

2016 International Conference on Medical Engineering, Health Informatics and Technology (MediTec 2016)

**Dhaka, Bangladesh
17-18 December 2016**



**IEEE Catalog Number: CFP16H50-POD
ISBN: 978-1-5090-5422-0**

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IEEE Catalog Number:	CFP16H50-POD
ISBN (Print-On-Demand):	978-1-5090-5422-0
ISBN (Online):	978-1-5090-5421-3

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1st International Conference on Medical Engineering, Health Informatics and Technology (MediTec 2016)

Dec 17-18, 2016

Dhaka, Bangladesh

Program Schedule

Day 1: December 17 (Saturday) 2016

Reporting (Registration & Kit collection)

Time: 08:30AM to 09:30AM

Venue: Ground Floor Lounge, Room-GF1 and Conference Secretariat, Room-313

Inauguration

Time: 09:30AM to 11:00AM

Venue: UIU Auditorium

9:15 am	Guests take their seats
9:25 am	Arrival of the Chief Guest
9:30 am	Recitation from the Holy Quran
9:35 am	Welcome address by Chair Organizing Committee
9:40 am	Address by the Chair Technical Committee and IEEE BD Section
9:45 am	Address by the Dean School of Science and Engineering UIU
9:50 am	Address by the Vice Chancellor UIU
9:55 am	Address by the Special Guest
10:05 am	Address by the Special Guest
10:15 am	Address by the Special Guest
10:30 am	Vote of Thanks from the Conference Chair
10:35 am	Presentation of Platinum Sponsor
11:00 am	Refreshment Break
11:30 am	Keynote Speeches

Snacks/Tea break

Time: 11:00AM to 11:30AM

Plenary Session P1, Venue: UIU Auditorium

Keynote-1

Time: 11:30 AM – 12:00 PM

Title: Imaging Based Biometric and Early Stage Cancer Detection

Speaker: Prof. Dr. Mohammad S. Alam

Fellow – IEEE, IET, OSA, SPIE, IoP, IS&T, and IAPR Dean, Frank H. Dotterweich College of Engineering Texas A&M University

Keynote-2

Time: 12:00 PM – 12:30 PM

Title: Brain-Computer Interaction for Control, Communication & Monitoring

Speaker: Prof. Dr. Anton Nijholt

Computer Scientist, University twente the Netherlands

Keynote-3

Time: 12:30 PM – 01:00 PM

Title: Clinical Neurophysiology in Bangladesh: transfer of technology and appropriate use in regular medical practice

Speaker: Dr. Selina Husna Banu

Associate professor, Neurosciences Unit, ICH and SSF Hospital, Mirpur, Dhaka, Bangladesh

Lunch and Prayer Break

Time: 01:00PM to 02:00PM

Technical Sessions A1, A2 (02:00PM-03:30PM)

Session A1, Venue: UIU Auditorium

Time: 2:00 PM-3:30PM

Biomedical Signal and Image Processing

	Paper Title	Authors
13	Inpainting Multiple Sclerosis Lesions for Improving Registration Performance with Brain Atlas.	Fahim Faisal, Soumik Farhan, Zaied Zaman and Moshir R Faraz
19	Bangladeshi Sign Language Recognition using Finger Tip Position.	Syed Tauhid Ahmed and M. A. H. Akhand
51	A Novel and Robust Automatic Seed Point Selection Method for Breast Ultrasound Images	Rashid Al Mukaddim, Juan Shan, Irteza Enan Kabir, Abdullah Salmon Ashik, Rasheed Abid, Zhennan Yan, Dimitris N. Metaxas, Brian S. Garra, Kazi Khairul Islam and S. Kaisar Alam
56	A Smart System for Driver's Fatigue Detection, Remote Notification and Semi-Automatic Parking of Vehicles to Prevent Road Accidents	Alamgir Hossain, Faisal Bin Kashem, Md. Mehedi Hasan, Sabkiun Naher and Md. Ismail Rahman
62	A Direction-Sensitive Fall Detection System Using Single 3D Accelerometer and Learning Classifier	Farhad Hossain, Liakot Ali, Zahurul Islam and Hossen A Mustafa

Session A2, Venue: Room-314

Time: 2:00PM-3:30PM

Computational Biology and Bioinformatics & Biomedical and Health Informatics

	Paper Title	Authors
1	An Improved Algorithm for Sorting Chromosomes by Inverted Block-interchanges Based on Permutation Group	Afrida Tabassum, Wali Mohammad Abdullah, Najia Manjur, Rehennu Islam, Ashfaq Ahmed, Shourav Imtiaz Morshed, Rizia Iqbal Tinni, Kazi Lutful Kabir and Muhammad Nazrul Islam
34	Restriction Site Placement in Virus Genomes using Particle Swarm Optimization.	M.A.H. Akhand, Sk. Imran Hossain, Md. Fisol Habib and Kazuyuki Murase.
80	Evolutionary Analysis and Prediction of Peptide Vaccine Candidates for Nipah virus Fusion Glycoprotein	Farzana Hossain and Rubayetul Alam
155	Similarity Analysis Among Patients' Names: Bangladesh Perspective	Shahidul Islam Khan and Abu Sayed Md. Latiful Hoque

Plenary Session P2, Venue: UIU Auditorium

Keynote-4

Time: 03:30PM to 04:00PM

Title: An Automated Tool to Teach Social Engagement Skills for Older Adults

Speaker: **Dr. Ehsan Hoque**

University of Rochester, USA

Prayer Break an Tea/snacks break

Time: 04:00PM to 04:30PM

Plenary Session P3 & Platinum Spons, Venue: UIU Auditorium

Time: 04:30PM to 05:15PM

Keynote-5

Title: Brain Machine Interface: A Translational Neural Engineering Technology for Treatment and Rehabilitation of Neural Disorders

Speaker: Dr. Khondokar Abdullah Al Mamun

Associate Professor, United International University

Technical Sessions B1, B2 (05:30PM- 07:00PM)

Session B1, Venue: UIU Auditorium

Time: 5:30PM- 07:00PM

Biomedical and Health Informatics

	Paper Title	Authors
7	Microwave Ablation Technique (MWA) for Cancer Treatment, Simulation Analysis of Single Slot MCA for Different Slot position	Alimul Razib, Khokon Ahmad Hossain and Md. Sazzat Hossain
40	PurpleAid : An mHealth Pl atform to Combat Health Hazards of Women	Fatema Khan, Maitraye Das and Ahiya Ahammed.
46	Persuasive health and wellbeing application: A theory-driven design in promoting physical activity	Md Sanaul Haque, Wali Mohammad Abdullah, Sadiqur Rahaman, Maarit Kangas and Timo Jämsä
68	Cardiovascular Disease Prognosis Using Effective Classification and Feature Selection Technique	Shahed Anzarus Sabab, Ahmed Iqbal, Md. Ahadur Rahman Munshi and Shihabuzzaman Shihab
104	Clinical Engineering and Healthcare Delivery Performance Measurement: Basic module of clinical engineering department for 250 beds hospitals in Bangladesh	Md. Anwar Hossain, Mohiuddin Ahmad, Md. Rafiqul Islam, M. D. Hossain, A. K. M. Rahman, S. Islam and Mohd. Abdur Rashid

Session B2, Venue: Room - 314
Time: 5:30 PM-7:00PM
Biomedical Signal and Image Processing

	Paper Title	Authors
74	Improvement of Haar Feature Based Face Detection incorporating Human Skin Color Analysis	Md. Abdus Salim Mollah, Md. Asif Anjum Akash, Mahtab Ahmed and M. A. H. Akhand
86	Performance Analysis of an Ultra Wideband Antenna for Wireless Capsule Endoscopy	Md Abu Saleh Tajin, Mohsin Ahmed and Pran Kanai Saha
90	Bifurcation Analysis of the Periodic Action Potentials of Cardiac Excitation in the Aliev-Panfilov Model	Sampad Das, Nasrin Sultana, Md. Ariful Islam Arif and M. Osman Gani
95	Bifurcation Analysis of Periodic Action Potentials of Nerve Cells in the FitzHugh-Nagumo Model	Nasrin Sultana, Sampad Das and M. Osman Gani
211	A Localization Algorithm for Capsule Endoscopy based on Feature Point Tracking	Khan Wahid, S. M. Lutful Kabir, Haider Adnan Khan, Abdullh Al Helal, Abdul Mukit and Raqibul Mostafa

Day 2: January 8 (Friday) 2016

Reporting (Registration & Kit collection)

Time: 08:00AM to 09:00AM
Conference Secretariat, Room-313

Technical Sessions C1, C2 (9:00AM-10:30AM)

Session C1, Venue: UIU Auditorium
Time: 9:00AM-10:30AM
Biomedical Signal and Image Processing

	Paper Title	Authors
110	Lie Detection from fNIR Signal and NeuroImage	Md. Asadur Rahman and Mohiuddin Ahmad
116	Improved Strain Estimation Using a Novel 1.5D Approach: Preliminary Results	Irteza Kabir, Rasheed Abid, Abdullah Ashik, Kazi Islam and Kaisar Alam
121	Range Adaptation of Wireless Power Transfer Systems for Biomedical Applications	Siddique Kabir, Khan A. Wahidand, Md. Mehedi Hasan
138	A Machine Learning Based Approach for the Detection and Recognition of Bangla Sign Language	Muttaki Hasan, Tanvir Hossain Sajib and Mrinmoy Dey
143	Classification of Motor Imagery Signal Using Wavelet Decomposition: A Study for Optimum Parameter Settings	Md A Mannan Joadder and M.K.M Rahman

Session C2, Venue: Room-314

Time: 9:00AM-10:30AM

ICT, Health and Disabilities

	Paper Title	Authors
24	Diagnosis of Chronic Kidney Disease Using Effective Classification and Feature Selection Technique	Nusrat Tazin and Shahed Anzarus Sabab
126	Selection Analysis and Phylogeographic Simulation Study of Worldwide Spread of Zika Virus	Rubayetul Alam and Arafat Rahman.
160	Bolte Chai: An Augmentative and Alternative Communication Device for Enhancing Communication for Nonverbal Children	Mohammad Nasfikur Rahman Khan, Mohammad Nazmul Hasan, Kaiser Habib, Marufa Hossain, Farhana Sarker and Abdullah Al Mamun Khondaker
184	DiaHealth: A Smart App for Complete Diabetes Lifestyle Management	Md. Ariful Islam, Hassan Nomani Alvi and Khondaker Abdullah Al Mamun
196	A Smartphone based Application to Improve the Health Care System of Bangladesh	Ahmed Imteaj and Kamrul Hossain Patwary
N/A	Automated Chronic Kidney Disease Detection	Nasimul Hasan, Md. Taufeeq Uddin and Chayan Dhar Clinton

Plenary Session P4, Venue: UIU Auditorium

Keynote-6

Time: 10:30AM to 11:00AM

Title: Towards developing low cost solutions for affordable perinatal health screening

Speaker: **Ahsan H. Khandoker**

Associate Professor of Biomedical Engineering at Khalifa University, Abu Dhabi, UAE

Snacks/Tea break

Time: 11:00AM to 11:30AM

Plenary Session P5, Venue: UIU Auditorium

Time: 11:30AM to 01:00PM

Keynote-7

Time: 11:30 AM – 12:00 PM

Title: Computer in Medical Physics: Application in Radiation Therapy

Speaker: Prof. Dr Hasin Anupama Azhari

Dean, Faculty of Mathematical and Physical Science

Chairman, Dept of Medical Physics and Biomedical Engineering (MPBME), Gono Bishwabidyalay (University), Savar Dhaka, Bangladesh

Keynote-8

Time: 12:00 PM – 12:30 PM

Title: Autism Spectrum Disorder: pathway of care in Bangladesh

Speaker: Prof. Md. Golam Rabbani

Professor of Psychiatry

Keynote-9

Time: 12:30 PM – 01:00 PM

Title: Research in Biomedical Signal Processing: Challenges, Opportunities and Contribution

Speaker: Prof. Dr. Mohiuddin Ahmad

Professor, Department of Electrical and Electronic Engineering, Khulna University of Engineering & Technology, Bangladesh

Lunch and Prayer Break

Time: 01:00PM to 02:00PM

Technical Sessions D1, D2 (02:00PM-03:30PM)

Session D1, Venue: UIU Auditorium

Time: 02:00PM-03:30PM

Biorobotics, Bionanotechnology, and Wearable Biomedical Sensors and Systems Neuro and Rehabilitation Engineering

	Paper Title	Authors
30	A Voice Controlled Robot for Continuous Patient Assistance	Sashanka Kumar Pramanik, Md. Mahsin Ullah, Zishan Ahmed Onik, Sumaiya Sultana, Saiful Ahmed and Nadia Anam
100	Pressure Transfer Function for Aorta Model in Cardiovascular Simulator -Feasibility Study of Wearable Central Blood-Pressure Gauge	Kyoji Nakajo, Yudai Komori, Shuji Takahashi, Kazuhiro Motegi, Yoichi Shiraishi and Hiroshi Miyashita
132	Bilingual Wearable Assistive Technology for Visually Impaired Persons	Humayun Rashid, A.S.M Rabbi Al-Mamun, Mohammad Sijanur Rahaman Robin, Miraz Ahasan and S M Taslim Reza
207	Prototyping Arduino and Android Based m-Health Solution for Diabetes Mellitus Patient	Abu Sadat Sabbir, Khandakar Md. Bodroddoza, Abdul Hye, Md. Faysal Ahmed, Simanto Saha and Khawza I. Ahmed
164	Predicting Movement and Laterality From Deep Brain Local Field Potentials	Abu Shafin Mohammad Mahdee Jameel, Mike Mace, Shouyan Wang, Ravi Vaidyanathan and Khondaker Abdullah Al Mamun
169	Smart NDA: A Framework for Smart Device Integrated Automated Neurodevelopmental Disorder Screening Tool	Sanjida Tumpa, Najia Manjur, Farhana Sarker and Khondaker A. Mamun

Session D2, Venue: Room-314

Time: 02:00PM-03:30PM

Biomedical Signal and Image Processing

	Paper Title	Authors
149	Seizure Detection System: A Comparative Study on Features and Fusions	M.K.M Rahman, Md A Mannan Joadder and Tanvir Ahammed Ashique
175	Application of Wavelet-based Maximum Entropy on the Mean in Channel Optimization for BCI	Md. Shakhawat Hossain, Simanto Saha, Md. Ahasan Habib, Abdullah Al Noman, Takia Sharfuddin and Khawza Ahmed
180	Brain tumor identification through Microstructure study using MRI	Shuvashis Das Gupta, Zaid Bin Mahbub and Khondkar Siddique-E-Rabbani
190	An Unsupervised Breast Ultrasound Image Segmentation Algorithm Using Local Histogram Features	Md. Mahbubur Rahman
202	Moving Averaging Method of RSSI Based Distance Estimation for Wireless Capsule Localization	Umma Hany, Lutfu Akter and Md. Farhad Hossain

Plenary Session P6, Venue: UIU Auditorium

Time: 03:30PM to 04:00PM

Keynote-10

Title: Neuromechanics and Nervous Systems: from Insects to In-Vivo Mechatronics

Speaker: Dr. Ravi Vaidyanathan

Senior Lecturer (Associate Professor) in Bio-Mechatronics in the Department of Mechanical Engineering at Imperial College London

Tea break

Time: 04:00PM to 04:30PM

Plenary Session P7(Panel Discussions), Venue: UIU Auditorium

Time: 04:30PM to 05:30PM

Title: **Prospects of Medical Engineering and Technology Education, Research and Professionals in Bangladesh: Challenges and Opportunities**

Speaker: Md. Anwar Hossain

Specialist in Health Care Technology Management

Technical Manager (Repair).

NEMEMW & TC, MoH & FW, Government of Bangladesh

Moderator: Prof. Dr Hasin Anupama Azhari

Dean, Faculty of Mathematical and Physical Science

Chairman, Dept of Medical Physics and Biomedical Engineering (MPBME), Gono Bishwabidyalay (University), Savar Dhaka, Bangladesh

Closing ceremony & Award giving

Time: 06:00PM to 07:00PM

Conference Dinner

Time: 07:30PM to 09:30PM