

# **2016 International Conference on Innovations in Science, Engineering and Technology (ICISSET 2016)**

**Dhaka, Bangladesh  
28-29 October 2016**



**IEEE Catalog Number: CFP16J26-POD  
ISBN: 978-1-5090-6123-5**

**Copyright © 2016 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:	CFP16J26-POD
ISBN (Print-On-Demand):	978-1-5090-6123-5
ISBN (Online):	978-1-5090-6122-8

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Table of Content

Paper ID	Title
6	Hand Sign Language Recognition for Bangla Alphabet using Support Vector Machine <i>Md. Azher Uddin, Shayhan Chowdhury</i>
20	An Integrated Approach to Classify Gender and Ethnicity <i>Md. Azher Uddin and Shayhan Chowdhury</i>
21	Prospects and Potential of Biogas Technology in Bangladesh <i>Md. Rafsan Nahian and Md. Nurul Islam</i>
34	Land Cover Change Detection Using GIS and Remote Sensing Techniques: A Spatio-Temporal Study on Tanguar Haor, Sunamganj, Bangladesh <i>Md. Inzamal Haque and Rony Basak</i>
56	Design Evolution of Planar Slot Antennas for Ultra-wideband Wireless Communication <i>Rezaul Azim and Mohammad Tariqul Islam</i>
66	Design & Implementation of a Digital Calling Bell with Door Lock Security System using Fingerprint <i>Mohammed Abdul Kader, Md. Yousuf Haider, Md. Rezaul Karim, Md. Saiful Islam and Mohammad Mamun Uddin</i>
72	Short Term Wind Speed Forecasting Using Artificial Neural Network: A Case Study <i>Hasan Masrur, Meas Nimol, Mohammad Faisal and Sk. Md Golam Mostafa</i>
76	Design of an Universal Numeric Segmented Display and Implementation of its Decoder Circuit in FPGA <i>Mohammed Abdul Kader, Kazi Sahadat Hossain, Mohammad Serajum Munir, Rajvi Sutra Dhar and Md. Arifur Rahaman</i>
77	Human Facial Feature Detection Based on Skin Color and Edge Labeling <i>Md. Khaliluzzaman, Md. Faisal Alam and Tanveer Ahsan</i>
79	Effect of Acceptor Concentration on Performance of CdTe Solar Cell from Numerical Analysis <i>M.A.A Noman, M.S. Islam, M.J. Abden, M. Arifuzzaman and M.A. Islam</i>

Paper ID	Title
80	Search and Rescue System for Alive Human Detection by 44 Semi-Autonomous Mobile Rescue Robot <i>Zia Uddin and Mojaharul Islam</i>
81	Analysis of Charge-Shared Matchline Sensing Schemes and Current Race 49 Scheme in High-Speed Ternary Content Addressable Memory (TCAM) <i>Raqqib Bin Kadir, Ahmed Selim Anwar and Muntasim-Ul Haque</i>
89	Switching Signal Reduction of Load Aggregator with Optimal Dispatch 53 of Electric Vehicle Performing V2G Regulation Service <i>M. Shafiul Alam, Md Shafiullah, Md Juel Rana, M. S. Javaid, Usama Bin Irshad and Muhammad Athar Uddin</i>
90	Optimal Placement of Phasor Measurement Units for Transmission Grid Observability 57 <i>Md Shafiullah, Md Juel Rana, M. Shafiul Alam and Muhammad Athar Uddin</i>
91	Effect of Higher Carrier Injection Rate on Charge Transport and 61 Recombination In Mixed-Host Organic Light Emitting Diode <i>Riku Chowdhury, Md. Rashedul Haq, Md. Sarwar Uddin Chowdhury, Sharmin Afrose and Sukanta Paul</i>
93	Solid State Lighting, A solution for Power Crisis in Bangladesh 65 <i>K. M. Ahsan -Uz- Zaman, Kafi Mohammad Ullah, Md. Shaidul Kabir Milon, A S M Sayam and Abdul Wahed</i>
100	Design of N-Segmented Display System for Bengali Vowels 69 <i>Saif Hannan and Ahasan Ullah Shohag</i>
103	A Comparative Analysis Among PWM Control Z-source Inverter with 73 Conventional PWM Inverter for Induction Motor Drive <i>Md Khurshedul Islam, Md Mustafa Zaved, Air Mohammad Siddiky and Khandakar Abdulla Al Mamun</i>
107	Optoelectronic Performance of Vertical Cavity Surface Emitting InGaAs/InP QW Laser in non-conventional orientation 79 <i>Sourav Roy, Md. Imtiaz Kabir and K.M Abdullah Al-Mamun</i>
110	Predicting the Popularity of Online News using Gradient Boosting Machine 83 <i>Md. Taufeeq Uddin, Muhammed Jamshed Alam Patwary, Tanveer Ahsan and Mohammed Shamsul Alam</i>
116	Combining a Rule-based Classifier with Weakly Supervised Learning for Twitter Sentiment Analysis 88 <i>Umme Aymun Siddiqua, Tanveer Ahsan and Abu Nowshed Chy</i>

Paper ID	Title
127	Design, Fabrication and Performance Evaluation of a Three Electrode ECG Recorder 92 <i>Mehdi Hasan Chowdhury, Quazi Delwar Hossain, Pradipta Saha and Md. Mushfiqur Rahaman</i>
130	Selection of Better Strategy for Self-Organized Data Aggregation 96 Techniques using Evolutionary Game Theory <i>Md.Salehin Ferdous Kader, Mir Muntasir Hossain, Sanchita Ghose and Kazi Rehnuma Zafreen</i>
132	Effects of Buffer Size and Mobility Models on the Optimization of Number of Message Copies for Multi-Copy Routing Protocols in Scalable Delay-Tolerant Networks 100 <i>Md. Sharif Hossen, Md. Tofael Ahmed and Muhammad Sajjadur Rahim</i>
135	Adopting Factors of Electronic Human Resource Management: Evidence from Bangladesh 104 <i>Abdul Kadar Muhammad Masum, Md Golam Rabiul Alam, Mohammed Shamsul Alam and M. A. K. Azad</i>
138	Design of a Low-cost lighting System for the Rural Areas of Bangladesh 108 <i>Mohammad Salman Yasin, Mohammad Sharier Islam, Tanmoy Biswas and M. Saidur Rahman</i>
140	Logical Clipper and De-clipper Technique to Reduce PAPR from OFDM Signal 112 <i>Md. Salim Raza, Md. Mheddi Hasan, Md. Obidul Islam and Md. Shahjahan Ali</i>
147	Bio Inspired Cyber Security Architecture for Smart Grid 116 <i>Muhammad Mostafa Amir Faisal, Muhammad Ariful Islam Chowdhury</i>
149	GFCC-Based Robust Gender Detection 121 <i>Atiqul Islam</i>
150	Frequency Domain Linear Prediction-Based Robust Text-Dependent Speaker Identification 125 <i>Atiqul Islam</i>
152	Automated Weather Event Analysis with Machine Learning 129 <i>Nasimul Hasan, Md. Taufeeq Uddin and Nihad Karim Chowdhury</i>
160	Bomb Disposal Robot 134 <i>Abdul Kadir Bin Motaleb, Mohammad Busayeed Hoque, Md. Ahsanul Hoque</i>
162	Structural, Dielectric and Conductivity Studies of Ni-Cu-Cd Ferrite Nanoparticles 139 <i>M. Arifuzzaman, M. J. Abden, S. K. Ahmed and M. B. Hossen</i>

Paper ID	Title
163	A Compact Patch Antenna for Ultrawideband Application 143 <i>Md. Tarikul Islam, Md. Samsuzzaman, M. M. Islam, M.T. Islam and M.Z. Mahmud</i>
165	Development of a Telemedicine Model with Low cost Portable Tool Kit for Remote Diagnosis of Rural People in Bangladesh 147 <i>Uzzal Kumar Prodhan, Mohammad Zahidur Rahman, Ahsin Abid, Mohtasim Bellah</i>
168	Human Activity Recognition using Depth Body Part Histograms and Hidden Markov Models 151 <i>Md. Zia Uddin, Jim Tørresen, Taskeed Jabid</i>
173	Financial Instability Analysis using ANN and Feature Selection Technique: Application to Stock Market Price Prediction 155 <i>Risul Islam Rassel, Nasrin Sultana, Nasimul Hasan</i>
178	Implementation of 1xN Router Based on Mach-Zehnder Interferometer Electro-Optic Switch 159 <i>Rabeya Khatun, A. Zahed Chowdhury</i>
183	An Analysis of the Problems for Health Data Integration in Bangladesh 165 <i>Shahidul Islam Khan; Abu Sayed Md. Latiful Hoque</i>
184	A Prospective Model of Bangladesh Electricity Market 169 <i>S. M. G. Mostafa, Jai Govind Singh, H. Masrur, Md. Shahid Ullah</i>
190	Design & Implementation of an UAV (Drone) with Flight Data Record 174 <i>Tuton Chandra Mallick, Mohammad Ariful Islam Bhuyan, Mohammed Saifuddin Munna</i>
191	Performance Measurement of Different Backoff Algorithms in IEEE 802.15.4 180 <i>Md. Mohibur Rahaman, Kazi Ashrafuzzaman, Mohammad Sanaullah Chowdhury, Mohammad Osiur Rahman</i>
199	A Compact Triangular Shaped Microstrip Patch Antenna with Triangular Slotted Ground for UWB Application 184 <i>M. A. Ullah, F. B. Ashraf, T. Alam, M. S. Alam, S. Kibria, M. T. Islam</i>
203	Rotation Invariant Power Line Insulator Detection Using Local Directional Pattern and Support Vector Machine 188 <i>Taskeed Jabid, Md. Zia Uddin</i>
211	Occlusion Handling and Human Detection Based on Histogram of Oriented Gradients for Automatic Video Surveillance 192 <i>Shayhan Ameen Chowdhury, Mohammed Nasir Uddin, Mir Md. Saki Kowsar, Kaushik Deb</i>

Paper ID	Title
212	Grid-voltage Synchronization Algorithm for Grid Tied Renewable Energy Sources During Adverse Grid Fault Condition <i>Khaled Syfullah Fuad, Md Rahmat Ullah Chowdhury, Eklas Hossain</i> 196
219	Experimental Verification of Regenerative Braking Characteristics by Applying Different Motor Armature Voltage <i>S.M. Baque Billah, Kazi Khairul Islam, and Shahadat Hossain</i> 201
224	Manipulation of structural, electrical and magnetic properties on zinc substitution in cobalt zinc nanoferrite <i>Shamima Nasrin, Muhammad Moazzam Hossen, Faruque Chowdhury and Manjura Hoque</i> 205
228	HSV and Template Matching Based Bengali Road Sign Recognition Technique <i>Mohsina Binte Asad, Fatema Jannat Sharna, Nashid Alam and M. Jahirul Islam</i> 209
236	Analytical Study of High Efficient Cu(In,Ga)Se <sub>2</sub> Solar Cell with In <sub>2</sub> S <sub>3</sub> Buffer Layer <i>Mohammad Sijanur Rahaman Robin, Khurshedul Islam Meheraj, MD. Shakawat Zaman Sarker</i> 213
254	Segmentation Analysis on Magnetic Resonance Imaging (MRI) with Different Clustering Techniques: Wavelet and BEMD <i>Lamia Iqbal Dolon, Aditi Ghosh, Touhidul Alam, Mohammed Shamsul Alam, Md. Khaliluzzaman, Ahmed Imteaj and Mohammad Mahadi Hassan</i> 217
256	Variation of structural and mechanical properties as 20 wt% ZrO <sub>2</sub> added to Al <sub>2</sub> O <sub>3</sub> for biomedical application <i>Moazzam Hossen, Shamima Nasrin, Dr. Faruque-Uz-Zaman Chowdhury and A. K. M. Abdul Hakim</i> 221
261	Solar Energy as an Alternative of IPS in Bangladesh <i>Anis Haque</i> 226
266	Design and Simulation of Piezoelectric Cantilever Beam Based on Mechanical Vibration for Energy Harvesting Application <i>Md. Naim Uddin, Md. Shabiul Islam, Jahariah Sampe, Sawal H. Md Ali, M.S. Bhuyan</i> 230
267	A Comprehensive Study and Performance Based Evaluation on Routing Protocols of WiMAX <i>Farzana Shabnam, Aparna Saha, Rifat Binte Sobhan, Tanmoy Debnath</i> 234
278	Modeling of Highly Efficient Molybdenum Telluride Solar Cells with Zinc Telluride as a Novel BSF <i>Mrimoy Dey, Maitry Dey, M. A. Matin and Nowshad Amin</i> 238