Dhaka, Bangladesh 17-19 December 2020



**IEEE Catalog Number: CFP2068A-POD ISBN**:

978-1-6654-4661-7

## 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:
 CFP2068A-POD

 ISBN (Print-On-Demand):
 978-1-6654-4661-7

 ISBN (Online):
 978-1-6654-2254-3

#### **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



Paper ID	Paper Title	Page No
328	Analysis Performances of Permanent Magnet Synchronous Machines with Different Rotor Anisotropy for Variable Speed Drive Applications	1-4
365	Numerical Analysis of Light Absorption in Tapered Nanowire Based Perovksite Solar cell	5-8
368	A RNN Based Parallel Deep Learning Framework for Detecting Sentiment Polarity from Twitter Derived Textual Data	9-12
374	Comparative Wind Power Assessment by Weibull Distribution Function in Faridpur	13-16
385	Performance Assessment of Bi-facial PV Module Considering Cloud & Albedo	17-20
390	Agricultural Analysis and Crop Yield Prediction of Habiganj using Multispectral Bands of Satellite Imagery with Machine Learning	21-24
402	Home Automation System Using Gesture Pattern & Voice Recognition For Paralyzed People	25-28
408	Nested Antiresonant Hollow-Core Fiber with Ultra-Low Loss	29-32
412	Summarizing Online Product Reviews in Bengali Based on Similarity Using Sequence to Sequence RNNs	33-36
415	Multiple Systems Integration with Solar DC Micro-Off- Grid by using Energy-Efficient 3-phase VFD Inverter for Small Agro-Industrial Applications	37-40
419	HF Transformer Linked Soft Switching PWM Full-Bridge DC-DC Power Converter for Portable Arc Welding Machine for Grid and PV Applications	41-44
422	Effects of Anti-reflection Coating and Plasmonic Nanoparticle on the Performance Characteristics of Three Terminal Bipolar Transistor Architecture Based Solar Cell	45-48
432	Minimally produced inkjet-printed tactile sensor model for improved data reliability	49-52
433	Analog Pulse Based Data Transmission for Internet-of- Things Applications	53-56
434	Stability preservation of frequency-limited balancing based reduced order model of large scale index-1 descriptor system	57-60
435	Analytical Loss Model of Modular Multilevel Converter with Reduced Switching Topology	61-64
663	A Transfer Learning Based Approach for Skin Lesion Classification from Imbalanced Data	65-68
671	Smart Parking System Using MobileNet and Single Shot Detection Algorithm and IoT	69-72

Solar PV Integrated Distributed Generation System Protection with Bridge Current Limiter Controller	73-76
A Robust CNN Framework with Dual Feedback Feature Accumulation for Detecting Pneumonia Opacity from Chest X-ray Images	77-80
S-Parameters Based Channel Characterization Using Ultra- Wideband Pulse Signal	81-84
Channel Decoding Using Cyclic Elimination Algorithm for Pulse Based UWB Transceiver	85-88
Gain Improvement of a Circularly Polarized Metamaterial- Based Antenna Using Square Ring-Shaped Defected Ground Structure	89-92
IoT Based Smart Energy Monitoring and Warning System	93-96
Dual Band Rectangular Slotted Electromagnetic Band Gap Structure Design for improving Microstrip Patch Antenna Performance	97-100
Comparative Study of Electromechanical Behavior of Lead- Free Sn-Al Solder and Traditional Lead Solder for High Temperature Applications	101-104
Design and Construction of a Radio Controlled Floating Waste Collector Robot	105-108
A Low-Cost Dual Band Notched Planar Patch Antenna for Ultra-Wideband Applications	109-112
Integral Adaptive Controller Design for Single-Phase-Grid-Connected Solar PV Systems with Output LCL Filters	113-116
Simulation Framework for Performance Evaluation of HfZrOx Based Ferroelectric Synaptic Devices	117-120
Traffic Surveillance using Vehicle License Plate Detection and Recognition in Bangladesh	121-124
Computational Study of Electron Transport Properties in Graphene Nanoribbon and Nanoribbon-based Resonant Tunneling Diodes	125-128
Identification and Analysis of Risk Factors of Lower Back Pain Using Machine Learning Approaches	129-132
Prediction and Rule Generation for Leukemia using Decision Tree and Association Rule Mining	133-136
Modulated Model Predictive Current Control of Three- Level NPC Inverter with Overmodulation Capability	137-140
Electronic properties of Ge/2D-GaP heterobilayer: A first-principles investigation	141-144
Hardware Trojan Detection Using Slope of Path Delay Trend: Combination of Clock and DC Sweep	145-148
An improved deep learning based classification of human white blood cell images	149-152
	Protection with Bridge Current Limiter Controller A Robust CNN Framework with Dual Feedback Feature Accumulation for Detecting Pneumonia Opacity from Chest X-ray Images S-Parameters Based Channel Characterization Using Ultra- Wideband Pulse Signal Channel Decoding Using Cyclic Elimination Algorithm for Pulse Based UWB Transceiver Gain Improvement of a Circularly Polarized Metamaterial- Based Antenna Using Square Ring-Shaped Defected Ground Structure  IoT Based Smart Energy Monitoring and Warning System Dual Band Rectangular Slotted Electromagnetic Band Gap Structure Design for improving Microstrip Patch Antenna Performance Comparative Study of Electromechanical Behavior of Lead- Free Sn-Al Solder and Traditional Lead Solder for High Temperature Applications Design and Construction of a Radio Controlled Floating Waste Collector Robot A Low-Cost Dual Band Notched Planar Patch Antenna for Ultra-Wideband Applications Integral Adaptive Controller Design for Single-Phase-Grid- Connected Solar PV Systems with Output LCL Filters Simulation Framework for Performance Evaluation of HfZrOx Based Ferroelectric Synaptic Devices Traffic Surveillance using Vehicle License Plate Detection and Recognition in Bangladesh Computational Study of Electron Transport Properties in Graphene Nanoribbon and Nanoribbon-based Resonant Tunneling Diodes Identification and Analysis of Risk Factors of Lower Back Pain Using Machine Learning Approaches Prediction and Rule Generation for Leukemia using Decision Tree and Association Rule Mining Modulated Model Predictive Current Control of Three- Level NPC Inverter with Overmodulation Capability Electronic properties of Ge/2D-GaP heterobilayer: A first- principles investigation Hardware Trojan Detection Using Slope of Path Delay Trend: Combination of Clock and DC Sweep An improved deep learning based classification of human

Application of a Complementary Split Ring Resonator Based Biosensor for Detection of Micromolar Glucose Concentrations in Aqueous Solution	153-156
Effect of capillary parameters on the performance of modified negative curvature hollow core fibers	157-160
Android Based Low Cost Sitting Posture Monitoring System	161-164
Modified bridge type fault current limiter based protective framework for IBDG system	165-168
Lung Opacity Classification With Convolutional Neural Networks Using Chest X-rays	169-172
MCPWM Based 21 Level Inverter Design for Grid	173-177
Electrical Power Consumption Profile Modelling of Air	178-181
Selective Voltage Vectors Based Predictive Torque Control of Five-Phase Induction Motor Drive	182-185
Bangla Sign Digits: A Bangla Sign Digits Dataset for Real Time Hand Gesture Recognition	186-189
Design and Performance Analysis of A Low Power, Low Noise 1.6GHz Charge Pump Integer-N PLL in Different PVT Corners	190-193
A Patient Centric Agent Assisted Private Blockchain on Hyperledger Fabric for Managing Remote Patient Monitoring	194-197
Public Sector Corruption Analysis with Modified K-means Algorithm Using Perception Data	198-201
Numerical Analysis of Mach-Zehnder Interferometer based Optical Sensors incorporating WGM Ring Resonator	202-205
An EMD-based Method for the Detection of Power Transformer Faults with a Hierarchical Ensemble Classifier	206-209
A Machine Learning Approach to Recognize Speakers Region of the United Kingdom from Continuous Speech Based on Accent Classification	210-213
Deep Learning Approach Combining Lightweight CNN Architecture with Transfer Learning: An Automatic Approach for the Detection and Recognition of Bangladeshi Banknotes	214-217
Bengali Handwritten Compound Characters Recognition by Utilizing Transfer Learning	218-221
Computer Aided Diagnosis of Thyroid Disease Using Machine Learning Algorithms	222-225
Attention Based LSTM CNN for sentimentextraction from Bengali Texts	226-229
	Based Biosensor for Detection of Micromolar Glucose Concentrations in Aqueous Solution  Effect of capillary parameters on the performance of modified negative curvature hollow core fibers  Android Based Low Cost Sitting Posture Monitoring System  Modified bridge type fault current limiter based protective framework for IBDG system  Lung Opacity Classification With Convolutional Neural Networks Using Chest X-rays  MCPWM Based 21 Level Inverter Design for Grid Connected PV System  Electrical Power Consumption Profile Modelling of Air Conditioner for Smart Grid Load Management Selective Voltage Vectors Based Predictive Torque Control of Five-Phase Induction Motor Drive  Bangla Sign Digits: A Bangla Sign Digits Dataset for Real Time Hand Gesture Recognition Design and Performance Analysis of A Low Power, Low Noise 1.6GHz Charge Pump Integer-N PLL in Different PVT Corners  A Patient Centric Agent Assisted Private Blockchain on Hyperledger Fabric for Managing Remote Patient Monitoring Public Sector Corruption Analysis with Modified K-means Algorithm Using Perception Data  Numerical Analysis of Mach-Zehnder Interferometer based Optical Sensors incorporating WGM Ring Resonator  An EMD-based Method for the Detection of Power Transformer Faults with a Hierarchical Ensemble Classifier  A Machine Learning Approach to Recognize Speakers Region of the United Kingdom from Continuous Speech Based on Accent Classification  Deep Learning Approach Combining Lightweight CNN Architecture with Transfer Learning: An Automatic Approach for the Detection and Recognition of Bangladeshi Banknotes  Bengali Handwritten Compound Characters Recognition by Utilizing Transfer Learning  Computer Aided Diagnosis of Thyroid Disease Using Machine Learning Algorithms  Attention Based LSTM CNN for sentimentextraction from

775	Automated Recognition of Rice Grain Diseases Using Deep Learning	230-233
778	A Comparative Study of CNN Transfer Learning Classification Algorithms with Segmentation for COVID- 19 Detection from CT Scan Images	234-237
787	Subject Independent Classification of Hand Gesture from sEMG using an Approximate Entropy Based Approach	238-241
791	Design of a Sustainable Electric Boat with Renewable Energy Based Charging System	242-245
792	Identifying the Stability of Couple Relationship Applying Different Machine Learning Techniques	246-249
793	High-Performance Object Recognition by Employing a Transfer Learned Deep Convolutional Neural Network	250-253
794	48V Three-Phase Induction Motor Development for a Portable Industrial Vacuum Cleaner by using LV VFD Controller	254-257
796	Electronic and Optical Properties of BeO Co-doped 2D GaN using First-principles	258-261
798	Fault Characteristic of a Power Transformer in Bangladesh Power Grid	262-265
799	Quantum transport of Electrons in Molybdenum Diselenide Nanoribbon	266-269
800	Social Media Content Categorization Using Supervised Based Machine Learning Methods and Natural Language Processing in Bangla Language	270-273
802	Aperture Averaged BER Performance Analysis of a non- Hermitian coherent optical OFDM FSO system with polarization diversity	274-277
807	An Effective Short-Term Load Forecasting Methodology Using Convolutional Long Short Term Memory Network	278-281
808	Connecting A Nuclear Power Plant to A Weak Grid	282-285
809	Sensitivity Analysis of a Cs2AgBiBr6 X-ray Image Detector	286-289
813	Frequency Stability Enhancement of a Large-Scale PV Integrated Grid	290-293
816	Exploring the Prospect of FinFET and CNTFET in Implementation of a Two-Stage Operational Amplifier	294-297
817	Comparative Analysis of MOSFET and FinFET Based Full Protected Soft Error Tolerant Latch	298-301
821	Performance Analysis of Floating Bouy Point Absorber: In Perspective of Variability Reduction	302-305
822	Feedback Path Selection for Load Frequency Control of Interconnected Power Systems	306-309
823	An IoT Based Real-time Railway Fishplate Monitoring System for Early Warning	310-313

825	Design of a Low Power Off-Grid Photovoltaic Water Pumping System for Rural Areas	314-317
826	Development of an Irreversible Electroporation (IRE) Device for Vesicle Ablation	318-321
827	Load Forecasting Based Dynamic Pricing Model for Power Sharing in Solar Home Systems	322-326
828	Static Detection of Malicious Code in Programs Using Semantic Techniques	327-330
830	GIC Effects on 400 kV Transmission Lines of Bangladesh Power System	331-334
835	A Zigbee Based Centralized Health Monitoring Wireless Network for Transformers in Smart Grid	335-338
841	Nanostructured-Gratings for Enhanced Light Absorption in Ultra-Thin Crystalline Si Solar Cells	339-342
844	A Deep Learning Based Energy Efficient Downlink Power Control Mechanism for Cellular Networks	343-346
846	Design of a Built-in-Self-Test Implemented AES Crypto Processor ASIC	347-350
847	Effect of Covid-19 and Lock-down on the Electricity Sector in Bangladesh	351-354
848	Numerical Data Extraction from ECG Paper Recording Using Image Processing Technique	355-358
849	Frequency Tunability Study of an SRR and SNG Metamaterial Integrated UWB Antenna	359-362
851	Classification of Osteosarcoma Tumor from Histological Image Using Sequential RCNN	363-366
852	Design of a Broadband Hybrid Plasmonic Waveguide for High Bulk Index Sensitivity	367-370
853	Surface Enhanced Raman Scattering of Silver Nanoparticles with Slot Waveguide	371-374
854	Verbalink-A Gesture Based Speech Generating Device	375-378
856	Breast Cancer Classification Using Ensemble Hard Voting with Random Under-Sampling	379-382
860	Molecular Dynamics Study in Diffusion Weighted MRI - A computational model approach	383-386
861	A Wavelet-CNN Feature Fusion Approach for Detecting COVID-19 from Chest Radiographs	387-390
862	Effect of Vacancy on Electronic Properties of MX2 (M = Mo, W and X = S, Se) Monolayers	391-394
865	Detection of Myocardial Infarction from ECG Signal Through Combining CNN and Bi-LSTM	395-398
866	Prospect of Demand Side Management in Bangladesh: A Survey on Residential Application	399-402
867	Transient and Steady State Characteristics of Induction Motor Drive Using DTC-SVM Technique For EV Applications	403-406

868	Dual Ring Complementary Split Ring Resonator (DR-CSRR) Sensor For Non-invasive Glucose Sensing Application.	407-410
870	Performance Comparison between Synchronous Condenser and Static VAR Compensator to Improve System Strength in a Wind Dominated Power Grid	411-414
874	Non-Ballistic Conduction in Bundle of Single-Wall Carbon Nanotubes with Disorder	415-418
875	Effectiveness of Data Driven Diagnosis of Heart Disease	419-422
877	Bengali Sign Language Characters Recognition by Utilizing Transfer Learned Deep Convolutional Neural Network	423-426
879	Accurate Recognition of Leukemia Sub-types by Utilizing a Transfer Learned Deep Convolutional Neural Network	427-430
881	Handwritten Numerals Recognition by Employing a Transfer Learned Deep Convolution Neural Network for Diverse Literature	431-434
885	The Net Metering Guideline of Bangladesh- Potential and Way Forward	435-438
886	Parametric Image-based Breast Tumor Classification Using Convolutional Neural Network in the Contourlet Transform Domain	439-442
887	Performance Analysis of GMSK and Chirp-Binary Orthogonal Keying in AWGN and Multipath Fading Channels	443-446
888	Design and Investigation of a Low-Loss Surface Plasmon Resonance based PCF Biosensor with a Gold Coated Structure	447-450
890	Design and Performance Assessment of a Locally Developed Solar Pipe Light	451-454
891	Determination of Initial Projectile Velocity in the Presence of Static Fields Using Deep Actor Critic Method	455-458
892	Harmonic Reduction for Non-linear Loads using Simulink Based Filter Design	459-462
894	Deep Convolutional Neural Network Based Sleep Apnea Detection Scheme Using Spectro-temporal Subframes of EEG Signal	463-466
895	A Blockchain based Cost effective Digital Voting System using SideChain and Smart Contracts	467-470
896	Automatic Fire Monitoring System In Textile Industry	471-474
899	A Novel Photonic Crystal Fiber Biosensor Using Single Hexagonal Lattice Structure	475-478

900	Analysis of Continuous Motor Nerve Conduction Velocity Distribution from Compound Muscle Action Potential	479-482
903	Machine Learning to Predict COVID-19 and ICU Requirement	483-486
905	Dual-Side Polished SPR Biosensor with Wide Sensing Range	487-490
909	An Automatic Ocular Disease Detection Scheme from Enhanced Fundus Images Based on Ensembling Deep CNN Networks	491-494