# 2016 9th International Conference on Electrical and Computer Engineering (ICECE 2016)

Dhaka, Bangladesh 20 – 22 December 2016



**IEEE Catalog Number: ISBN:** 

CFP1668A-POD 978-1-5090-2964-8

## 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:
 CFP1668A-POD

 ISBN (Print-On-Demand):
 978-1-5090-2964-8

 ISBN (Online):
 978-1-5090-2963-1

#### 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



## **ICECE 2016 TECHNICAL PROGRAM**

	21 D 1 2017 W 1 1 700 00 10	00)
	21 December 2016, Wednesday (09:00-10 Session: A1 Power Electronics- I	:00)
	Room No.: ECE 625	
	Session Chair: Kazi Mujibur Rahman, Dept. of F	EEE, BUET
8	Input Switched Single Phase SEPIC Controlled Rectifier With Improved Performances38	Md. Shamsul Arifin and Mohammad Jahangir Alam
18	Grid Current Regulation of a Three-Phase CSI Using a Backstepping ControllerN/A	Tushar Kanti Roy, Md. Ferdous Pervej and Farha Khushi Tumpa
81	A Single Phase Two Switch SEPIC PFC Rectifier151	Kazi Khurshidi Haque Dia and Mohammad Ali Choudhury
210	Implementation of a Three Phase Inverter for BLDC Motor Drive337	Adnan Mohammad, Md. Anwarul Abedin and Md. Ziaur Rahman Khan
	21 December 2016, Wednesday (09:00-10	•00)
	Session: B1 VLSI	
	Room No.: ECE 627	
	Session Chair: Pran Kanai Saha, Dept. of EEI	
12	Associative Memory Algorithm for Visual Pattern Recognition with Memristor Array and CMOS Neuron42	Anik Chowdhury, Mrinmoy Sarkar, Aqeeb Iqbal Arka and A.B.M. Harun-Ur Rashid
21	A Wide Tuning Range and Constant Gain VCO for Radio Frequency Application50	Abdullah Ibn Abbas and A.B.M. Harun-Ur Rashid
127	A Memristor-based 6T1M Hybrid Memory Cell without State Drift during Successive Read202	Mohammad Nazmus Sakib, Rakibul Hassan and Satyen Biswas
147	A Novel Low Buffered Optimized Solid State Drive Controller234	Ratul Das, Baishakhi Rani Biswas, A.B.M. Harun-Ur Rashid and Md. Anwarul Abedin
	21 December 2016, Wednesday (09:00-10	:15)
	Session: C1 Sensors and Measurement	
	Room No.: ECE 632	
	Session Chair: Md. Shafiqul Islam, Dept. of EE	
72	A Smart Metering System for Wireless Power Measurement with Mobile Application131	Kazi Tajmul Islam, A. M. Jahirul Islam, Syed R. H. Pidim, Akramul Haque, Md. Tawsif H. Khan, Sayidul Morsalin
76	Microcontroller Based Earthquake Detection System for Spontaneous Cut-off of Domestic Utility Lines for Safety Measures139	Swapnil Sayan Saha, Shekh Md. Mahmudul Islam, Anindita Mashsharat
186	Analysis of Path Loss Characteristics in Body Area Network for Different Physical Structures299	Hasanur Rahman Chowdhury, Md. Sahil Hassan, and Anis Ahmed
197	Energy Harvesting Based on Cantilever Beam for Different Piezoelectric Materials from Acoustic Vibration by Simulation Process318	Mohammad Rayhan Ahmad, and Md Rifat Al Amin Khan, Md Ataur Rahman
340	Design and Implementation of Home Security System using PZT554	Sadeka Sultana, Tawhida Akand and Mrinmoy Dey

21 December 2016, Wednesday (09:00-10:00) Session: D1 Engineering Education Room No.: ECE 634 Session Chair: M M Shahidul Hassan, Dept. of EEE, East West University		
63	Examining the Inaccuracies of Citations and Referencing: A Case of a Computer Science and Engineering Journal106	Sujit Kumar Basak
109	Incorporating Advanced Power Electronic Concepts with Hands-on Emphasis in a Low-cost Power Engineering Curriculum178	M.M. A. Rahman
166	Prediction of HSC Examination Performance using Socioeconomic, Psychological and Academic Factors263	A T M Shakil Ahamed, Navid Tanzeem Mahmood and Rasheder M Rahman
199	Teaching Prim's Algorithm via Mobile AppN/A	Debzani Deb and Mohammad Fuad

## 21 December 2016, Wednesday (10:00-10:30) Tea Break

## 21 December 2016, Wednesday (10:30-11:30) Plenary Session - I

Challenges and Opportunities in Grid Connected Commercial Scale Solar PV and Wind Farms

Speaker: Syed Islam, Dept. of ECE, Curtin University, Perth, Australia Room No: ECE 625

Session Chair: S. Shahnawaz Ahmed, Dept. of EEE, BUET

Sassi	21 December 2016, Wednesday (11:30-01:00) Session: A2 Power Systems - I Room No.: ECE 625 Session Chair: Md. Quamrul Ahsan, Dept. of EEE, Green University of Bangladesh		
28	Precise Loss Evaluation Method of CHBMC with Reduced Switching Strategy for Direct Integration with Medium Voltage Smart Microgrids62	Md. Mazharul Islam, A. M. Mahfuz- Ur- Rahman and Md. Rabiul Islam	
96	A Coordinated Approach for Frequency Control of Zero Emission Based Smart PV-Wind-Battery Power System166	Saeed Sepasi, Abdul Motin Howlader, Ehsan Reihani and Leon Roose	
165	Characterization of Voltage Sag Based on Point-on-Wave259	Most. Sumaiya Hasan, Kashem Muttaqi and Abdesselam Bouzerdoum	
211	Frequency Characterization of Bangladesh Power System341	Md Haque and A.H. Chowdhury	
259	A Phase-Locked Loop Based Technique for Accurate Estimation of Grid Voltage Fundamental Parameters385	S. M. Kamruzzaman, Ausmita Sarker, Rahul Ghosh and Md. Shamim Reza	
321	Study of Blackout Prevention of a Power System519	Jubair Yusuf, Fuad Sakib and Q. Ahsan	

	21 December 2016, Wednesday (11:30-01:00) Session: B2 Biomedical Engineering Room No.: ECE 627 Session Chair: M. Rezwan Khan, Dept. of EEE, UIU		
190	Designing a transcranial magnetic stimulator coil for deep brain stimulation303	Md Mahmudul Hasan, Shahed Md. Abu Sufian, Hasan Mehdi, Khondkar Siddique-e-Rabbani	
273	Bandwidth Enhancement of a Compact Planar Antenna for Wireless Capsule Endoscopy411	Farhadur Arifin and Pran Kanai Saha	
284	Discrimination of Focal and Non-Focal EEG Signals using Entropy-based Features in EEMD and CEEMDAN Domains435	Anindya Bijoy Das, Mohammed Imamul Hassan Bhuiyan	
289	Miniaturized Body Implantable PIFA Operates in MICS-Band and SAR Analysis at Brain, Breast and Muscle of a Human Phantom Model443	Sadia Sultana, Raja Rashidul Hasan, M. Mohiuddin Miran, Tonmay Kumar Mondal, Shafkat Hossain	
295	Analysis of Mechanical and Micro-Structural Properties of Trabecular Bones with Statistical Review of Osteoporosis among Females in Bangladesh459	Atia Rahman, Shamimur Rahman Akanda, Raihan Hussain, Monon Mahboob, Md. Ashiqur Rahman	
297	Wavelet Coherence Based Channel Selection for Classifying Single Trial Motor Imagery467	Simanto Saha, Khawza I. Ahmed, Raqibul Mostafa	

21 December 2016, Wednesday (11:30-01:00) Session: C2 Wireless Communication and Network- I Room No. ECE 333 Session Chair: A B M Siddique Hossain, Dept. of EEE, AIUB		
38	Traffic Modelling of Low Dense Femtocellular Network74	Jesmin Akhter, Md Islam and M Amin
144	Security in Multiple Keyhole MIMO Channels230	Rezwana Sultana, Md. Zahurul Islam Sarkar and Md. Selim Hossain
282	FCSEA: A Floodless Carrier-grade Scalable Ethernet Architecture427	A S M Asadujjaman, Shafika Showkat Moni and Mohammad Shah Alam
308	Impact of Phase Offset and Fading in Full Duplex MIMO System Under Antenna Cancellation495	Md. Rayhan Khan and Md. Forkan Uddin
354	On TDMA based Hybrid Channel MAC Protocol for Underwater Sensor Networks574	Md. Ibrahim Ibne Alam and Md. Farhad Hossain
356	An Efficient Cooperative MAC Protocol for Enhancing QoS of IEEE 802.11e EDCA in Saturated Conditions578	Jaya Roy, Abubakar Siddik, Shafika Showkat Moni and Mohammad Shah Alam

21 December 2016, Wednesday (11:30-01:00) Session: D2 Photonics Room No. ECE 634 Session Chair: Md. Saiful Islam, HCT, BUET		
79	Reduction of Detection Volume in Total Internal Reflection Fluorescence Microscopy Using Graphene143	Shiekh Zia Uddin and Muhammad Anisuzzaman Talukder
86	Analysis of a Silica Cladded Silicon Nanowire Having a Deep Sub-Wavelength Central Air Hole159	Nazifa Rumman, Maisha Mesbah, Tasmina Mahmud and M. Shah Alam
140	Numerical Study on ITO Surface Modification Technique To Improve Single Emissive Layer Based Organic Light Emitting Diode Performance222	Riku Chowdhury, Md. Rashedul Haq, Md. Sarwar Uddin Chowdhury, Sharmin Afrose and Sukanta Paul
152	Spiral Photonic Crystal Fiber for Gas Sensing Application238	Md. Ibadul Islam, Maksuda Khatun, Shuvo Sen, Kawsar Ahmed and Sayed Asaduzzaman
155	Porous Core Photonic Crystal Fiber based Chemical Sensor251	Bikash Kumar Paul, Md. Shadidul Islam, Sawrab Chowdhury, Sayed Asaduzzaman and Kawsar Ahmed
232	Tunable Fabry Perot Filter Using All-Dielectric Multilayer Anisotropic Metamaterial In The Mid- Infrared Frequency Range361	Ayed Al Sayem and Md. Saifur Rahman

21 December 2016, Wednesday (11:30-01:00) Session: E2 Nanoelectronics-I Room No. ECE 632 Session Chair: Ziaur Rahman Khan, Dept. of EEE, BUET		
75	Self-Consistent Determination of Quantum- Mechanical Threshold Voltage of Gate-All-Around Junction Less Nanowire Transistor135	Nujhat Tasneem, Md. Mohsinur Rahman Adnan, Md. Samzid Bin Hafiz, Quazi D.M. Khosru
102	Impact of Interface Charges on the Performance of Dual Material Double Gate Tunnel FET170	Samantha Lubaba Noor, Samia Safa, and Md. Ziaur Rahman Khan
113	Temperature Dependent Structural Studies and Magnetic Characterization of Pure BiFeO3 Nanoparticles Synthesized by Sol-gel Method186	Abid Anjum Sifat, Khandker Akif Aabrar, Md. Khairul Bashar, Bashir Ahmmad, M. A. Basith and Md. Ziaur Rahman Khan
129	Bias dependent non-linear electrical characteristics of poly-silicon nanowire and assessment of biosensing application using liquid gate206	Tanvir Alam Shifat, Rubiya Nila, Muktadir Imam Jan and Mohammad Mojammel Al Hakim
164	Study on Doping Profile and Scaling Characteristics of Gate and Channel Engineered Symmetric Double Gate MOSFET255	Md. Arafat Mahmud, Md. Tashfiq Bin Kashem and Samia Subrina
328	Improvement in the exciton and EHP generation rate of P3HT:PC60BM based BHJ OSCs with the incorporation of SWCNTs530	Saad Khan, Ajnan Hasan, Avizet Saha and Sharif Mohammad Mominuzzaman

21 December 2016, Wednesday (01:00-02:30) Prayer and Lunch Break

21 December 2016, Wednesday (2:30-4:00) Session: A3 Electrical Machines Room No. ECE 634 Session Chair: Enamul Basher, Dept. of EEE, BUET		
22	Realization of Low-Voltage Ride Through Requirements for PMSGs in Wind Turbines Systems Using Generator-Rotor Inertia54	Mohamed Abdelrahem, Muhammad Hosnee Mobarak and Ralph Kennel
56	Detection of Torsional Oscillations in Line-Start IPM Motor Drives Using Motor Current Signature Analysis98	S. F. Rabbi and M. A. Rahman
316	Design and Performance Analysis of a Modified Outer Rotor Permanent Magnet Alternator for Low-Speed Wind Turbine511	Md. Yeasin Arafat, Mahtab Murshed, Md. Mahamudul Hasan and M. Abdur Razzak
372	MTPA and Field Weakening Control of Synchronous Reluctance Motor598	S.M. Ferdous, Pablo Garcia Fernandez, Mohammad Abdul Moin Oninda and Md. Ashraful Hoque
374	Third Harmonic Differential Over Current Relay Based Protection System for Stator Ground Fault in Synchronous Generator606	Md. Asif Chowdhury, Kazi Taimur Reza, Didar Mohammad Alam and Enamul Basher

21 December 2016, Wednesday (2:30-4:00) Session: B3 Pattern Recognition - I Room No. ECE 632 Session Chair: S M Mahbubur Rahman, Dept. of EEE, BUET		
66	Bruise Detection in Apples Using Infrared Imaging118	Sourav Dey Roy, Dipak Hrishi Das, Mrinal Kanti Bhowmik and Anjan Kumar Ghosh
121	Towards Optimal Shallow ANN for Recognizing Isolated Handwritten Bengali Numerals194	Al Mehdi Saadat Chowdhury and M. Shahidur Rahman
123	Traffic Sign Recognition Using SURF: Speeded Up Robust Feature Descriptor and Artificial Neural Network Classifier198	Zainal Abedin, Prashengit Dhar and Kaushik Deb
139	Part Definition and Selection for Part-Based Speed Invariant Gait Recognition218	Md. Rokanujjaman, Md. Altab Hossain, Md. Rezaul Islam, Akm Akhtar Hossain and Alexander Ferworn
154	Data Adaptive Filtering Approach to Improve the Classification Accuracy of Motor Imagery for BCI247	Sanjoy Kumar Saha and Md. Sujan Ali
177	Gram-Positive Bacterial Protein Subcellular Localization Prediction Using Features Fusion Strategy291	Julia Rahman, Md. Nazrul Islam Mondal, Md. Khaled Ben Islam, Md. Al Mehedi Hasan and S. M. Sabbir Amin

	21 December 2016, Wednesday (2:30-4:00) Session: C3 Optical Waveguides and Communications - I Room No. ECE 627 Session Chair: Satya Prasad Majumder, Dept. of EEE, BUET		
64	Highly Birefringent Bisymmetric Photonic Crystal Fiber for Terahertz Wave Guidance110	Md Nafiz Amin and Mohammad Faisal	
65	Ultra-low Loss THz Waveguide with Flat EML and Near Zero Flat Dispersion Properties114	Sharafat Ali, Tamal Sarkar, Anamika Dey, Md. Rabiul Hasan, J. R. Mou, Sohel Rana, M. Islam and N. Ahmed	
143	A Highly Birefringent Slotted-Core THz Fiber226	Sohel Rana, Md. Saiful Islam, Jakeya Sultana, Km Samaun Reza, Md Ashfaq Uddin, Mohammad Faisal, Mohammad Rakibul Islam and Raonaqul Islam	
338	Low Loss Porous-Core Photonic Crystal Fiber for Long-Haul Broadband THz Transmission546	Mohammad Faisal, Sk. Nayemuzzaman and Shekh Farhad Uddin Ahmed	
365	Analytical Performance Evaluation of a RF Subcarrier Modulated Optical FSO System under the Influence of Atmospheric Turbulence594	Bobby Barua and Satya Prasad Majumder	

21 December 2016, Wednesday (2:30-4:00) Session: D3 Nanoelectronics - II Room No. ECE 625 Session Chair: A B M Harun-ur Rashid, Dept. of EEE, BUET		
Invited Paper	Freeform Electronics for Advanced Healthcare26	Muhammad Mustafa Hussain
67	Impact of Scaling Channel Length on the Performances of Nanoscale FETs123	Jibesh K. Saha, N. Chakma, and M. Hasan
83	Sensitivity of a nanodoped polymer based X-ray image detector155	Naimul Hassan, Shaikh Asif Mahmood
108	Dy doped BiFeO3: A Multiferroic with Bulk Structural and Ferroelectric Properties Comparable with Nano Counterparts174	Sayeed Shafayet Chowdhury, Abu Hena Mostafa Kamal, Bashir Ahmmad and Mohammed Abdul Basith
302	Optimization of CNFET Op Amp for High Frequency Operation in Sub-10-nm Node483	Md Zubair Ebne Rafique, Alam Mahmud and Sharif Mohammad Mominuzzaman

21 December 2016, Wednesday (2:30-4:00) Session: E3 Photovoltaics Room No. ECE 333 Session Chair: Sharif M. Mominuzzaman, Dept. of EEE, BUET		
47	Simulation Study on the Effects of Changing Band Gap on Solar Cell Parameters86	Mostofa Amir Rifat, Mohammad Imtiaz Morshed Khan and Khairul Alam
70	Optimization and Performance Analysis of PCBM Acceptor-Based Bulk Heterojunction Organic Solar Cells Using Different Donor Materials127	Faysal Hakim and Md. Kawsar Alam
171	Estimation of Optimum Tilt Angle for PV Cell: A Study in Perspective of Bangladesh271	Mohammad Nadim and Muhammad Rashedul Haq Rashed
174	Numerical Analysis of CdS:O/CdTe Thin Film Solar Cell using Cu2Te BSF Layer279	Mohammad Wahidur Rahman, Sheikh Ifatur Rahman, Shafayat Naznoor Ahmed and Md. Ashraful Hoque
230	Effect of Response Time and Starting Point of Duty Cycle in Maximum Power Point Tracking Operation of Solar Panel Using PO Algorithm357	Ratul Das and Kazi Mujibur Rahman
361	High Efficient and Stable Ultra-Thin CdTe Solar Cell with a Potential Copper Telluride BSF590	Mrinmoy Dey, Maitry Dey, M. A. Matin and Nowshad Amin

21 December 2016, Wednesday (04:00-4:30) Prayer and Tea Break

Sessio	21 December 2016, Wednesday (04:30-05:30) Session: A4 Power Electronics - II Room No. ECE 625 Session Chair: M. Nasir Uddin, Dept. of EE, Lakehead University, Ontario, Canada		
116	A High Efficiency Transformerless PV Grid-Connected Inverter with Leakage Current Suppression190	Shakil Ahamed Khan, Youguang Guo and Jianguo Zhu	
176	Ćuk Topology Based High Performance Three Phase to Single Phase Switch Mode Cycloconverter with V/f motor control287	Ifte Khairul Amin, M. Nasir Uddin and Mohammad Ali Choudhury	
246	Modified H-Bridge Multilevel Inverter for Photovoltaic Micro-grid Systems377	Md Multan Biswas, Shuvankar Podder and Md. Ziaur Rahman Khan	
327	Solid State Transformer Based on Cascade Multilevel Converter for Distribution Network527	Muhammad Masud Rana, Rafiur Rahman and Md. Monibor Rahman	

21 December 2016, Wednesday (04:30-05:30) Session: B4 Power Systems - II Room No. ECE 627 Session Chair: Aminul Hoque, Dept. of EEE, BUET			
262	Vulnerability Analysis of Bangladesh Power System Network393	Fahim Al Hasnain, Atique Mahmud and Abdul Hasib Chowdhury	
277	FLC Based Optimization of AGC Controller Parameters for an Interconnected Power System419	Asif Ferdoush and M. G. Rabbani	
279	Reactive Power Reserve Management to Prevent Voltage Collapse in Bangladesh Power System423	A.T.M Mustafizur Rahman and Abdul Hasib Chowdhury	
300	Loadability Improvement of an Existing AC Line by Transmitting Simultaneous AC and DC Power479	Mohammad Tawhidul Alam, Rabayet Sadnan, Irtiza Haque, Mushfequr Rahman and Quamrul Ahsan	

21 December 2016, Wednesday (04:30-05:30) Session: C4 Algorithm and Complexity Room No. ECE 632 Session Chair: A B M Alim Al Islam, Dept. of CSE, BUET		
45	Design of a Hummingbird Crypto Core Implementing BIST Technique82	Azizul Haque and Md Liakot Ali
170	Towards Concurrent Data Structure Development with Relaxed Synchronization267	Naw Safrin Sattar, Tasmia Aqila and Rifat Shahriyar
292	Rational Krylov Subspace Method (RKSM) for Solving the Lyapunov Equations of Index-1 Descriptor Systems and Application to Balancing Based Model Reduction451	M. Monir Uddin, M. Sumon Hossain and Mohammed Forhad Uddin
326	Transaction Authorization from Know Your Customer (KYC) Information in Online Banking523	Prakash Chandra Mondal, Rupam Deb and Mohammad Nurul Huda

22 December 2016, Thursday (09:00-11:00) Session: A5 Power Electronics- III Room No. ECE 625 Session Chair: S. M. Lutful Kabir, HCT, BUET		
Invited Paper	Recent Advances In Direct Torque And Flux Control Of IPMSM Drives14	M. Nasir Uddin
32	Model Predictive Control for Low-Voltage Ride Through Capability Enhancement of DFIGs in Variable-Speed Wind Turbine Systems70	Mohamed Abdelrahem, Muhammad Hosnee Mobarak and Ralph Kennel
243	A Single Phase SEPIC AC-DC Converter with Improved Power Factor and Input Current THD373	Mohammad Rubaiyat Tanvir Hossain, Amina Hasan Abedin and Mohammad Ali Choudhury
298	Non-Isolated Single Stage PFC based LED Driver with THD Minimization using Cúk Converter471	S.M. Ferdous, Mohammad Abdul Moin Oninda, Golam Sarowar, Kazi Khairul Islam and Md. Ashraful Hoque
311	Performance Evaluation of Saturating Class – C Driver Circuit for Inductive Wireless Power Transfer503	Md Khurram Monir Rabby, Shamim Ara Shawkat and Mohammad Shah Alam
320	A Modified PWM Technique to Improve Total Harmonic Distortion of Multilevel Inverter515	Shuvankar Podder, Md Multan Biswas and Md. Ziaur Rahman Khan

	22 December 2016, Thursday (09:00-11:00) Session: B5 Pattern Recognition - II Room No. ECE 627 Session Chair: Mohammad Ariful Haque, Dept. of EEE, BUET		
50	Estimation of the Most Effective Rhythm for Human Identification using EEG Signal90	Md. Mahmudul Hasan, Md. Hanif Ali Sohag, Md. Eakub Ali and Mohiuddin Ahmad	
224	Analysis of ECG Signal and Classification of Heart Abnormalities Using Artificial Neural Network353	Tanoy Debnath, Md. Mehedi Hasan and Tanwi Biswas	
265	Feature Selection Techniques for Increasing Reliability of Fault Diagnosis of Bearings396	Md Rashedul Islam, M M Manjurul Islam and Jong– myon Kim	
275	Human and Carried Baggage Detection & Classification based on RSD-HOG in Video Frame415	Tahmina Khanam and Kaushik Deb	
296	A hybrid deep model with HOG features for Bangla handwritten numeral classification463	S M A Sharif, Nabeel Mohammed, Nafees Mansoor and Sifat Momen	
346	A Deep Domain Adaption Approach for Object Recognition Using Multiple Model Consistency Analysis562	Biprodip Pal and Boshir Ahmed	
373	Evaluation of Discrimination Power of Facial Parts from 3D Point Cloud Data602	Rafiul Amin, A. Farhan Shams, S. M. Mahbubur Rahman and Dimitrios Hatzinakos	

22 December 2016, Thursday (09:00-11:00) Session: C5 Optical Waveguide and Communications - II Room No. ECE 632 Session Chair: Rakibul Islam, Dept. of EEE, IUT		
52	Millimeter Wave Generation Based on Optical Frequency Multiplication in Radio over Fiber Systems94	Tahmid Aziz Chowdhury, Md. Mahfuzul Azam Ghuri and Refat Kibria
153	Ultra-flattened Broadband Dispersion Compensating Photonic Crystal Fiber with Ultra-low Confinement Loss243	Mohammad Faisal and Animesh Bala Ani
236	Design of a Tunable Ring Resonator with Enhanced Quality Factor369	Riazul Arefin, Md. Omar Faruque, Rabiul Al Mahmud and Rakibul Hasan Sagor
294	Cascading of Dual Drive Mach Zehnder Modulator and Electro Absorption Modulator for producing an Optical Comb455	Rifat Nazneen and Ebad Zahir
304	Ultra-High Nonlinear Photonic Crystal Fiber with GeO2 Doped Core487	Mohammad Faisal, Shekh Farhad Uddin Ahmed and Shekh Nayemuzzaman
349	Performance Limitations due to Combined Influence of ASE and Raman Amplifier Induced Crosstalk in a WDM System with Direct Detection Receiver566	Fahmida Hossain Tithi and Dr. Satya Prasad Majumder
339	Highly GeO2 Doped Polarization Maintaining PCF for Dispersion Compensation550	Mohammad Faisal, Sk. Nayemuzzaman, Shekh Farhad Uddin Ahmed and Md. Imrul Hasan

22 December 2016, Thursday (09:00-11:00) Session: D5 Nanoelectronics - III Room No. ECE 634 Session Chair: Md. Rafiqul Islam, Dept. of EEE, KUET		
131	An investigation of the effects of doping and thickness on the electrical characteristics of polycrystalline silicon nanowire biosensors210	Laila Parvin Poly, Asrarul Haque and Mohammad Mojammel Al Hakim
173	Delay Analysis of SWCNT Bundle Interconnect for Different Technology Nodes275	Shouvik Musavvir, Prattay Chowdhury and Sharif Mominuzzaman
191	Crystallographic Orientation-Dependent Performance of 445nm InGaN Blue Laser307	Sourav Roy, Md. Rafiqul Islam, Md. Mahbub Hasan and Sheikh Abid Hossain
192	Estimation of Exciton Confinement in III-Nitride Quantum Wires311	Md. Rakibul Islam, Md. Soyaeb Hasan and Md. Rafiqul Islam
193	Many Body Corrections for Higher Optical Transitions in Semiconducting SWCNTs314	G. R. Ahmed Jamal and Sharif Mohammad Mominuzzaman
207	Characteristic Analysis of Triple Material Tri-Gate Junctionless Tunnel Field Effect Transistor333	Monzurul Islam Dewan, Md. Tashfiq Bin Kashem and Samia Subrina
222	Analytical Modeling of VFET349	Nishith Nirjhar Chakraborty, Imam Al Razi, Mehedy Hasan Bappy and Md. Ziaur Rahman Khan

22 December 2016, Thursday (09:00-11:00) Session: E5 Microwave and RF Engineering Room No. ECE 333 Session Chair: Md. Shah Alam, Dept. of EEE, BUET		
80	3-D Vertical Solenoid Inductors by Electrodeposition Techniques147	Fazle Rabbi
112	Chebyshev Type-I Low Pass Filter Using Annular Ring Resonator: A Comparative Performance Analysis For Different substrates182	Shakhawat Parvez, Nazmus Sakib, Md. Nurunnabi Mollah
175	' 'Slotted Compact Printable Orientation Insensitive Chipless RFID Tag for Long Range Applications283	Md. Aminul Islam, Yixian Yap, Nemai Karmakar
283	A Linearly Polarized (LP) Reader Antenna for LP and Orientation Insensitive (OI) Chipless RFID tags431	Md. Aminul Islam, Nemai Karmakar
312	A Compact Spectacles Shaped Patch Antenna for UWB Applications507	M. Tarikul Islam, M. Samsuzzaman, M. Z. Mahmud, M.T. Islam
330	Microstrip Planar Antenna for Wideband Wireless Communication with Defected Ground Structure534	Rezaul Azim, and Mohammad Tariqul Islam
337	A Tunable Energy Efficient UWB Transmitter Design for Medical Applications542	Ishmam Mahbub, Nouroz Rahman Amon, and Pran Kanai Saha

22 December 2016, Thursday (11:00-11:30) Tea Break

22 December 2016, Thursday (11:30-01:30) Session: A6 Renewable Energy Room No. ECE 625 Session Chair: Shahidul Islam Khan, Dept. of EEE, BUET		
6	Electrical Power Generation Through Speed Breaker30	Kafi Mohammad Ullah, K. M. Ahsan-Uz-Zaman, Sohag Hosen, Rakibul Hasan Khan and Sanjida Parvin
27	Power Frequency Transformer-less Grid Connected Photovoltaic Arrays with reduced DC Sources and Electronic Components58	A. M. Mahfuz- Ur- Rahman and Md. Rabiul Islam
198	Active Management of Wind Turbine-Diesel Generator Hybrid System Considering Economic Criteria321	Hasnain Ahamad Ziad and Md. Rafiqul Islam
217	Wind farm Transient Stability improvement by Fuzzy Logic Controlled Series Variable Resistor345	A B M Samsuzzaman, Rabayet Sadnan and A.S.M. Jahid Hasan
269	Nonlinear Backstepping Controller Design for a Three- Phase Grid-Connected Photovoltaic System Using DPC Approach407	Md Ferdous Pervej, Tushar Kanti Roy, Md Ismail Sarkar and Farha Khushi Tumpa
309	Stability Analysis of Grid Connected PV Array Under Maximum Power Point Tracking499	Md. Hasan Shahriar, Md. Jawwad Sadiq and Md. Forkan Uddin
352	Fast Real and Reactive Power Flow Control of Grid-Tie Photovoltaic Inverter570	Rabayet Sadnan and Md. Ziaur Rahman Khan
30	Performance Analysis of Commonly Used and New Modulation Techniques in Multilevel Inverters for Direct Grid Connected Photovoltaic Arrays66	A. M. Mahfuz- Ur- Rahman, Md. Mazharul Islam and Md. Rabiul Islam

22 December 2016, Thursday (11:30-01:30) Session: B6 Signal and Image Processing Room No. ECE 627 Session Chair: Md. Saifur Rahman, Dept. of EEE, BUET		
7	Improved Convergence of an Adaptive Identification Algorithm for a Large Sparse System34	Ankit Deshmukh, Krishnan Ramakrishnan and Goshaidas Ray
58	A TDPSOLA Based Concatenation Technique for Bengali Text to Speech Synthesis System Subachan102	Kamrunnahar Swarna and Abu Naser
132	Use of Single Bin FFT Algorithm for High Speed Tone Detection and Parallel Processing214	Shahnewaz Karim Sakib, Farah Ferdaus and Md. Saifur Rahman
233	Roboticon: A Realistic Platform to Imitate Facial Expressions365	Amit Kumar Kundu, Md. Didarul Islam and S. M. Mahbubur Rahman
291	On the Autocorrelation and Cross-correlation of Ternary Möbius Sequence over Finite Field447	Fatema Akhter and Md. Selim Al Mamun
358	An Improved Color Image Steganography Technique in Spatial Domain582	Saikat Mondal, Rameswar Debnath and Borun Kumar Mondal
360	Non-intrusive Objective Evaluation of Speech Quality in Noisy Condition586	Md. Rafidul Islam, Md. Ashequr Rahman, Md. Numan Hasan, A. N. M.F Shahriyar Hossain, Ahmed Nazim Uddin and Mohammad Haque

Ses	22 December 2016, Thursday (11:30-01:30) Session: C6 Wireless Communication and Networks- II Room No. ECE 632 Session Chair: Raqibul Mostafa, Dept. of EEE, United International University		
299	An Efficient MAC Protocol for provisioning fairness in Vehicle-to-Roadside Communications475	Md. Abubakar Siddik, Shafika Showkat Moni and Mohammad Shah Alam	
40	Traffic Modelling of WiMAX under BMAP with Length of Packet of General Distribution78	Jesmin Akhter, Md Islam and M Amin	
185	Fruit Fly Algorithm based Clustering Protocol in Wireless Sensor Networks295	Anamika Dey, Tamal Sarkar and Sharafat Ali	
250	Saturation Throughput Using Different Backoff Algorithms In IEEE 802.15.4381	Md. Mohibur Rahaman, Kazi Ashrafuzzman, Mohammad Sanaullah Chowdhury and Mohammad Osiur Rahman	
288	MX-MAC: A Multichannel Based Low Latency Asynchronous MAC Protocol For Wireless Sensor Networks439	Md Mustafa Kamal, Shafika Showkat Moni and Mohammad Shah Alam	
306	A Lightweight PAPR Reduction Scheme using Greatest Common Divisor Matrix Based SLM Technique491	Md. Moshiur Rahman, Md. Nur Al Safa Bhuiyan, Muhammad Sajjadur Rahim and Sabbir Ahmed	
341	COASYM-MAC: A Cooperative Asymmetric MAC Protocol for Wireless Sensor Network558	Md. Mahedee Hasan, Amit Karmaker, Shafika Showkat Moni and Mohammad Shah Alam	

22 December 2016, Thursday (11:30-01:30) Session: D6 Nanoelectronics - IV Room No. ECE 634 Session Chair: Anisul Haque, Dept. of EEE, East West University		
Invited Paper	Multiscale and Multiphysics Modeling of Non- Classical Semiconductor Devices20	Shaikh Shahid Ahmed
87	On the Staircase like Structures in Gate C-V Characteristics of InSb/In0.8Al0.2Sb MOS-HEMT Devices163	Nugaira Gahan Mim and Anisul Haque
203	Simulation-Based Study on the Effect of Inversion Charge layer on Triple Material Double Gate Tunnel FET329	Samia Safa, Samantha Lubaba Noor and Md. Ziaur Rahman Khan
260	Transport characteristics of Double Gate N-Channel Junctionless Transistor389	Tanmoy Kumar Paul and Quazi D. M. Khosru
266	Optical Characterization of Spincoated Multiwall Carbon Nanotube Films on Silicon Substrates400	Muhammad Athar Uddin, T Soga and Sharif M Mominuzzaman
268	Gate dielectric dependent performance of GNR MOSFET: A tight binding study403	Md. Shamim Sarker, Al- Mohtashim Sabbik, Muhammad Mainul Islam, Md. Nur Kutubul Alam and Md. Rafiqul Islam.
331	Short Channel Effects Suppression in a Dual-Gate Gate-All-Around Si Nanowire Junctionless nMOSFET538	M W Rony, Pankaj Bhowmik, Harley R Myler and Provakar Mondol

## 22 December 2016, Thursday (01:30-03:00) Prayer and Lunch Break

22 December 2016, Thursday (03:00-04:00)
Plenary Session - II
2D to 3D - Machine Learning for 3D Reconstruction
Speaker: Santanu Chaudhury, Dept. of EE, IIT, Delhi, New Delhi, India
Room No.: ECE 625
Session Chair: Md. Kamrul Hasan, Dept. of EEE, BUET

22 December 2016, Thursday (04:15-05:00) Closing Ceremony

Additional Papers	
Challenges and Opportunities in Grid Connected Commercial Scale PV and Wind Farms1	Syed Islam
2-D to 3-D Conversion of Videos using Fixed Point Learning Approach8	N. Chahal and S. Chaudhury