> (Assistant Professor, Electrical Engineering Poonima College of Engineering, Jaipur, India); <b>Rajkumar Jain</b> (Assistant Professor, Elect. & Comm Engg, Poonima College of Engineering, Jaipur, India); <b>PravinSonwane</b> Professor, Electrical Engineering Poonima College of Engineering, Jaipur, India	Smart Modern AC Microgrid Monitoring System using Power Line Communication
<b>Session IIC: Power Quality (03:00PM-04:00PM)</b>				
<b>Session Chair: Dr. Pushendra Singh, EE Dept. JKLU Jaipur</b>				
<b>Rapporteur: Dr. Deepika Chauhan</b>				
Sr.No	ID	Time	Authors	Paper
8.	1570653220	03:00PM-03:15PM	<b>Dheera</b> Verma (IIT, Jammu, India); <b>Anup Shukla</b> (IIT, Jammu, India); <b>Prerna Jain</b> (MNIT Jaipur, India)	COVID19: Impact on Indian Power Sector
9.	1570677374	03:15PM-03:30PM	<b>Pratul Vijay Nandankar</b> ; <b>Prashant P. Bedekar</b> ; <b>Prashantkumar V. Dhawas</b> (Electrical Engineering Department, Government College of Engineering Chandrapur, Chandrapur, India)	Variable Switching Frequency for Synchronous Buck Converter
10.	1570678291	03:30PM-03:45PM	<b>Aradhana Khillo</b> ; <b>Sushree Sangita Patnaik</b> (Department of Electrical Engineering-PMEEC, Berhampur, India)	Performance Study of 6-Pulse HVDC-VSC Using Particle Swarm Optimization (PSO) Based Controller in 4-q Reference Frame Under Transient AC Fault Conditions
<b>Session IIIC: Power Quality (04:30PM-06:00PM)</b>				
<b>Session Chair: Dr. RAVINDRA JOSHI   Project Head-MARAFIQ Smart Metering Project, Saudi Arabia</b>				
<b>Rapporteur: Dr. Praveen Sonwane</b>				
Sr.No	ID	Time	Authors	Paper
11.	1570680988	04:30PM-04:45PM	<b>Pratul Vijay Nandankar</b> ; <b>Prashant P. Bedekar</b> ; <b>Prashantkumar V. Dhawas</b> (Electrical Engineering Department, Government College of Engineering Chandrapur, Chandrapur, India)	Efficient DC-DC Converter Using Variable Switching Frequency Digital Controller

70

12.	1570681163	04:45PM-5:00PM	<b>Mahendra Kumar Gupta</b> (National Institute of Technology Jalandhar, India); <b>Nutan Tomar</b> (Indian Institute of Technology Patna, India); <b>Dipa Sharma</b> (SDM Govt PG College Dowsala, Dehradun, India); <b>Juhi Jaiswal</b> (Indian Institute of Technology Patna, India)	PD Observer Design for Descriptor Systems with Unknown Inputs: Application to Infinite Bus System
13.	1570677524	05:00PM-05:15PM	<b>Shalendra Kaveri</b> ; <b>Rajlakshmi Nayak</b> (Department of Mechanical Engineering, JK Lakshmiipat University, India); <b>Shahar Chandra Bhaduri</b> (Dean, Faculty of RAC, Automotive, Electrical Skills, Bharatiya Skill Development University, Jaipur, India)	Energy Efficiency Analysis of Variable Speed DC Compressor Using R290
<b>Wednesday, Day 2: 2<sup>nd</sup> December, 2020</b>				
<b>Session IVC: Advances of Renewable Energy Sources &amp; Electric Drives (08:00AM-09:30AM)</b>				
<b>Session Chair: Dr. Nandkishore Gupta, Govt. COE Ajmer</b>				
<b>Rapporteur: Dr. Himani Goyal</b>				
Sr.No	ID	Time	Authors	Paper
14.	1570679056	08:00AM-08:15AM	<b>Harshi Karyoti</b> (Department of Information & Technology, ABES Institute of Technology, Ghaziabad, UP-India); <b>Arpit Bhushan Sharma</b> (Student Member IEEE, Department of Electrical & Electronics Engineering, KIET Group of Institutions, Ghaziabad, UP-India); <b>Brijesh Singh</b> (Senior Member IEEE, Department of Electrical & Electronics Engineering, KIET Group of Institutions, Ghaziabad, UP-India)	Performance evaluation of PV integrated DC-DC converter with load demand, irradiance, and temperature variations
15.	1570681656	08:15AM-08:30AM	<b>Trisha Bora</b> , <b>Prateek Chatterjee</b> and <b>Saradindu Ghosh</b> (National Institute of Technology, Durgapur, India)	Fuzzy Logic Based Control of Variable Wind Energy System
16.	1570682759	08:30AM-08:45AM	<b>Vaishali Shirsath</b> (Sandip University, India); <b>Rahul Agrawal</b> (Sandip University, Nashik, India)	Optimization Through Wind Modeling by Means of Mechanical Design to Enhance Wind Power Generation and System Reliability

71

<b>Session VC: Advances of Renewable Energy Sources &amp; Electric Drives (09:30AM-10:30AM)</b>				
<b>Session Chair: Dr. Subrata Mukhopadhyay</b>				
<b>Rapporteur: Dr. Himani Goyal</b>				
Sr.No	ID	Time	Authors	Paper
17.	1570688363	09:30AM-09:45AM	<b>Ms. Rutuja Suresh Zargad</b> (M.Tech Student, Department of Electrical Engineering, Government College of Engineering, Aurangabad); <b>Prof. Meghraj S Morey</b> (Department of Electrical Engineering, Government College of Engineering, Aurangabad)	Standalone PV Based Vector Controlled Induction Motor Drive for Renewable Energy Application
18.	1570688651	09:45AM-10:00AM	<b>Vaishali Shirsath</b> ; <b>Rahul Agrawal</b> (Department of Electrical and Electronics Engineering, Sandip University, Nashik, India)	A Review of Wind Station Data Modeling for Wind Turbine Reliability Enhancement to Optimize Wind Energy Considering Turbine Design
19.	1570684733	10:00AM-10:15AM	<b>Poonam Dhaba</b> (PES Modern College of Engineering, India); <b>Neraj Tiwari</b> (Poonima University, Jaipur, India)	Computation of Locational Marginal Pricing in the Presence of Uncertainty of Solar Generation
<b>Session VIC: Hybrid Electric Vehicles (12:30PM-01:30PM)</b>				
<b>Session Chair: Dr. Kailash Sharma, EE Dept, NIT Jalandhar</b>				
<b>Rapporteur: Dr. Deepika Chauhan</b>				
Sr.No	ID	Time	Authors	Paper
20.	1570681845	12:30PM-12:45PM	<b>Karthika B.</b> (Department of Electrical Engineering, College of Engineering Trivandrum, Trivandrum, India); <b>V.R. Jisha</b> (Department of Electrical Engineering, Government Engineering College Thiruvr, Thiruvr, India)	Nonlinear Optimal Control of a Two Wheeled Self Balancing Robot
21.	1570682112	12:45PM-01:00PM	<b>Ahmed Waqas Usmani</b> (Aligarh Muslim University, India); <b>Mohammad Saad Alam</b> (Aligarh Muslim University, India); <b>Yasser Rafat</b> (Aligarh Muslim University, India); <b>Ibrahim Al-Saidan</b> (Qassim University, Saudi Arabia)	An IoT Based Solution to Avoid Venting in Lithium Ion Battery Due to Overcharging
22.	1570682623	04:30PM-04:45PM	<b>Charu Singh</b> (Aligarh Muslim University, India); <b>Sanchari Deb</b> (VIT Technical Research Centre, Espoo, Finland); <b>Mohammad Saad Alam</b> (Aligarh Muslim University, India); <b>Yasser Rafat</b> (Aligarh Muslim University, India)	Analytical Strategy for Deployment of EV Fast-Charging Stations
23.	1570682719	04:45PM-05:00PM	<b>MahdJaved</b> (Aligarh Muslim University, India); <b>Sanchari Deb</b> (VIT Technical Research Centre, Espoo, Finland); <b>Mohammad Saad Alam</b> ; <b>Dr. Yasser Rafat</b> ; <b>Prof. Salman Hameed</b> (Aligarh Muslim University, India)	Impact of Vehicle to Grid on Power System

72

<b>Thursday, Day 3: 3<sup>rd</sup> December, 2020</b>				
<b>Session VIIIC: Power System Stability and Control (11:30AM-1:30PM)</b>				
<b>Session Chair: Dr. Rachana Garg, EE Dept., DTU, Delhi</b>				
<b>Rapporteur: Dr. Himani Goyal</b>				
Sr.No	ID	Time	Authors	Paper
24.	1570681559	11:30AM-11:45AM	<b>Suresh K. Jamure</b> ; <b>P. Agnihotri</b> (Indian Institute of Technology Bhubli, India)	Determining the later-Area Modes of the Power System Network Using Circuit Analogy
25.	1570682751	11:45AM-12:00PM	<b>Pravin Sonwane</b> , <b>EED</b> (Poonima COE, EED, PCE, Jaipur, India); <b>Vaishali Shirsath</b> (EED, Sandip University, Nashik, India); <b>Himani Sharma</b> (EED, Poonima COE, Jaipur, India); <b>Gaurav Jain</b> (EED, Poonima COE, Jaipur, India)	Failure Analysis of 30 Bus System by Capacitor Sizing and Placement
26.	1570682924	12:00PM-12:15PM	<b>Komal Sharma</b> (SKIT M&G Jaipur, India); <b>Sarfraz Nawaz</b> (SKIT M&G Jaipur, India)	Allocation of DG Units in Distribution System to Minimize Reactive Power Loss
27.	1570688062	12:15PM-12:30PM	<b>Maanv Bhatnagar</b> (National Institute of Technology Raipur, India); <b>Anamika Yadav</b> (National Institute of Technology, Raipur Raipur, India)	Fault Detection and Classification in Transmission Line Using Fuzzy Inference System
28.	1570684680	12:30PM-12:45 PM	<b>Arpita Singh</b> ; <b>Ashish Raj</b> ; <b>Dr. Manoj Gupta</b> , <b>Mohammed Sayeeduddin Habeeb</b> ; <b>Dr. Sunil Kumar Gupta</b> , 1-2 Assistant Professor, Department of Electrical and Electronics Engineering, Poonima University, Jaipur, Rajasthan, India; 3-5 Professor, Department of Electrical and Electronics Engineering, Poonima University, Jaipur, Rajasthan, India; 4-Lecturer, Department of Electrical Engineering, college of Engineering, King Khalid University, Abha, KSA	TWDM-PON: The Enhanced PON for Triple Play Services
29.	1570684770	12:45 PM-01:00PM	<b>Pushendra Pratap Singh</b> ; <b>Ashish Raj</b> ; <b>Dr. M Ram Kumar Raja</b> ; <b>Mohammed abdul moqet</b> (M.Tech (Scholar), Department of Electrical and Electronics Engineering, Poonima University, Jaipur, Rajasthan, India; 2 Assistant Professor, Department of Electrical and Electronics Engineering, Poonima University, Jaipur, Rajasthan, India; 3 Associate Professor, Department of Electrical Engineering, college of Engineering, King Khalid University, Abha, KSA; 4 lecturer, Department of Electrical Engineering, college of Engineering, King Khalid University, Abha, KSA)	Interfacing Problems of Programmable Logic Controller in Hardware Replacement

73

			Uttarakhand, India); Prachi Chauhan (G. B. Pant University of Agriculture and Technology, Pantnagar, India); Krishan Kumar (National Institute of Technology Uttarakhand, India); Ravindra Rajput (G. B. Pant University of Agriculture and Technology, Pantnagar, India)	Model Pruning with Keras-Surgeon
32.	1570682630	5:00 pm-5:15 pm	Kiran Bisht (G. B. Pant University of Agriculture and Technology, India)	Deep Reinforcement Learning Based Multi-Objective Systems for Financial Trading
33.	1570682898	5:15 pm-5:30 pm	Mamta Gehlot and Madan Lal Saini (Poonima University, India)	Analysis of Different CNN Architectures for Tomato Leaf Disease Classification
34.	1570692322	5:30 pm - 5:45 pm	Jasmin Iyani Ahmad (UTM, Malaysia); Nor Haniza Mohd Khir (Universiti Teknologi MARA (UiTM) Kedah, Malaysia); Marina Ismail (Universiti Teknologi MARA, Malaysia)	Person Modelling via Correlation and Regression Analysis in CGI Gamification
35.	1570694234	5:45 pm- 6:00 pm	Anil Singh Parthar, Aditya Kaushik, Aditya Vikram Choudhary, Anil Kumar Singh (Department of Computer Science and Engineering, Delhi Technological University, Delhi, India)	A Primer on Conditional Text based Image Generation through Generative Models
36.	1570683507	06:00PM-06:15PM	Puneet Dwivedi, Ravi Singh Pippal, RKDF University Bhopal, India	Design and Performance Analysis of Routing Protocols for Delay Tolerant Networks

Thursday, Day 3: 3<sup>rd</sup> December, 2020

Session VIII A: Deep Learning and Neural Networks (11:30 am - 12:45 pm)

Session Chair: Dr. Rajbir Kaur, CSE Dept. LNMIIIT, Jaipur  
Rapporteur: Dr. Ajay Khunteta

Sr.No	ID	Time	Authors	Paper
37.	1570683247	11:30 am - 11:45 am	Alida Ahmad and Nora Batuzura Mohd Isa (Universiti Teknologi Mara, Malaysia)	Using Bezier-Ball Function to Interpolate Positive Data and its Application
38.	1570688433	11:45 am - 12:00 noon	R Kaja Bantha Navas and S Prakash Dr (Sathyabama Institute of Science and Technology, India)	A Systematic Review on Wind Energy Resources Forecasting by Neural Network
39.	1570693179	12:00 noon -12:15 pm	Nurul Fatma Yusni, Nur Farah Hanani Mohd Zaim and Siti Khairul Niza Sukri; Noreha Che Sidik; Shamsul Jamel Elias; Zanariah Idrus (Universiti Teknologi MARA Kedah, Malaysia)	Quick Response Code: Medication Prescription
40.	Invited 2	12:15 pm-12:30 pm	Marcin Paprzycki (Systems Research Institute Polish Academy of Sciences Warsaw, Poland); Maria Ganzha (Warsaw)	Development of a neural network library for resource constrained speech synthesis

			University of Technology Warsaw, Poland); Sujeendran Menon & Pawel Zarycki (Smart Life Systems Sp. z o.o. Warsaw, Poland)	
41.	1570694690	12:30 pm - 12:45 pm	Ms. Deepti (Poonima College of Engineering, Jaipur), Dr. Ajay Khunteta (Poonima University, Jaipur), Ajit Noonia (Institute of Engineering and Technology, Chitkara University, Punjab, India)	An Efficient Two Stage Clustering Algorithm for Signed Social Networks
42.	1570694695	12:45 pm - 1:00 pm	Neeraj Kumar Verma, Sandeep Kumar, Mukesh Kumar (Poonima University, Jaipur), PRAFUL SAXENA, Senior Faculty, (Nurture Education Pvt Ltd, TMU Moradabad, India)	An Alternate Approach to Improve Access Time For Defining Frequent Item Set Through 'A-Prion' In Textual Data Set
43.	1570694707	1:00 pm - 1:15 pm	Ajit Noonia (Chitkara University Institute of Engineering and Technology, Chitkara University, Punjab), Alpna Dahiya (MVJCE, Bangalore, India), Ajay Khunteta (Poonima University, Jaipur)	A Hybrid Vehicular Network - Inter-Region & Intra-Region Communication
44.	1570693909	1:15 pm - 1:30 pm	Maged M. Eljazzar and Elsayed E. Hemayed (Computer Engineering Dept., Faculty of Engineering, Cairo University, Giza 12613, Egypt)	Impact of Economic, Social and Meteorological Factors on Load Forecasting in Different Timeframes - A Survey



5<sup>th</sup> IEEE International Conference  
On  
Recent Advances and Innovation in Engineering  
(ICRAIE-2020)  
(IEEE Record # 51050)



**Presentation Schedule**  
Technical Sessions

**Track 2 - Electronics & Communication Engineering**  
Track Chair: Dr. Garima Mathur      Track Co-Chair: Dr. Ashok Kajja

**Tuesday, Day 1: 1<sup>st</sup> December, 2020**

Sr.No	ID	Time	Authors	Paper Title
<b>Session IB: Wireless Communication &amp; Networks (12:00 noon- 2:00 pm)</b> Session Chair: Dr. Menka Yadav, ECE Dept., MNIT Jaipur Rapporteur: Dr. Ashok Kajja				
1.	1570680533	12:00PM-12:15PM	Aarif Bashir Dar, Farooz Ahmad (Jalisco University of Science & Technology, India)	Realization of Mesh-Zehnder Modulator with Ultrahigh Extinction Ratio at Maximum Transmission Bias Point
2.	1570680717	12:15PM-12:30PM	Bisma Bukhari, Gulam Mohd Raiber, (National Institute of Technology, Shriagar, India)	Ground Plane Effects on the Performance of a Rectangular Microstrip Patch Antenna: A Study
3.	1570681381	12:30PM-12:45PM	Ambresh G. Bhradar, (M. S. Ramaiah University of Applied Sciences, Bangalore, India)	A Comparative Study on Routing Protocols: RIP, OSPF and EIGRP and Their Analysis Using GNS-3
4.	1570682738	12:45PM-01:00PM	Sathwik S and Saradep M, (Amrita Vishwa Vidyapeetham, Bengaluru, India), Arpita Thakre (PES University)	Symbol Detection in Presence of Symbol Tuning Offset Using Machine Learning Technique
5.	1570682871	1:00PM-1:15PM	Shubham Jain, Zauraz Ahmad, Mohammad Saad Alawi, Yasser Rafat, (Aligarh Muslim University, India)	Battery Swapping Technology
6.	1570682887	1:15PM-1:30PM	A K Gaudharva, J CH I, Ramoji, K P Akshay, (Amrita Vishwa Vidyapeetham, Bengaluru, India), Arpita Thakre, (PES University, Bengaluru, India)	Dual Mode OFDM-IM With Multiple Choice of Constellations
7.	1570683223	1:30PM-1:45PM	Zainab Hussam Al-Araji, (University of Baghdad, Iraq), Nada Ali Swalhat, (University of Voronezh State Technical, Syria), Valeria Korneeva, (Voronezh State Technical University, Russia), Hassan Ali Soukat, (Voronezh State University, Russia), Alevtina Sergeevna Samoilova, (Voronezh State Technical University, Russia)	The New Way of Estimating the PCB's Lifetime of Fatigue Using the Principle of Linear Accumulated Damage in Various Boundary Condition

8.	1570689026	1:45PM-2:00PM	Kailash Chandra Bandhu, (Shriyogokadan Institute of Technology and Management - Technical Campus, Indore, MP, India), Ashok Bhanusi, (OP Jindal University, Raigarh, CG, India)	Comparison of Transmission Control Protocol Variants for Two Way Transfer and Propagation Model With WiMAX Network Bandwidth Asymmetry
----	------------	---------------	---	--

**Session II B: Digital Electronics (03:00 pm - 04:15 pm)**  
Session Chair: Dr. Aditya Pundir, ECE Dept. Arya COET, Jaipur  
Rapporteur: Dr. Anila Dhingra

Sr.No	ID	Time	Authors	Paper
9.	1570667817	03:00PM-03:15PM	Vidhatri Gajjala, (HMFA Memorial Institute of Engineering & Technology, India), Om Prakash Gajjala, (Bektiyarpur College of Engineering, Patna, India)	Multiple Module Manipulator with Control Strategy for Minimally Invasive Surgery
10.	1570667822	03:15PM-03:30PM	Vidhatri Gajjala, (HMFA Memorial Institute of Engineering & Technology, India), Om Prakash Gajjala, (Bektiyarpur College of Engineering, Patna, India)	Emergence of Nanotechnology in Sensing and Actuation of Biorobotics
11.	1570681631	03:30PM-03:45PM	Debadrata Sarkar, Aman Arora & Shihendu Roy, (National Institute of Technology Durgapur, India), Sayantan Pal, Amit Kumar, (CSIR-Central Mechanical Engineering Research Institute Durgapur, India)	Estimation of Transmission Force in Assistive Devices Using Conductive Liquid Metal Based Sensorized Pneumatic Artificial Muscle
12.	1570682220	03:45PM-04:00PM	Preeti Singh, (Poonima University, India)	Comparative Analysis of Different Clock Gating Techniques
13.	1570686116	04:00PM-04:15PM	Jeev Kishor Bhai Vora, Jaijeel Purani and Vipin Shukla, (Pandit Deendayal Petroleum University, India)	Design of Novel Time Monitored Touchless Operation Using 555 Timer for Automatic Dispenser

**Session IIIB: VLSI, VHDL & Chip Level Design (04:30 pm - 06:00 pm)**  
Session Chair: Dr. Rajnish Sharma, Dear Research & Academics, Chitkara University, Punjab  
Rapporteur: Mr. Durgesh Kumar

Sr.No	ID	Time	Authors	Paper
14.	1570657915	04:30PM-04:45PM	Jasdeep Dhanoa & Manibha Sharma, (Indira Gandhi Delhi	Smart Logic Built in Self-Test in SOC
15.	1570662928	04:45PM-05:00PM	Aditi Chhabra & Jasdeep Dhanoa, (Indira Gandhi Delhi Technical University	A Design Approach for MAC Unit Using Vedic Multiplier
16.	1570687640	05:00 PM-05:15PM	Priyanshi Goyal, (University of Delhi, India), Harpreet Kaur, (University of Delhi, South Campus, India)	Analytical Modeling and Design of Ga2O3 MOSFET

17.	157068004	05:15PM-05:30PM	Swati Sharma,(Guru Gobind Singh Indraprastha University, India)	Schottky Barrier Double Surrounding Gate MOSFET for High-Frequency Implementation
18.	1570691686	05:30PM-05:4+5PM	Payal Bansal, Devendra Kumar Somwanshi, Poojima College of Engineering, Jaipur	Study of MSPA in Aspect of Design & Parameter With These Different Substrate Materials
19.	1570686180	05:45PM-06:00PM	Himan Goyal Sharma, (Poojima College of Engineering) Rina Sharma, (L. K. Gujral Punjab Technical University, Jalandhar, Punjab), Devendra Somwanshi (Poojima College of Engineering, Jaipur)	A Comparison of Lifetime in WSN with Static and Mobile Sink
<b>Wednesday, Day 2: 2<sup>nd</sup> December, 2020</b>				
<b>Session IV B: Smart Antennas and Wave Propagation(08:00am- 09:30 am)</b>				
<b>Session Chair: Dr. Sanjeev Yadav, ECE Dept., WCOE, Ajmer</b>				
<b>Rapporteur: Dr. Anila Dhingra</b>				
Sr.No	ID	Time	Authors	Paper
20.	1570682500	08:00AM-08:15AM	PallavRawal,(SKIT &Manipal University Jaipur, India), SanyogRawat, (Manipal University Jaipur)	A Bowtie Shaped Frequency Reconfigurable Microstrip Patch Antenna With Wide Coverage Area
21.	1570683741	08:15AM-08:30AM	DurpaSuryachandGopavajhula,(NITK Surathkal, India), Sanjeev Kumar, (NITK, Karnataka, India),V Narasimhadhan A. (NITK, India)	Dual-Band Antipodal Vivaldi Antenna for Wireless Neural Monitoring Applications
22.	1570683594	08:45AM-09:00AM	DeepeshSahoo, (PES University, India),Abhishek Deshpande,(PES University, India),Sumita M S(PES University, India)	Study of Different Adders Using Full Swing Gate Diffusion Input
23.	1570688164	09:00AM-09:15AM	Mahendra Singh, Durgesh Kumar,Poojima College of Engineering, Jaipur	Design and Analysis of Ultra High Speed 16 Channel Cascaded EDFA-DWDM Network With Post Dispersion Compensation Using Optimization of Fiber Bragg Grating
<b>Session V B: Wireless Communication &amp; Networks(09:30 am- 10:30 am)</b>				
<b>Session Chair: Dr. Amit Singhal, ECE Dept. Bennett University, Noida</b>				
<b>Rapporteur: Dr. Anila Dhingra</b>				
Sr.No	ID	Time	Authors	Paper
24.	1570694059	09:30AM-09:45AM	Shahbaz Akhtar,(Indian Institute of Technology Patna, India), Jitendra Gupta, (Indian Institute of Technology, Patna, India), Pramit	Heuristic-Based Cost-Efficient C-RAN Fronthaul Deployment Over TWDM-PON










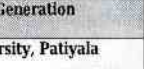

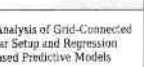



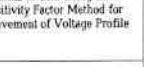

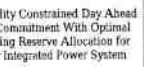

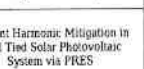
47

25.	1570681696	09:45AM-10:00AM	Kanchan Tiwari Swami (RGPV Bhopal, India)	A Review of LFI Technology
26.	1570692193	10:00AM-10:15AM	Gayathri Narayanan(Amrita VishwaVidyaapeetham AMRITA University, India), Anupam Pedapudi (Amrita Vishwa Vidyaapeetham Bengaluru, India), Sai Teja Kurupati (Amrita Vishwa Vidyaapeetham Bengaluru, India), Dhanaesh G. Kurup (Amrita University, Bengaluru Campus, India)	Performance Analysis of Sensor Communications for Agriculture Systems Using SDR Platform
27.	1570689168	10:15AM-10:30AM	Rami Mohaisen(Jordan University of Science and Technology, Jordan), Mamoun F. Al-Mustarihi(Jordan University of Science and Technology, Jordan), Khalid A. Darabkh(The University of Jordan, Jordan)	Outage Probability Evaluation for Relay-Based DF Cooperative Diversity Systems with Multipath Fading Channels and Non-identical Interferers
<b>Session VI B: Digital Signal Processing(12:30 pm- 01:30 pm)</b>				
<b>Session Chair: Dr. Ashwini Kumar, ECE Dept. Amity University, Jaipur</b>				
<b>Rapporteur: Mr. Durgesh Kumar</b>				
Sr.No	ID	Time	Authors	Paper
28.	1570680957	12:30PM-12:45PM	MadhavPrabhu, (MEC, Oman)	A Comprehensive Survey on Implementation of Image Processing Algorithms Using FPGA
29.	1570680992	12:45PM-01:00PM	PushpaKoranga, (BSSDU, Jaipur)	A Review on Classification of Different Techniques of Image Denoising
30.	1570681725	01:00PM-01:15PM	AtharvPalwal(New Delhi, India),BhavikMohindroo and KritiSunja,(Delhi Technological University, India)	Hardware Design of Image Encryption and Decryption Using CORDIC Based Chaotic Generator
31.	1570682710	01:15PM-01:30PM	Ashish Sharma &SatyasaJagannath Nanda,(Malaviya National Institute of Technology Jaipur, India)	Timely Detection of Seismic Waves in Ground Motion Data Using Improved S-Transform
32.	1570686195	01:30PM-01:45PM	DevendraSomwanshi, KalpitJain,Dhananjay Kumar(Poornima College of Engineering, Jaipur)	Optimal Parameter Selection for Multi Blade Granite Block Cutting Machine Ensuring High Production

48

<b>Session VII B: EMI and EMC Technology(04:30 pm- 06:00 pm)</b>				
<b>Session Chair: Dr. Abhishek Sharma, ECE Dept. LNMIIT Jaipur</b>				
<b>Rapporteur: Dr. Ashok Kajla</b>				
Sr.No	ID	Time	Authors	Paper
33.	1570681672	04:30PM-04:45PM	Mamta Sharma, (Global Institute of Technology, India), Ajay Yadav, SatabakSinghal&Ritu Sharma (Malaviya National Institute of Technology Jaipur, India)	Design and Simulation of Flexible Substrate Based Wearable Antenna for WBAN Applications
34.	1570680778	04:45PM-05:00PM	Shivangi Sharma&JasdeepDhanoo (Indira Gandhi Delhi Technological University for Women, Delhi, India)	Analog Circuit Implementation of a Cortical Neuron
35.	1570687745	05:00PM-05:15PM	PreetiGoyal,(MAIT Sec-22 Rohini Delhi, India)	Controlling Asymmetry and Rising Ion in TFEs for Enhanced Reliability: A Review
36.	1570694209	05:315M-5:30PM	Anil singhparihar, Department of Computer Science and Engineering, Delhi Technological University, New Delhi, India	A Study on Image Mating Techniques
37.	1570681628	05:30PM-05:45PM	Aman Arora and Debadrata Sarkar (National Institute of Technology Durgapur, India), Sayantan Pal (CSIR-Central Mechanical Engineering Research Institute, India), Amit Kumar (CSIR-Central Mechanical Engineering Research Institute Durgapur, India), SoumenSen (CSIR - Central Mechanical Engineering Research Institute, India), Shikendu Roy (National Institute of Technology Durgapur, India)	A Multi-technique Measurement and Estimation of Volume for Pneumatic Artificial Muscle

49

		<b>5<sup>th</sup> IEEE International Conference</b>		
		<b>On</b>		
		<b>Recent Advances and Innovation in Engineering</b>		
		<b>(ICRAIE-2020)</b>		
		<b>(IEEE Record # 51050)</b>		
		<b>Presentation Schedule</b>		
		<b>Technical Sessions</b>		
		<b>Track 3 - Electrical Engineering</b>		
		<b>Track Chair: Dr. Virendra Saugani</b>		
		<b>Track Co-Chair: Dr. Praveen Sonwane</b>		
<b>Tuesday, Day 1: 1<sup>st</sup> December, 2020</b>				
Sr.No	ID	Time	Authors	Paper Title
<b>Session IC: Integrated Conventional and Renewable Power Generation (12:00 Noon-02:00 PM)</b>				
<b>Session Chair: Dr. Gagandeep Kaur, E &amp; IC Dept. Thapar University, Patiyala</b>				
<b>Rapporteur: Dr. Himani Goyal</b>				
1.	1570682774	12:00PM-12:15PM	Saksham Agarwal ; Mohammad SaadAlam ; Yasser Rafat ; Mahdi ShafiqiShemami (Aligarh Muslim University, India)	Data Analysis of Grid-Connected Solar Setup and Regression Based Predictive Models
2.	1570682794	12:15PM-12:30PM	Dr. Javed Khan Bhutto; Dr.Abdulwasa B. Barnawi; Mohammad Abdullah Mohammad Aldosari (King Khalid University, Abha, KSA, India); Dr.Sunil Kumar Gupta (Poojima University Jaipur, India)	Integration of Solar Photovoltaic Systems in Grid Using Loss Sensitivity Factor Method for Improvement of Voltage Profile
3.	1570682903	12:30PM-12:45PM	Smiti Jain (Reader SKIT M&G, India); Ramesh Pachar (SKIT, India); LataGidwani (Rajasthan Technical University, India)	Reliability Constrained Day Ahead Unit Commitment With Optimal Spinning Reserve Allocation for Solar Integrated Power System
4.	1570684412	12:45PM-1:00PM	Uma Yadav (J C Bose UST, YMCA,Faridkot, Haryana, India); Dr.Anju Gupta (J C Bose UST, YMCA,Faridkot, Haryana, India)	Current Harmonic Mitigation in Grid Tied Solar Photovoltaic System via PIES
5.	1570688086	01:00PM-1:15PM	DikshaMurlitharKharat (Government College Of Engineering, Aurangabad, India); Prof. M.S. Morey (Government College Of Engineering, Aurangabad, India)	Solar PV Fed Proposed Simple Boost Controlled Z-Source Inverter for Grid
6.	1570688295	01:15PM-1:30PM	AnushikaBandara (University of Moratuwa, Sri Lanka); KTM UdayangaHemapala (University of Moratuwa, Sri Lanka); AldiaHerath (University of Peradeniya, Sri Lanka)	Optimal Sizing and Economic Evaluation of a Photovoltaic Integrated Energy System - A Case Study for a Semi-Urban Area in Sri Lanka

69

# A Bowtie Shaped Frequency Reconfigurable Microstrip Patch Antenna with Wide Coverage Area

Pallav Rawal

Electronics and Communication Engineering  
Swami Keshvanand Institute of Technology, Management and  
Gramothan, Rajasthan, India  
prawal87@gmail.com

Sanyog Rawat

Electronics and Communication Engineering  
Manipal University Jaipur  
Rajasthan, India  
sanyog.rawat@jaipur.manipal.edu

**Abstract-** In this paper a bowtie shaped frequency reconfigurable microstrip patch antenna is proposed. The overall dimensions of antenna are  $10 \times 10 \times 1.59 \text{ mm}^3$ . The antenna is designed on FR4 substrate and simulated on CST microwave studio. A Coplanar waveguide (CPW) feed having conducting ground is used along with two PIN diodes and shorting pin. The antenna shows frequency reconfigurability with on-off state of diodes. The proposed design radiates at 4.55 GHz, 7.45 GHz, 4.51 GHz, and 6.88 GHz resonant frequency based on different switching state of diodes and the main lobe magnitude of far-field E-field pattern is more than 9 dBV/m. The 3 dB angular width is greater than  $230^\circ$  for majority of the cases. The proposed antenna is small in size and can be used for various wireless applications.

**Keywords-** Frequency reconfigurable antenna, Bowtie antenna, Wide beamwidth, PIN diode switching

## I. INTRODUCTION

Microstrip patch antenna are widely used in communication devices. Reconfigurable antennas have numerous advantages so the researchers are paying additional attention to them. These antennas can minimize fading effect, increase the system capacity and reduce co-channel interference [1]. The frequency reconfigurable antennas are very useful in small size communication devices where different frequencies are required. Many researchers have designed different types of frequency reconfigurable antenna for different frequency bands using different techniques. A. Bharti et.al. presented a dual port frequency reconfigurable antenna using square ring slot [2]. An ultra-wideband reconfigurable antenna with defected ground structure (DGS) [3], Multiband frequency reconfigurable antenna with defected ground structure [4] are presented and frequency reconfiguration is achieved using DGS and pin diode. Slotted patch antenna [5-6], loop antenna [7] and loop antenna with parasitic grounded strip [8] are proposed. Pin diodes are used as controlling element.

In this paper a bowtie shaped frequency reconfigurable microstrip patch antenna is presented. It is very small size frequency reconfigurable antenna. Antenna design is presented in section II. The effect of ground plane and shorting pin on return loss and radiation pattern is discussed in section III, result and discussion.

## II. ANTENNA DESIGN

Proposed antenna is designed on FR4 substrate of 1.59 mm thickness with 4.4 dielectric constant and 0.025 loss tangent. The overall dimensions are  $10 \times 10 \times 1.59 \text{ mm}^3$ . Both flags of bowtie antenna are fed by asymmetrical feed line at different point as shown in Fig. 1. In this design a conductor backed CPW [13] feed is used. A conducting sheet at the opposite side of substrate or below the CPW is fabricated. This sheet acts as the ground for the antenna. The ground plane at bottom side is shorted with the ground on top side used for coplanar waveguide feed. Bottom side ground is 0.5 mm above from feed edge and shorting pin is placed at 1.2 mm from feed edge. Due to shorting pin a shunt inductive effect [9-10] is introduced, so the resonant frequency can be shifted and radiation pattern will improve. Antenna size is also be reduced using shorting pin [11-12]. Two pin diodes are used for controlling the flow of current into the flags of bowtie antenna.

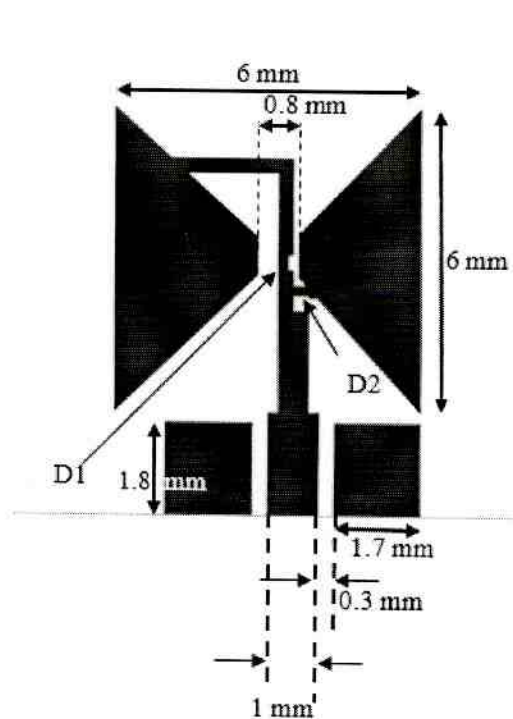


Fig. 1 (a)