# Table of Contents

1. **TECHNICAL ACTIVITIES**
   - Prof Kukjin Chun at Western Australia Section. 4
   - IEEE ELITE (Effective Learning in Training by Experienced) 4
   - Technical Talk by Prof. Dr. Michael Pycraft Hughes 5
   - STEM Forum Series 2/2017 5

2. **AWARDS AND RECOGNITION**
   - 2016 INDIA IEl-IEEE AWARD Ceremony 6
   - IEEE Milestone Dedication Ceremony 6
   - 40th Anniversary Celebrations of IEEE Bangalore 7

3. **MEMBERSHIP DEVELOPMENT**
   - Senior Membership Elevation Workshops Conducted by Malaysia Section 8

4. **NATIONAL SOCIETY AGREEMENTS**
   - IEEE signs MoU with Engineers Australia 9

5. **REPORT ON CONFERENCES / CONGRESS**
   - TENSYMP 2017 Report 10
   - Malaysia IEEE Microwave Seminar 10
   - 2017 IEEE iAIM Bangalore 11
   - ICICCI-2017 IEEE UP Section 12

6. **STUDENT ACTIVITIES**
   - Higher Studies in Research 13
   - IEEE Bangladesh Section Student Branch ExCom Summit 2017 13
   - Developing Web Application from Scratch 14
   - Workshop on PCB Designing Arranged at AUST 14
   - Seminar on Optoelectronics of Silicon Solar Cells and Modules 15
   - Rethinking IEEE AUST Student Branch 15
   - NIE Summer of Code 4.0 16
   - Technical Talk on Photonics Technology 16
   - Independence Day Celebration 17
   - MTTTS University of Peradeniya Student Branch Chapter 17
   - Distinguished Lecturer Program (DLP): Prof Grant Anthony Covic 18
IEEE Envision 2017
Leadership Training Program
CloudHack'17
Workshop on "Introduction to Basic TCAD"
"Tawanai" workshop on Solar Panel Installation
Workshop on "Basic Automobile Engineering"
Workshop on Career Growth & Future Prospect of Power Sector in Bangladesh
Seminar on Anger Management
Workshop on "Advanced Microsoft Office Tools"
Orientation Ceremony of IEEE UIU student Branch-2017
Inaugural Ceremony of IEEE Student Branch of Green University of Bangladesh
Seminar on Optoelectronics of Silicon Solar Cells and Modules

7. YOUNG PROFESSIONAL ACTIVITIES
IEEE TENSYMP 2017 – Kerala Section – YP Track
Volunteer Training Conducted by IEEE Kerala YP
IEEE YP Sri Lanka's Drive Towards a Greener Future
Two Days Long Research Workshop Conducted by YP Hyderabad
Australia New Zealand Student and Young Professional Congress (ANZSCON)

8. WOMEN IN ENGINEERING
First Anniversary of IEEE AUST SB WIE Affinity Group Celebrated
Communication Camp
Career Management through Personal Leadership
2017 Wearable Technology Fashion Show
Hand's on session on Thesis Writing Tool
Workshop on Graphic Design

9. HUMANITARIAN ACTIVITIES
SS12: Project Competition & Maker Fair
Flood Relief Campaign by IEEE Sri Lanka Section.

10. SOCIETY CHAPTER NEWS
Alumni Meetup and Closing Ceremony of SPARK 4.0
SPARK 4.0A Two Day Mega Event of IEEE PES NEDUET Chapter
IEEE CES Chapter UET Taxila Organized Workshop on MATLAB
11. GENERAL ARTICLES

IT in Jul Aug Sep 2017
A Look at Stealth Bomber Technology
ULTRASONICS: Cleaning Silently with Sound Waves
Cost-effective Quantum Moves a Step Closer
Millimeter Wave Sensing Advances Autonomous Automobiles
A Focus on Image Processing with Neural Networks
1. TECHNICAL ACTIVITIES

Prof Kukjin Chun at Western Australia Section.

Cesar Ortega-Sanchez
Section Chair, Curtin University, Western Australia

After his active participation in ANZSCON and the Sections Congress in Sydney Professor Kukjin Chun visited Perth in Western Australia. The local Section organised a technical event where the Region 10 Director shared with IEEE students and members his vision for the Region and encouraged the Section to be more proactive in bringing IEEE activities and events to Western Australia. He also presented some aspects of his research in nanotechnology, a topic that is gathering momentum in the universities of Western Australia. After the presentation the Section invited students and members to have dinner with the Director. Professor Chun was very approachable and spent a good deal of time talking and listening to students. His words of encouragement gave a big boost to the enthusiasm of all who listened to him.

IEEE ELITE (Effective Learning in Training by Experienced)

M.Saeed Ul Hassan Raza
Assr, IEEE Islamabad Section

*Project IEEE ELITE (Effective Learning in Training by Experienced) is a successful initiative by SAC Team 2017 IEEE Islamabad Section, R10, Pakistan. The basic objective of IEEE ELITE includes providing training to student branches by visiting or gathering inactive student branches, newly open student branches and Peshawar Subsection student branches. It also includes involving SAC Team, section active SBs and IEEE experienced members for training and visiting student branches. Training includes effective videos, smart lectures & documented flow. These materials can easily be used in future by SBs as e-learning. The top most benefit of IEEE ELITE is that a student Team will learn how to work, volunteer & smartly manage an IEEE SB properly and professionally along with their studies & getting collective and personal benefits from IEEE.
*IEEE ELITE Session1 was successfully organized at recently opened new SB i.e. IEEE FAST-NU Peshawar SB on Sep 6, 2017. It was a great start which further opened up ways to future IEEE sessions.

Technical Talk by Prof. Dr. Michael Pycraft Hughes

Siti Anom Ahmad
Vice-Chair, IEEE EMBS Malaysia Section, Malaysia

The IEEE EMBS & EDS Chapters of Malaysia together with the Department of Electrical & Electronic Engineering, Universiti Putra Malaysia organized a technical talk on ‘Studying and Sorting Cells and Other Particles using Dielectrophoresis’. This talk discussed developments of technology to exploit activity of the cell from an electrical (rather than biochemical) perspective, unlocking for the first time the study of high-speed cellular electrophysiology and cell separation using a novel approach to electrode manufacture – the Dielectrophoresis (DEP)-well.

This talk was held in Gallery 2, Faculty of Engineering, Universiti Putra Malaysia on 21st April 2017. The speaker was Prof. Dr. Michael Pycraft Hughes from University of Surrey, United Kingdom. He is also the Director of the Centre for Biomedical Engineering at the same university. Participants were mainly from academia, researchers and postgraduate students. We had 34 participants attended the talk and there were around fifteen IEEE members.

STEM Forum Series 2/2017

Norliza Mohd Noor
Treasurer, IEEE EMBS Malaysia Chapter, Malaysia

For Malaysia to be a developed nation, it needs to increase ratios of science students to 60:40. Presently the national ratio is 29:71 (Science: Social Science). In light of this, the National STEM Movement and UTM Razak School of Engineering and Advanced Technology organized the STEM Forum with sponsorships from IEEE EMBS and I&M Malaysia Chapters. The event aimed to bring greater awareness on the importance and relevance of STEM. This forum was held on 8th of April, 2017. We had approximately 40 participants(non-members). Our speakers were Prof Dato’ Noraini Idris, Chairman of National STEM Movement, Prof Datuk Dr Halimaton, Fellow of Malaysia Science Academy, Dato’ Ghazali from Nusantara Al-Ghazali, Mr Ramesh Pillai, Executive Secretary of MACRI, Mr Chong Yu Zheng from IEEE EMBS Malaysia Section, Assoc. Prof Dr Norliza Mohd Noor, Assoc. Prof Dr Robiah Ahmad and Dr Rudzidatul.
2. AWARDS AND RECOGNITION

2016 INDIA IEI-IEEE AWARD Ceremony

Puneet mishra
Vice chair, IEEE Bangalore section

2016 IEI-IEEE Award for Engineering Excellence ceremony was organized on July 16. Prof. Debabrata Das, Chair, Bangalore Section welcomed the Chief Guest, Dr. S. Christopher, Chairman, DRDO, Prof. Anurag Kumar, Director, IISc and Award Recipient, Dr. M Annadurai, Director ISRO Satellite Centre. Award Medal and Certificate were handed over to him by Chief Guest. IEEE Board was represented by Mr. Ramakrishna Kappagantu, whereas IEI Board was represented by Dr. M. Vasagam.

IEEE Milestone Dedication Ceremony

Masataka Nakazawa
Chair, Institute of Electrical Communication, Tohoku University, Sendai Section

The Dedication Ceremony for the IEEE Milestone “Discovery of the Principle of Self-Complemenentarity in Antennas and the Mushiake Relationship, 1948” was held on July 27, 2017 in Sendai, Japan. Prof. Masataka Nakazawa, Chair, IEEE Sendai Section, gave an opening address. Dr. W. Ross Stone, representative of the IEEE gave a speech and presented a commemorative plaque to Prof. Susumu Satomi, President, Tohoku University. He also presented a miniature of the plaque to Prof. Yasuto Mushiake, the contributor of the Milestone, Professor Emeritus, Tohoku University. Prof. Satomi gave an acceptance speech on behalf of Tohoku University.
40th Anniversary Celebrations of IEEE Bangalore

Puneet mishra  
Vice chair, ieee bangalore section

40th Anniversary of IEEE Bangalore Section was celebrated in a grand function at Hotel Sterlings MAC, Bangalore on July 16, 2017. Dr. S. Christopher, Chairman, DRDO and Secretary, Department of Defence R&D, Govt of India was the Chief Guest. Prof. Anurag Kumar, Director, Indian Institute of Science was the Guest of Honor. Prof. Debabrata Das, Chair, IEEE Bangalore Section welcomed all. He briefed about significant achievements and major initiatives of IEEE Bangalore Section. Subsequently video message received from Ms. Karen Bartelson, IEEE President and Prof. Kukjin Chun, Director, IEEE R10 was played. Section felicitated all its Past Chair by a Silver Plaque for their enormous contribution as section chair.
3. MEMBERSHIP DEVELOPMENT

Senior Membership Elevation Workshops Conducted by Malaysia Section

Fawnizu Azmadi Hussin
Vice Chair, Universiti Teknologi Petronas, Malaysia Section

To improve the member retention, Malaysia section has been conducting hands-on workshops for members to submit their Senior Membership application. In 2017, the program was coordinated by Fawnizu Azmadi Hussin, Vice Chair of Malaysia Section who handles the membership development portfolio. In order to maximize the impact and opportunity to all members in Malaysia eight workshops were conducted throughout the country at six locations from north to south of peninsular Malaysia and two locations in east Malaysia (Sarawak subsection). To optimize cost and effort, each workshop is jointly organized with a technical chapter. This effort resulted in a good growth of senior members in Malaysia the last few years. The workshops also provided a networking opportunity between the members, who are mostly senior engineers and academics in their respective fields. The engagement session provided an excellent avenue for section to recruit more active volunteers.
IEEE signs MoU with Engineers Australia

Eddie Custovic
Chair, Victorian Section

During the recently held IEEE Sections Congress in Sydney, Australia, the IEEE signed a memorandum of understanding with the governing body of the engineering profession for Australia, the Institute of Engineers Australia. The documents were officially signed by IEEE President Ms. Karen Bartleson and by Engineers Australia CEO Mr. Peter McIntyre. The signing was witnessed by a large audience and overseen by Eddie Custovic, Chair of the IEEE Victorian Section and Zia Ahmed the Chair of the IEEE Australian Council. IEEE is committed to working with other National Societies such as Engineers Australia to aid engineers and scientists throughout the world. These cooperative relationships are established through a memorandum of understanding and are known as National Society Agreements. Ms Karen Bartleson stated that “IEEE is committed to working cooperatively, not competitively, with local organizations in countries throughout the world.”
5. REPORT ON CONFERENCES / CONGRESS

TENSYMP 2017 Report

Mini Ulunat
Chair, Kochi Sub Section, Kerala

TENSYMP 2017, the 3-day Spring conference of IEEE Region 10, was held in Le Meridian Hotel, Cochin, Kerala, India, from July 14th to 16th 2017. TENSYMP 2017 was inaugurated on 14th July 2017 by Dr. K. T. Jaleel, the Hon. Minister for Local Self Government, Kerala State. Dr. U.B. Desai, the Director of IIT Hyderabad delivered the keynote on the topic “Technology for Smart Cities”. The Conference saw the top international leaders from IEEE and Region 10 (Asia Pacific), as well as representatives of the IEEE Sections in different parts of India.

The first plenary talk was by Mr. A. P. M. Muhammed Hanish IAS who spearheaded the Cochin Smart City project. The second plenary talk was by Dr. Kukjin Chun, Director of IEEE R10. TENSYMP 2017 featured high quality tutorials, workshops and Industry sessions, and keynotes from prominent research and industry leaders. Over 133 scholarly papers were presented.

Malaysia IEEE Microwave Seminar

Azah Syafiah M. Marzuki
Executive member of IEEE Malaysia AP/MTT/EMC Joint Chapter

IEEE Malaysia AP/MTT/EMC Joint Chapter Malaysia initiated Malaysia IEEE Microwave Seminar (MY-IMS) series in 2017 to provide a platform for local industries, regulatory bodies, government agencies and education sectors to meet up, discuss and share views and experience. The 1st MY-IMS was hosted by Tekmark and speakers are from Keysight Technologies and Malaysia’s Science and Technology Research Institute for Defence (STRIDE). The second one was hosted by Genetron Sdn Bhd and Anritsu, contributed speakers from India and Singapore. The 3rd series was hosted at National Instruments Academy and Innovation Nucleus (NI-AIN) and it was full house.
The 4th and 5th series were hosted by Connected Mobility Lab, TM R&D. Keysight Technologies contributed speakers from Japan for the 4th series and Rohde & Schwarz brought in speakers from Germany and Singapore for the 5th series. Overall, the attendees gave very good feedbacks and encouraged the committee to keep up the good work.

2017 IEEE iAIM Bangalore

Puneet Mishra
Vice chair, IEEE Bangalore section

IEEE Bangalore Section in association with AP/MTT Joint Bangalore Chapter is organizing an International Conference on Antenna Innovations and Modern Technologies (iAIM- 2017). This conference will take place during 24-26 November 2017, at Sterlings Mac Hotel, Bangalore, India. Main objective of the iAIM-2017 is to bring the synergy between the industry and academia. iAIM-2017 will include invited talks, tutorials from international experts, and contributory paper presentations. Eminent speakers from International Space Agencies, Defense establishments, National Research Organizations and Industries will deliver talks and tutorials. Participants will be from various labs of ISRO, DRDO, BEL, NAL, HAL, CABS, ADA, ADE, LRDE, IISc, IITs other R&D organizations and Academic institutes. There will be dedicated workshop on: (1) Next Generation Ground, Aircraft and Satellite Antennas, (2) Standards on Antennas (3) 5G Antennas (4) Next Generation measurement techniques and (5) Antennas for Humanitarian Technology. For students Travel Grants Registration, Keynote & Invited Speakers, Sponsorship and Exhibit Opportunities kindly visit: www.ieeeiaim2017.org
ICICCI-2017 IEEE UP Section

Mohit Arora
IEEE UP Section

The conference was aimed at providing a platform for researchers, scientists, industrial professionals and students to exchange and share their research accomplishments, achievements and new ideas on the contemporary and emerging trends in Control, Communication and Information Systems.

This two-day conference started with formal inaugural ceremony in the presence of Chief Guest, Prof. (Dr.) M.P. Poonia, Vice Chairman, All India Council for Technical Education (AICTE). Inauguration was followed by keynote address by Dr. J.Ramkumar, Hon’ble Chairperson, IEEE UP Section & Prof. Kazuo Yamamoto, Vice President, Asian Institute of Technology, Thailand were present on the first day. The Second day started with a keynote address by Dr. Nitin Kumar Tripathi, Professor, Asian Institute of Technology Bangkok, Dr.Asheesh Kumar Singh, Vice Chairperson, IEEE UP Section and Prof. A.K. Tripathi, IIT-BHU, Varanasi. The valedictory ceremony was presided by Dr. S.Chatterjee Principal, UCER Greater Noida. He shared some feedback about the conference followed by certificate distribution ceremony.
6. STUDENT ACTIVITIES

Higher Studies in Research

Tamara Ena
Newsletter Editor, IEEE Student Branch University of Dhaka

IEEE Student Branch DU along with Electrical & Electronics Club-EEC organized the first of a series of Higher Studies Abroad Seminar titled Seminar on Higher Studies Abroad 1: Research and Study in USA. The seminar was conducted by Syed Ahmed Al Muyeed, Graduate Research Assistant, Lehigh University, USA. The event was attended by 60 participants from various universities. Mr. Muyeed, who has already completed the first year of his PhD program, concisely described the pathway towards US universities. He briefed on the processes involved in applying to US universities after graduating and discussed his own experience undertaking the steps while imparting valuable advice for the process. He then proceeded to convey his own research experience and life in USA cultivating zeal among the participants to pursue their higher education abroad. The event concluded by presenting Mr. Muyeed a small token of thanks on behalf of IEEESBDU and EEC.

IEEE Bangladesh Section Student Branch ExCom Summit 2017

Shaer Ahmed
Content Coordinator, IEEE Bangladesh Section SAC

On 21st July 2017, IEEE Bangladesh Section and IEEE Stamford University Student Branch jointly organized “IEEE Bangladesh Section Student Branch ExCom Summit 2017” at the auditorium of Stamford University Bangladesh. This event was attended by the respected Branch Counselors, Chairs, and WIE AG Chairs of 24 Student Branches from all over country. Members of IEEE Bangladesh Section Executive Committee and SAC members were present in the event and shared their constructive guidelines to the participants. They also discussed on how the branches could improve and develop their activities and the relationship with other branches. The representatives of the branches presented their activities throughout the years and gave an overview of their future plans. At the end of the event, vital instructions were given to all IEEE student branches by Prof. Dr. Celia Shahnaz,
Vice Chair (Activities), IEEE Bangladesh Section, about how to coordinate the branch activities and plan for future events.

**Developing Web Application from Scratch**

*Tamara Ena*
*Newsletter Editor, IEEE Student Branch, University of Dhaka*

IEEE Student Branch DU organized a workshop on Developing Web Application from Scratch on the 25th of August 2017 at the Department of Computer Science and Engineering, University of Dhaka. Many pre-registered candidates from multiple universities attended the half day long workshop overseen by Sanjay Saha, Lecturer Department of Computer Science and Engineering, United International University.

The supervisor commenced the workshop distinguishing between Website and Web Application. He proceeded to discuss the different programming languages involved in website and web application development, namely HTML5, JavaScript, CSS, Ajax, JQuery and PHP outlining differences and similarities between them. He also brought to light the different steps and miscellaneous impediments regarding development of a Web Application.

The workshop concluded with presenting Sanjay Saha with a small token of gratitude on behalf of IEEE SB DU by Walid Bin Habib, Chair, IEEE SB DU.

**Workshop on PCB Designing Arranged at AUST**

*Shaer Ahmed*
*Student Branch Vice Chair, IEEE AUST Student Branch*

IEEE AUST Student Branch organized an inter-university workshop on Printed Circuit Board (PCB) Designing using Proteus on Thursday, July 6, 2017 at the department of EEE, AUST. The four-hour long workshop was instructed by Mr. Tashfiq Bin Kashem and Mr. Anupam Golder, who are currently working as an Assistant Professor and a Lecturer, respectively at the Department of EEE of Ahsanullah University of Science and Technology. 53 students from 6 different institutions participated in the workshop who acquired experience of designing and making a print ready PCB using Proteus. After the workshop session a designing contest was arranged based on the topics discussed.
in the session and the first three contestants to finish the design were awarded at the presentation ceremony arranged afterwards. All the participants were provided with certificates and snacks at the end of the workshop.

Seminar on Optoelectronics of Silicon Solar Cells and Modules

Newsletter Editor, IEEE Student Branch University of Dhaka

Seminar on Optoelectronics of Silicon Solar Cells and Modules was held on 9th July 2017 by IEEE Student Branch DU in association with IEEE WIE Affinity Group Student Branch DU at the Department of Electrical & Electronic Engineering, University of Dhaka. The seminar was conducted by Dr. Brij Mohan Arora, Professor, IIT Bombay. The event was attended by staggering 140 enthusiasts from various universities and research institutes. Dr. Arora elaborated on recent trends, ongoing researches and the future of silicon solar cells and showcased the latest solar panel designed. A Q&A session allowed participants to engage in many to one discussion with the speaker.

The event concluded presenting the speaker with a token of thanks on behalf of IEEESBDU, IEEE WIE AG SB DU and EEE, DU, by Dr. Zahid Hasan Mahmood (Professor, EEE, DU), Dr. Jalalur Rahman (Ex-Professor, EEE, DU) and Dr. Khondokar Siddique Rabbani (Professor, BMPT, DU).

Rethinking IEEE AUST Student Branch

Shaer Ahmed
Student Branch Vice Chair, IEEE AUST Student Branch

IEEE Ahsanullah University of Science and Technology (AUST) SB was formed in 2003. It is one of the earliest student branches to be formed in the country and remains as one of the most vibrant branches of IEEE Bangladesh Section. To revolutionize the activities of the branch, the executive committee came forward to reintroduce the branch in a re-branding event held on 6th August, 2017 entitled “Rethinking IEEE AUST Student Branch”. This grand event was designed to introduce a completely redesigned logo of the branch, the new and official website, inauguration of new notice board, launching of mobile app and launching the membership drive for 2018. The newly launched website is live at: http://www.ieeeaustsb.org/
NIE Summer of Code 4.0

Rishabh Dev Manu
SAC Coordinator, NIE IEEE Student Branch

NIE Summer of Code was five days long workshop conducted by NIE IEEE Student Branch from 1st June 2017 to 5th June 2017 at the NIE campus. The main objective of this 5 days long event was to empower students and to make them up-to-date with different trending and hot technical skills in the field of hardware and software and to enable them to solve and build real-time technical answers to the societal problems. This event witnessed a footfall of more than 80 participants from different colleges from all over Karnataka. The workshop consists of different trending and hot technical topics like ATMEGA, Advanced Robotics, Sensors, Cryptography, Programming with Python, HTML5, Bootstrap and AWS along with the hands-on sessions on them. The fourth day of the workshop also witnessed two tech talks by different eminent speakers. Overall, this event was a huge success and students learned a lot.

Technical Talk on Photonics Technology

Dr. K.V.S.S.S. Sairam
Branch Counselor, NMAMIT Nitte, IEEE Bangalore Section

Technical Talk on Photonics Technology was delivered by Dr. Gopal Krishna Hedge, Department of CNSE, from IISc, Bangalore. There were 36 IEEE members along with 40 Non-IEEE members in the event. The Talk of the morning session was concluded at 1 PM by Dr. M. K. Parashuram, Director, EC department by delivering a Memento to the speaker. Second session started at 2 PM on “Nanophotonics” by Dr. Gopal Krishna Hedge. Dr. K.V.S.S.S.Sairam invited the speaker in Phalguni Seminar Hall. The Talk was concluded at 4 PM and Dr. M.K. Parashuram delivered the Memento to the speaker. The Validatory function was held at 4:30 and Dr. K.V.S.S.S.Sairam delivered the vote of thanks.
Independence Day Celebration

Furqan Farooq
Chairperson, IEEE Islamabad Section

IEEE SB UET Taxila celebrated Pakistan's 70th Independence Day with zeal and zest. An event was arranged in order to celebrate 70 years of freedom. Event started with the recitation, following with the speech on Independence of Pakistan. The celebration also included result announcement of Pakistan Independence Photographic and Essay Writing competitions. IEEE SB UET Taxila distributed certificates among the winners and runner-ups of the competitions.

MTTS University of Peradeniya Student Branch Chapter

Thusharani Wijegunarathna, Prabodi Senevirathna
SBC, Sri Lanka section

The latest event organized by the IEEE MTT-S SBC UoP is the field visit to Bandaranaike International Airport, Katunayake. The participants visited control tower, radar control center, technical rooms, fire unit, Primary Surveillance Radar and Secondary Surveillance Radar Units. Participants had live experience on how the air traffic controlling is done using the radar and Navigation systems in Air Traffic Control center. A huge support was given throughout by the Electronics and Air Navigation Engineering Division of Airport and Aviation Services (Sri Lanka) Ltd. Undoubtedly this would be an unforgettable experience for the participants.
Distinguished Lecturer Program (DLP): Prof Grant Anthony Covic

Norezmi Jamal  
Secretary, IEEE UTHM Student Branch

On 13 August 2017, IEEE Power Electronics Society with IEEE UTHM Student Branch and Faculty of Electrical and Electronic Engineering, Universiti Tun Hussein Onn Malaysia (UTHM) had jointly organized the Distinguished Lecturer Program (DLP) talk at Al-Jazari Auditorium Room, Tunku Tun Aminah Library, UTHM. There were about 30 participants of IEEE and non-IEEE members from different university such as UTHM, Universiti Teknologi Malaysia (UTM) and also Universiti Tenaga Nasional Berhad (UNITEN) attended this talk. This talk had begun with the welcoming address by Chairman of IEEE UTHM SB and next proceed the talk.

IEEE Envision 2017

Shaista Naz  
Vice-Chairperson, IEEE NEDUET Student Branch, Karachi Section

On 26th and 27th August IEEE NEDUET Student Branch organised Envision’17, Passion to Profession. Envision was primarily aimed for the students who had an idea or a start-up plan and were passionate to polish it. An NED start-up by the name of Munphurid Tech had arranged for their robot named as Chotu, to host Envision, leaving the people in awe. The jury were Syed Mohsin Rizvi; CEO - Film Company, Raja Sabri Khan; CEO - Integrated Dynamics, Farrukh Bhabha; CEO - Print3D and Amir Abbasi; Head HR - PMEX. Round1 Elevator Pitch and Round2 Creative Endorsement commenced on Day1. Third round i.e. project presentation was scheduled on Day2. The four female entrepreneurs of NED presented their start-up Armez, a laser tag game. Dr. Javed Memon; Director of Higher Education Commission of Pakistan was the Chief Guest. Golden Liquid - third, Scene On - second whereas Fashion with Tech took first place.
Leadership Training Program

*Risha Fathima, Director Documentation, IEEE IAS NEDUET SB, Karachi*

The leadership training was held on 29th of July with the aim to aspire students to become great leaders, to lead with flair and authenticity and to stretch their ‘comfort zones’ into new and challenging territory. The entrepreneur and sought-after speaker Mr. Bilal Ghumman conducted the training. The objectives of the program were:

- To develop inkling of entrepreneurship and spur them to explore their creative ideas.
- Give youth the confidence and knowledge to conduct a youth-run program.
- Empowering, motivating and inspiring others.
- Gaining insight into one’s patterns, beliefs and rules.
- Determining how well one perceives what’s going around.
- Understanding good leadership behavior.
- Exponential and outcome thinking and finding your why.

There were 30 participants who were able to achieve these objectives via open discussion, questionnaire, and practical demonstrations providing them with essential leadership skills.

CloudHack’17

*Hemanthi Wimalasiri*

*Coordinator IEEE Student Branch of UCSC, Sri Lanka*

CloudHack’17 was held on 12th of August at UCSC with great success. It was organized by the IEEE Student Branch of University of Colombo School of Computing in collaboration with the Google Developer Group Sri Lanka. The primary intention of the event was to instil the potential of cloud computing as a powerful tool in developing solutions having both real world implications and demanding computational requirements.

It was a 24-hour hackathon and 10 teams consisting of 4 members were selected out of around 250 applicants from local universities. It was wonderful to see team’s motivation to get consultation from industry experts who were there to mentor. After 20 hours of tremendous work, the teams presented their final outcomes to the judge panel consisting 6 experts in different areas. After evaluation, Team Avadhi from SLIIT was awarded as the Champions. It was an amazing event and a great experience.
Workshop on "Introduction to Basic TCAD"

Noore Juned,
Student Branch Secretary, IEEE UIU Student Branch, Bangladesh Section

The facilitator for this workshop also shared his views about the importance of the TCAD device simulation tools, and how invaluable they are in the research and development of new technology at the level of semiconductor process and device design. By the end of the workshop, the participants were well aware of the fact that these tools are very much appropriate for the analysis and characterization of semiconductor structures and devices standing alone and/or coupled to integrated circuits. By the end of the workshop, the participants were well experts in handling the TCAD software after learning its operations and applications, which would benefit them in both their academic and professional lives.

"Tawanai" workshop on Solar Panel Installation

Risha Fathima,
Director Documentation, IEEE IAS NEDUET SB, Karachi

The event “Tawanai” based on solar panel installation held on July 21st, was successful in conveying some superficial ideas regarding the needs of this developing country and solving them in light of the inexhaustible reserves of energy that can be harnessed. The session was conducted by Zaid Pirwani, Co-Founder of EjadTech and a social entrepreneur. The topics covered were:

- Affordability of solar panel installation
- Energy needs fulfilled by these installations
- Basic composition and working of solar panels
- Other necessary parts accompanying solar panels
- Power consumption in regards to an individual and the math behind it
- Ways to improve the amperage we get from the panels
- Difficulties in their installation and how to meet them effectively

With a participation of around 80-85, the session commenced from primitive knowledge about solar panel installation and smoothly went on to discuss the deeper technicalities involved.
Workshop on "Basic Automobile Engineering"

Noore Juned  
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

On 8th June 2017 (Thursday), IEEE UIU Student Branch conducted a workshop on "Basic Automobile Engineering" which was held inside UIU premises. This workshop was organised for the students of UIU and especially for the students of EEE and CSE backgrounds. The topics that were covered in the workshop were Chasis, Engine, Transmission, Clutch, Suspension, Driveline, Steering wheels and Embedded Systems of the automobile. Mehrab Masayeed Habib, the Founder of Bangla Automobile School, conducted this workshop. He is an EEE graduate passionate about cars. Mehrab Habib developed an anti-collision system device for the automobile which was accepted as a paper in IEEE International Conference on Electrical, Communication, and Computer Engineering organised by Chittagong University of Engineering and Technology (CUET) in February 2017.

Workshop on Career Growth & Future Prospect of Power Sector in Bangladesh

Noore Juned  
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

The aim of the event was to raise awareness among all the participants about the present scenario of Power Sector, Overview of Generation, Transmission and Distribution sector and future career opportunities in our country. At first, the speaker discussed about some basic concepts and general problems related to power sector in Bangladesh. This workshop was mostly interactive after it started. The participants and the speaker connected very well in the sense that he stopped in between and answered every question and shared his personal experience in the power sector so far, and how everyone should prepare themselves if they are about to pursue their future endeavours in the power sector of this country.
Seminar on Anger Management

Noore Juned
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

The seminar started with a brief “meditation” session to help the students refresh their minds. Throughout this meditation, the counsellor helped the students to overcome any sort of traumas which troubled them. After this session, Tasnuva Huque dug deep into the participants’ mind and got to know what actually caused them to be angry in real life, the agendas, and provided effective solutions to each and every one of the students present there about how to deal with anger in healthy ways. After that, the instructor divided the existing participants into groups and allotted them time to discuss among themselves and generate ideas about how to cope with anger, the physical and emotional changes it brought to their minds while venting anger on real life situations.

Workshop on "Advanced Microsoft Office Tools"

Noore Juned
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

Women in Engineering (WIE) BDS has planned to arrange a series of workshops in different universities in collaboration with the IEEE Student Branches throughout 2017. This workshop was a part of it. This workshop has been designed so that the students get opportunities to learn new things and hone their technical skills which will help them in regular studies and research work also.
Orientation Ceremony of IEEE UIU student Branch-2017
Noore Juned
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

The orientation ceremony kicked off with an overwhelming introductory speech by our Honorable Vice Chancellor Professor Dr. Rizwan Khan, who officially welcomed the latest recruits and gave them an insight of what IEEE is all about, and explained that IEEE UIU Student Branch is the ultimate platform to enhance our networking skills, how it can motivate them to get acquainted with indigenous minds all over the world, thereby giving them an opportunity to help contribute in the advancements of science and technology.

Inaugural Ceremony of IEEE Student Branch of Green University of Bangladesh
Biplab Chandra Debnath
Branch Counselor, IEEE Student Branch of Green University of Bangladesh

Inaugural Ceremony of IEEE Student Branch of Green University of Bangladesh held on August 10, 2017 at Green Seminar Hall. In this inaugural ceremony guest of honor was Honorable Vice Chancellor Professor Dr. Md. Golam Samdani Fakir and chief guest was Professor Dr. Muhammad Abdul Goffar Khan, Vice-Chair (Technical) of IEEE Bangladesh Section. Pro vice chancellor, Professor Dr. Fayyz Khan, Advisor, Prof. Dr. Monirul Islam and Chairperson, Dept. of CSE, Prof. Dr. Abdur Razzaque, were present as special guest. Faculties, students, IEEE student members of faculty of science and engineering also were present in the program. IEEE Student Branch of GUB officially inaugurated by cutting cake by chief guest. Student branch gave the prize and certificate to the winners of Intra University programming contest.
Seminar on Optoelectronics of Silicon Solar Cells and Modules

Zinia Zerin Khan  
Program Activity Head, IEEE WIE Affinity Group SB University of Dhaka

In collaboration with IEEE SBDU and Dept. of EEE, DU, WIE AG SB University of Dhaka, organized the 'Seminar on Optoelectronics of Silicon Solar Cells and Modules' on July 9, 2017. A whopping 140 participants including faculties from different universities of the country and researches from BCSIR and Atomic Energy Comission of Bangladesh, attended the seminar. The seminar was conducted by Dr. Brij Mohan Arora, Professor of Electrical Engineering, IIT Bombay. Dr. Arora discussed the recent trends in silicon solar cells, the future of silicon solar cells and practically demonstrated the most modern solar cells ever invented. The seminar was concluded by a Q/A session with Mr. Arora. The event was concluded with a token of thanks on behalf of WIE AG SB DU, IEEE SBDU and EEE, DU, awarded by Dr. Zahid Hasan Mahmood (Professor, EEE, DU), Dr. Jalalur Rahman (Ex-Professor, EEE, DU) and Dr. Khondokar Siddique Rabbani (Professor, BMPT, DU).
7. YOUNG PROFESSIONAL ACTIVITIES

IEEE TENSYMP 2017 – Kerala Section – YP Track

Sridev Shyam K V
Volunteer, IEEE Kerala Young Professionals

IEEE TENSYMP is the Spring conference of IEEE Region 10. It was held at the picturesque location in Cochin, Kerala, India. Young Professionals had a dedicated track for the conference. The YP track started with talks on “Artificial Intelligence” & “Solar Powered Ferries”, by technical experts from the industry. They were followed by a panel discussion on “Smarter Professionals for Smart Cities”, an event open to all IEEE Young Professionals and delegates of TENSYMP 2017, where eminent and distinguished personalities from various industries and academia were present including panellist Dr. Kukjin Chun, Director IEEE R10.

Volunteer Training Conducted by IEEE Kerala YP

Sridev Shyam
Volunteer, IEEE Kerala Young Professionals

One of the main events of IEEE Kerala Young Professionals in 2017, IEEE VOLT – Volunteer Training was held on the 1st & 2nd of July 2017 at the Santhigiri Ashram in Aluva, supported by IEEE Region 10 Young Professionals. It was a well-organized residential event, aimed at training volunteers and educating them about IEEE’s activities and ethos, highlighting the journey of Kerala Section to its current status of glory. There were several presenters from the Industry and Academia who tackled and simplified various topics related to volunteering as a whole while using the case studies of the previous successes of IEEE Kerala Section as a foil along with fun group activities for team bonding.
IEEE YP Sri Lanka's Drive Towards a Greener Future

Peshan Sampath
Secretary, IEEE YP Sri Lanka

“TrailBlazers’17”, a STEP event by IEEE Young Professionals Sri Lanka under the theme of “1000 steps towards sustainability: Water, Energy and Solid Waste”, took place on 30th July in 3 different locations in Sri Lanka, viz Delkanda, Matara and Kandy. The YP team and students disseminated knowledge on sustainable living, explaining them the future environmental challenges like garbage disposal issues while creating the awareness on how every individual could contribute to reducing the damage inflicted upon the environment each day. As an encouragement and a guide, new polythene bags were gifted an attractive reusable bag and made them listen, and to remember them what is said for some time. The project addressed a timely issue and was a huge success. IEEE Team would like to thank all the parties who joined with them including IEEE YP, to spread the message towards a greener tomorrow.

Two Days Long Research Workshop Conducted by YP Hyderabad

Sanmithra Mudigonda
Secretary, IEEE Hyderabad YP

Two days long Research Workshop was held at IIIT Hyderabad, by IEEE Young Professionals Hyderabad Section on 26th and 27th August, 2017 with research scholars, masters students and faculty as the intended audience. The topics touched upon by the well-qualified speakers were extensive, ranging from "How to get reviewer’s opinions before submitting a Paper?", "Industry Academia Collaboration", "How to approach for Research Internship in Indian/Foreign Universities to”, “Philosophical discussions on some basic aspects of Research” and "Maintaining one’s health during pursuing one’s Research". While all the speakers were brilliant, the most enjoyed talk was given by Dr. KPJ Reddy from IISc, inventor of the Reddy tube on "How to take a Research idea and convert it into a Marketable Product". Close to 145 members have attended and benefitted from this workshop, which was the first of its kind. It has garnered huge appreciation from various research participants and speakers alike.
ANZSCON 2017 was held at the University of Technology Sydney on the 10th and 11th of August. The theme of the congress was leadership and humanitarian technologies. The two-day program provided a range of options for attendees to develop both knowledge and build networks. A number of keynote sessions were held, most undertaken in an interactive format. Some of the most popular keynotes included transitioning from a student to a young professional; seeking funding for start-ups; and engaging with IEEE Sight. Breakout sessions were categorised under three tracks: Student, Young Professional and Women in Engineering. The sessions were interactive based on growing the respected communities and developing leadership skills. Various dignitaries attended the congress, including the IEEE President, Karen Bartleson, and the Region 10 Director, Kukjin Chun. The congress also celebrated Region 10’s 50th anniversary with a cake cutting ceremony.
8. WOMEN IN ENGINEERING

First Anniversary of IEEE AUST SB WIE Affinity Group Celebrated

Shaer Ahmed
Student Branch Vice Chair, IEEE AUST Student Branch

Formation of the Ahsanullah University of Science and Technology Women In Engineering Student Branch Affinity Group in the Bangladesh Section was approved on 21 July 2016 with the geo-code SBA63101. It has been over a year since that day. During this time period WIE Affinity Group of IEEE AUST SB has worked relentlessly to uphold what it stands for. To celebrate this memorable journey, IEEE AUST SB WIE AG celebrated their one-year anniversary on 30th July, 2017 in an exciting and joyous ceremony with teachers, students and former members of the branch. The event included activities like sharing experiences of IEEE AUST SB WIE AG members who recently attended IEEE WIE Leadership Summit at Goa earlier the month and talking about importance of participation of women in the engineering field. The event closed with celebrating the anniversary with cutting cake and photo session.

Communication Camp

Lubaba Bazlul
Sub Executive, IEEE NSU Student Branch, WIE Affinity Group

With the motive to develop the communication skills of the participants INSB WIE AG came up with “Communication Camp” on 10th and 11th of July on North South University. 115 students registered for the event from different universities. It was dedicated to promote Women in Engineering and inspire people around the country to capitalize on their communication strengths, adjust to accommodate their weakness and learn from our special guidance. The event was packed with Presentation Hacks, Public Speaking, Corporate Grooming, CV Writing and Content Writing. The Camp helped the participants with their daily struggles and the challenges they will face in the corporate world. So, the response was tremendous and the event was a success.
IEEE WIE AG UET Taxila arranged a seminar on career management through personal leadership under the banner of SPAA (Student Professional Awareness Activities). The main objective of this seminar was to provide a platform to the students to get professional awareness and information about the selection of their careers according to the challenges of modern world. With the advancement of science and technology, having only good academic background is not sufficient. One must have some personal and interpersonal skills to survive in this competitive world. In short, this seminar was to inform the students about such skills and capabilities that will help them to proceed into their professional careers with flying colors.

2017 Wearable Technology Fashion Show

Teodora Raducan
Chair, Women in Engineering, IEEE La Trobe Student Branch, Victorian Section

The 2017 Wearable Technology Fashion Show organised by Women in Engineering, IEEE La Trobe Student Branch took place on the 16th of August in Melbourne, Australia. The student branch was honoured to have the IEEE Global Presidents and other distinguished guests as attendees for the event and the guest speaker was Dr. Aleksandar Mastilovic. The designs were entirely made by a team of 8 people, coordinated by Teodora Raducan, Chair for WIE (IEEE La Trobe). There were also two designs from Viewbank College, under the supervision of La Trobe WIE volunteers. This event aimed to promote engineering and related fields, and to encourage females to join male-dominated professions. An overview of the show can be seen here: https://youtu.be/fNs81lzQnn8. WIE La Trobe would like to thank the sponsors (La Trobe University, LEAP and Pakronics), the models and media volunteers and all the people who contributed in making this a great event!
Hand's on session on Thesis Writing Tool

Raisa Fabiha  
Newsletter Editor, WIE AG, IEEE Bangladesh Section

On 22 July 2017, IEEE EWU Student Branch and WIE AG, IEEE Bangladesh Section jointly organized a workshop on thesis writing tool at ICS Practice Lab of East West University. The workshop was conducted by Nafisa Zarrin Tasnim, Assistant Engineer, Energypac Engineering Ltd. and Professional Activities Coordinator, WIE AG, IEEE BDS and Syeda Iffat Naz, Assistant Engineer, Energypac Engineering Ltd. and Webmaster, WIE AG, IEEE BDS.  
The conductors briefed about the software MIKTEX and showed how to install missing packages which is common problem for the software. They also instructed how to write code on MIKTEX and helped the participants if they faced any problem. In the final session, the students got the chance to interact with the conductor through questions. A total of 38 students participated in the workshop. Among them 22 were IEEE and 16 were non-IEEE members and participation of female in the workshop was above 35%.

Workshop on Graphic Design

Raisa Fabiha  
Newsletter Editor, WIE AG, IEEE Bangladesh Section

Primeasia University EEE Club and WIE Affinity Group, IEEE Bangladesh Section jointly organized "Workshop on Graphic Design" on 28 July, 2017 at General Purpose Computer Lab, Primeasia University. Rubia Siddiqua, Senior Executive, Sanofi Bangladesh Ltd. and Graphic Designer, WIE AG, IEEE BDS was present as resource person throughout the workshop. Rubia Siddiqua introduced the students to the basic elements and different tools (selection tools, drawing tools, reshaping tools, painting tools) of Adobe Illustrator CC 2017 and showed how to use them in drawing different shapes (rectangle, polygon, circle, star) and free hand objects. She also answered and explained various questions on anchor points and vectors. Finally, Rubia Siddiqua showed some sample designs and artworks and demonstrated on adjusting thresholds and fills and strokes. 20 students including 3 IEEE members participated in the workshop. The workshop put positive impact and the students expressed their interest in arranging such workshops in future.
9. HUMANITARIAN ACTIVITIES

SS12: Project Competition & Maker Fair

Noore Juned  
Student Branch Secretary, IEEE UIU Student Branch, IEEE Bangladesh Section

23 teams who were selected for the local final, took part in this event and the one team "Odommo Bangla" who emerged victorious, would represent Bangladesh in the Final Round in India, where they will compete against 11 other champions from IEEE Region 10. This international student project competition encourages innovative students to take up the initiative of making their application as a prototype model, demonstrate it and educate themselves through this innovation. Very soon after the introductory speech, all the judges started the judging session where all of them roamed around the auditorium and scrutinized each and every single project of all the 23 teams. The SS12 left an everlasting effect on the students. They were more inspired and encouraged in the end of the competition, determined to contribute more in the Humanitarian fields, which would help our society and keep intact the rich enigmas of humanity.

Flood Relief Campaign by IEEE Sri Lanka Section.

Chanaka Hettige  
IEEE Sri Lanka Section

Over the month of May, Sri Lanka was devastated by flooding, displacing more than half a million and taking the lives of over 200 personal. Whole island came together to help the ones in need and IEEE Sri Lanka Section, realising its core value of advancing humanity, took steps to utilise the resources available to best serve the community. With the collaboration of all the Student Branches in the section, IEEE Sri Lanka Section raised funds to deliver 300+ Stationary Kits, Library book and class notes to Mapalagama Central College and Nagoda Maha Vidyalaya, which were heavily affected by the recent floods. Furthermore, provided Wiring Installation products worth more than LKR 20 000 and product kits to Agriculture Science Unit and Home Science Unit worth more than LKR 15 000 to Mapalagama Central College.
10. SOCIETY CHAPTER NEWS

Alumni Meetup and Closing Ceremony of SPARK 4.0

Bisma Naushad
General Secretary, IEEE PES Karachi Chapter

The founders of IEEE PES Karachi Chapter and IEEE PES NEDUET Chapter were invited in the closing ceremony of SPARK 4.0 for a live interaction and mentoring session with team members on 15th September, 2017. The Chairman of IEEE PES Karachi Chapter, Dr. Muhammad Ali Memon, alongside current PES Young Professional Members discussed the essence of Volunteerism focusing on opportunities and benefits of working in IEEE. During the event, main emphasis was on the upbringing of new talent and inculcating leadership qualities among the members as well as new strategy was designed to be followed for upcoming year's Activities and Membership drives. EXCOM for the tenure 2017-18 was announced. Shields, certificates and token of appreciation were awarded to dedicated members who worked in the year 2016-17 for IEEE PES NEDUET Chapter. Winners for SPARK 4.0 were also announced including distribution of prize money and certificates for participation.

SPARK 4.0A Two Day Mega Event of IEEE PES NEDUET Chapter

Bisma Naushad
General Secretary, IEEE PES Karachi Chapter

IEEE PES NEDUET Chapter's Mega Event SPARK 4.0 was held on 24th & 25th of August in ABB and KE labs, respectively. In order to give students a chance to outshine their skills, the Fourth Edition of SPARK came with a twist of different competitions including Marathon, Eureka, Quiz Competition, STEM Presentations, Logic Building and Case Studies in which their team building capabilities, problem solving approach, presentation skills and potential were tested. The event started with kick off point.
of Marathon in which participants ran to different stations within NEDUET Campus, collect puzzle pieces, which at the end, described a scientific phenomenon that team had to predict to qualify. Brain Games related to STEM were attempted during Eureka. Rapid Fire round with General Knowledge and Mathematics Questions in Quiz Competition, Logic Building comprising questions from Switching Theory and different Case Studies had to be solved. All reviews regarding event were positive.

**IEEE CES Chapter UET Taxila Organized Workshop on MATLAB**

*Naif Nawaz  
Chair, IEEE CES Chapter Islamabad Section*

IEEE CES Chapter UET Taxila organized a two-day workshop on the fundamentals of MATLAB. The central audience was the beginners to this software. Started first day with motivation and overview of the software, then focused on Matrices, plotting and formation of functions. Later we moved towards selection statements and loops statements. The workshop aimed on the practical performance of participants and for their practice, number of examples were solved. On second day, we shifted the axes towards the polynomials section as this is the foremost topic for most of the engineering students. At the end, we calculatingly touched the graphical user interface (GUI) to encourage the trainees to build user interfaces for projects. The responses of the participants regarding this workshop including some M.Sc. and Ph.D. students were encouraging for us.

**LaTeX Workshop**

*Iram Jahan  
Vice Chairperson, IEEE Islamabad Section*

The need to write research paper has grown ever since. Writing papers in Microsoft Word do not suffice, as the formatting is very grueling, hence the software MikTeX and LaTeX are commonly used to format the research papers.

IEEE CES UET Taxila conducted a workshop on basics of LaTeX for writing research papers. Participants were introduced to the User Interface of the software. As a practice, a small paper was written as a template for future
references. The audience was encouraged and anticipated during the workshop. Huge number of students as well as teachers participated in this workshop.

**IEEE-HKN Mu Kappa Chapter: UQ Solar Visit & IEEE Major Events**

*Kianoosh Soltani Naveh*  
*Mu Kappa Chapter President, Queensland*

The first Chapter of IEEE-Eta Kappa Nu (IEEE-HKN) in Australia and the 247th IEEE-HKN Chapter in the world was officially installed at The University of Queensland (UQ) in 2017. The Chapter is known as Mu Kappa Chapter and operates with the support from UQ. In August, Mu Kappa chapter organized a visit to UQ’s solar facility located in Gatton campus, Queensland. Prof. Tapan Saha the director of UQ Solar Research and the Mu Kappa Chapter Faculty Advisor gave an interesting presentation on PV solar technology and the features of UQ Solar facility such as real-time monitoring, multiple solar panel technologies and data collection. This was complemented by a talk from Dr Philip Wild about the economics of solar energy and the different types of solar panel technology during the tour. Overall, students came back with a deeper understanding of solar energy from one of the best facilities in the world.

**Semiconductor Technology Progression and 50 Years of Moore**

*Bhadra Pokharel*  
*Nepal Chapter Chair, Materials Science and Engineering, Pulchowk Campus, UP Section*

The integrated circuit (IC) history started more than 57 years back and the technology progression during this period has immensely helped in understanding various materials and interfaces at the most miniaturized scale. All these technological innovations and related advancements in the society are indebted to semiconductor device technology. Currently, we stand at another juncture as well, where the fruits of developments in the last century science and the depth of knowledge mankind acquired through research in material science and various mathematical tools merge to emerge in the form of nano-electronics, a new set of advancement for technological evolution. An overview of the evolution of electronics to the modern day smart devices employing nano technology was included in view of 50 years of Moore’s law. The major challenges in analysis and metrology were discussed with relevance to the limitations in application of the tools and the complexity in analysis.
11. GENERAL ARTICLES

IT in Jul Aug Sep 2017

Professor Sowmyanarayanan SADAGOPAN is the Director of IIIT-Bangalore

General

- GST is a reality on July 1, 2017; border check-post become history leading to increased supply chain efficiency, hopefully
- Launched on Aug 12, 1981 IBM PC completes 36 years; Hashtag turns ten on Aug 23, 2017
- India’s 14th President Ram Nath Kovind assumes office on July 25, 2017; Venkaiah Naidu takes charge as India’s 13th Vice President on Aug 11, 2017; Deepak Misra takes over as the 45th Chief Justice of India on Aug 28, 2017
- Modi makes a historic visit to Israel in July 2017, the first ever visit by an Indian Prime Minister
- G20 meets in Germany during July 7-9, 2017 in the backdrop of changed geo-politics
- Prime Minister springs a surprise by inducting Nirmala Sitharaman as full time Defence Minister on Sep 3, 2017 cabinet reshuffle
- Germany elects Angela Merkel for fourth time in a row on Sep 24, 2017
- Multiple natural and man-made disasters in this quarter - terrorist attack in Spain (Aug 17), Hurricane in Florida (Sep) and London Tube blast (Sep 15), earthquake in Mexico (Sep 19)

Technology

- INSAT launch on Aug 31 fails, after nearly all successful launches by ISRO in the recent months

Infrastructure

- India’s first bullet train between Mumbai and Ahmedabad formally announced by Indian and Japanese PM on Sep 14, 2017
- Lucknow Metro starts on Sep 5, 2017
- Sardar Sarovar dam (the world’s second largest) on Narmada river in Gujarat with 1,450 MW Hydel power plants commissioned on Sep 17, 2017

Markets

- Indian stock markets were on a roll in July 2017; Sensex (BSE index) went past 32,000 for the first time on July 13, 2017; NIFTY crossed 10,000 marks for the first time in its 21-year history on July 25, 2017; however, on Sep 22, 2017 Sensex fell to 31,922 and NIFTY to 9964!
- Google buys IP from HTC Pixel unit for $ 1.2 Billion on Sep 21, 2017
- Tata Steel and ThyssenKrupp decide to merge in September 2017
• Private equity firm KKR buys **WebMD** (that had connections to SGI Founder Jim Clarke and India-born Pavan Nigam) for $ 2.2 Billion on July 24, 2017

• **Freecharge** acquired by **Axis Bank** on July 26, 2017 shows signs of consolidation in “Mobile Wallets” space

• **ABB** acquires **GE Industrial Solutions** Division for $ 2.2 B on Sep 25, 2017

**Products**

• **Google** launches “**backup and sync**” on July 12, 2017, **Android 8** (Oreo) on Aug 21, India news “**feed**” on Sep 8 and Mobile Payment App **Tez** on Sep 18 in India

• **Apple** launches **iPhone X** and **iPhone 8, Apple Watch 3**; also updates its software - **iOS 11, Apple Watch OS 4, Mac OS High Sierra** in Sep; iPhone 8 pre-orders started on Sep 22 in India within a week of global launch!

• **Moto e4 plus** and **Xiaomi Mi6 Plus** launched in India on July 12, 2017

• **Nokia 6** launched in India on Aug 23, 2017; sold out in a minute!

• **HP** announces **Sprocket printer** priced $ 99 on Sep 14, 2017

• **Twitter** allows 280 characters from Sep 27

**Indian IT Companies**

• **Infosys** stock price saw loss of 9.2% in a single day on Aug 18, 2017 after CEO Sikka resigned suddenly; Nandan Nilekani is back as Infosys Chairman on Aug 24, 2017; **TCS** and **Infosys** post good results for the first quarter - April to June 2017 - $ 4.6 Billion and $ 2.6 Billion revenue, respectively

• **Reliance Jio** launches “free” feature phone, low cost bundles for Voice, data and video on July 20, 2017

• **SoftBank** invests $ 2.5 Billion in **Flipkart** in Aug 2017; **Ola** gets $ 250 million funding from **SoftBank**

• **Tata Sons** goes private on Sep 21, 2017

• **Polaris** subsidy **Intelext Bags GeM - Government Electronic Marketplace contract for 5 years on July 25, 2015; this would replace the legendary DGS&D; GeM would be the portal for all Government purchases totaling Rs 5-7 Lakh Crores ($ 100 billion)

• 400 top executives of **Cognizant** take VRS on Aug 5, 2017

• **Titan** joins hands with **Amazon** to reach US markets

• **Patni** inks JV with **Amazon** in Sep 2017

• **Wipro** gets $ 100 M order from Munich Re in Sep 2017;

• **Mahindra** tests driver-less tractors in Sep 2017

**MNC Companies in India**

• **Google** acquires Bangalore-based **HalliLabs** founded by StayZilla founder Pankaj Gupta on July 13, 2017; launches India-focused mobile payment App **Tez** on Sep 18, 2017

• **Amazon** to hire 1,000 R&D staff in India; starts the biggest (400,000 soft) storage space in Hyderabad Int’l Airport on September 8, 2017; with this Amazon has 3.2 million cubic feet of storage in India

• **Accenture** India launches a huge innovation center in Bangalore on July 26, 2017
• Suzuki starts preparation for Electric Car factory in Gujarat India in September 2017
• Boeing sets up R&D Center focused on IOT Analytics and AI in BLR in Sep 2017
• PayPal opens innovation labs in Chennai and Bangalore in Aug 2017
• Honda commissions its Narsapur, Karnataka facility (world's largest facility for two-wheelers) - with 2.4 million capacities and 7,000 direct jobs and 15,000 indirect jobs – in Aug 2017
• LinkedIn launches India-made LinkedIn Lite in 60 countries in Aug 2017

Education & Research

• Joydeep Bagchi-led Indian scientists (IUCAA and IISER Pune) discover Saraswati Super-cluster (4 billion light years away) in July 2017
• SWAYAM platform for online courses and free to air TV channels launched on July 9, 2017 (Guru Poornima) by the Ministry of Human Resource Development
• Lok Sabha passes the bill giving the newly started IIIT’s in PPP mode the status of Institutes of National importance on July 19, 2017; with Presidential assent it got Gazette notified in Sep 2017
• Lok Sabha passes IIM Bill giving more autonomy on July 27, 2017

People

• The high-profile Infosys CEO Vishal Sikka’s sudden resignation on Aug 18, 2017 caused flutters in the Indian IT industry
• India-born Sundar Pichai CEO of Google joins Alpha (parent company of Google) Board on July 24, 2017
• Aarti Subramaniam is the first-ever digital officer for Tata Sons, appointed on July 12, 2017
• NSE gets a new CEO Vikram Limaye on July 17, 2017
• Arvind Panagariya Vice Chairman of NITI Aayog announces his decision to quit and join back Columbia University on Aug 1, 2017
• Vasant Narasimhan PIO (Person of Indian Origin) is the new CEO of global pharmaceutical giant Novartis
• Japanese PM Abe visit India and launches bullet train project between Mumbai and Ahmedabad on Sep 14, 2017; Swiss President visits India Sep 2-4, 2017
• Five Navy women start on round the world in 160 days on Sep 10, 2017
• PV Sindhu is the first Indian woman ever to win Korean Open badminton match on Sep 17, 2017

Telecom

• Reliance Jio launches "free" feature phone and low-cost bundles for Voice, data and video on July 20, 2017

Startup scene

• Baiju acquires TutorVista and Edurite on July 3, 2017 from Pearson
• BookMyShow acquires recommendation engine Burrp on July 3, 2017
• **FreeCharge** acquired by **Axis Bank** on July 26, 2017 signs of consolidation in mobile wallets space
• **Ola** raises another $400 million from Tencent on July 26, 2017
• **SoftBank** invests $2.5 Billion in Flipkart
• **Matrimony** IPO oversubscribed on Sep 14, 2017

**Interesting Applications and Apps**

• **Aaykar Setu** App launched by Income Tax department on July 10, 2017
• **Zoho One** offers 35 applications as a professional single App for Rs 1,000 per month per employee starting July 25, 2017
• **Microsoft** launches messaging App **Kaizala** in India in July 2017 with AP Government as its first customer
• **Government of India** launches mother app **Umang** in July 2017
• **SBI** launches chat bot in September 2017

**Interesting numbers**

• **Sensex** (BSE index) went past 32,000 for the first time on July 13, 2017; **NIFTY** crossed 10,000 marks for the first time in its 21 year history on July 25, 2017
• **Foreign Exchange reserves** cross $400 billion for the first time on Aug 18, 2017
• With 241 million users **India is No 1 for Facebook** (USA has 240 million) on July 13, 2017; **WhatsApp** reaches one billion daily users (with India as No 1 the No 1 country) by July 2017
• **Uber** completes 500 million rides in India in 4 years by July end
• As per TRAI Press Release 73/2017 dated Sep 13, 2017 **Indian telecom subscriber base** touched 1210.71 Million (1186 Million mobile and 24 Million fixed-line) on July 31, 2017

---

**Professor Sowmyanarayanan SADAGOPAN** is the Director of IIIT-Bangalore. These are his personal views. He has been writing about IT in India for two decades, with monthly columns in Times of India (1999 – 2003), Financial Express (2004 - 2007), IT Magazine (2008 - 2011) and IEEE India Newsletter (2012 onwards). He can be reached at ss@iitb.ac.in
A Look at Stealth Bomber Technology

Source: Engineering 360

Virtually undetectable, stealth aircraft can penetrate far into enemy territory, initiating strikes before the enemy can mount a defence. Stealth technology is expensive and difficult to develop, but once attained it is deadly. Its operational effectiveness has been proven in a number of conflicts, including the first Gulf War, the War in Afghanistan and the 2011 military intervention in Libya.

The purpose of stealth technology is to conceal aircraft from detection by the enemy. Compared to traditional aircraft, stealth aircraft gain additional survivability due to their ability to avoid engagement by surface-to-air and air-to-air weapons systems. By avoiding detection, surveillance can be carried out without interruption. On combat missions, stealth aircraft gain the element of surprise, a tactical advantage that allows them to choose the moment of engagement.

A variety of military aircraft in the U.S. incorporate stealth technology, including the Northrop Grumman B-2 Spirit bomber, the Lockheed Martin F-22 Raptor air superiority fighter and the Lockheed Martin F-35 Lightning II joint strike fighter. These stealth aircraft gain their low observability features through careful design consideration of the aircraft’s operational, acoustic, visual, thermal and electromagnetic characteristics.

Radio detection and ranging (radar) is the primary means of detecting aircraft. Stealth aircraft counter radar with a variety of techniques. Covering the plane in radar-absorbing materials is one approach. The B-2’s construction includes a special carbon-graphite composite surface material, as well as paints and tapes that require frequent maintenance.
ULTRASONICS: Cleaning Silently with Sound Waves

Source: electronicsforu.com

At the heart of ultrasonic cleaning is a bubble. Bubbles are created by ultrasonic sound waves (having frequencies higher than audible sound) as these move through water. This is known as cavitation, which is simply the formation of bubbles (cavity) in water. Since bubbles created through cavitation are just empty spaces, there is nothing to keep these open.

As a result, bubbles implode almost as fast as these are created. In an ultrasonic cleaner, this happens millions of times per second. This constant implosion produces tremendous vacuum energy in the form of heat and pressure that gives enormous cleaning power to ultrasonic. When cavitation happens near a dirty object, vacuum action produced by those millions of bubbles constantly imploding creates a tiny pressure wave that reaches deep into every nook and cranny of even the most delicate items. This tiny pressure wave dislodges and breaks up the dirt and other contaminants and gently lifts it away. The result is very fast and effective cleaning. You can use ultrasonic cleaning for fast and perfect removal of contaminants from objects by immersing these in a tank of fluid flooded with ultrasonic waves. Ultrasonic energy enters the fluid within the tank and causes the rapid formation and implosion of minute bubbles. The bubbles rapidly increase in size until these implode against the surface of the object immersed in the tank. The resulting enormous energy release lifts contamination off the surface and innermost recesses of even intricately-shaped parts.
Cost-effective Quantum Moves a Step Closer

Source: IOP publishing

Canadian and US researchers have taken an important step towards enabling quantum networks to be cost-effective and truly secure from attack.

The experiments, by the team from the University of Calgary, the California Institute of Technology and the National Institute of Standards and Technology, Colorado, prove the viability of a measurement-device-independent quantum key distribution (QKD) system, based on readily available hardware.

QKD provides a method of provably secure communication. Many QKD systems, including commercial systems, have been developed during the last 30 years, and important elements such as secret key rates and maximum transmission have continuously improved.

The team’s results in the journal Quantum Science and Technology, shows how they employed cost-effective and commercially available hardware such as distributed feedback (DFB) lasers and field-programmable gate arrays (FPGA) electronics, which enable time-bin qubit preparation and time-tagging, and active feedback systems that allow for compensation of time-varying properties of photons after transmission through deployed fibre.

The first author Raju Valivarthi said: “Quantum hacking over the past decade has also shown, however, that the specifications of components and devices used in actual QKD systems never perfectly agree with the theoretical description used in security proofs, which can compromise the security of real QKD systems.

“For instance, so-called ‘blinding attacks’ exploit vulnerabilities of single photon detectors (SPDs) to open a side-channel, via which an eavesdropper can gain full information about the (assumed-to-be) secure key. Making practical QKD systems secure against all such attacks is a challenging task.”
Millimeter Wave Sensing Advances Autonomous Automobiles

Source: Engineering 360.

Millimeter wave sensing is a radar-based technology that detects range, velocity and angle of an object with high precision. The millimeter wavelength region of the electromagnetic spectrum corresponds to the frequency bands between 30 and 300 GHz. It is designated as an extremely high-frequency band (EHF) by the International Telecommunication Union (ITU), with associated wavelengths that range from ten to one millimeter. While EHF has been studied for some time, practical use of millimeter wave sensors for radio detection and ranging in automotive applications has only been in development since the turn of the century.

Millimeter waves propagate by line-of-sight paths with a narrow beam width. They allow for small antennas and have a high-frequency reuse potential. High reuse potential is possible as the narrowband and limited transmission distance allow for a higher concentration of transmitters in a geographical area than is possible at lower frequencies.

They were first investigated in the 1890s by Jagadish Chandra Bose, a Bengali-Indian scientist. He found this band to exhibit high atmospheric attenuation, which limited its use in the field of radar when it was first developed; however, as the field of remote sensing has evolved, the possibilities of millimeter wave sensing have been realized.

Modern millimeter wave-sensing technology avoids peak absorption wavelength, concentrating on bandwidths that exhibit much lower atmosphere attenuation. The effective range of measurement is approximately 250 m, but the emphasis in automotive applications has been on bandwidth availability, sensor size and performance advantages, and not so much on extended sensing range.
A Focus on Image Processing with Neural Networks

Source: electronicsforu.com

Some time ago there were some very interesting product releases from the likes of Google and Microsoft. While Google announced a new assistant in Google Allo, which is quite friendly, Microsoft announced a puck-like device for artists working on Surface Pro devices. Google’s chat assistant on my phone read my personal messages and gave suggestions in reply.

Is this just a matter of word association, or an invasion of privacy? However, my intrigue began when a friend sent an image of his presence at a club. Allo showed some automatic reply options including, “Have a good time!” To me, it seemed like a fun and convenient way to reduce the hassle of typing out a full message.

Photography is one area that employs image analytics heavily. Dr Joseph Reger, chief technology officer, Fujitsu EMEIA, explains, “Modern cameras identify faces to make focusing easier, or these can identify smiling faces or faces of pre-selected people.” Image analysis starts by first identifying edges and moves on to full shapes. However, making changes in certain key areas in the images has successfully fooled such systems. More on that later, first let us look at how a computer recognises and processes images.

Image analysis ranges from finding basic shapes, detecting edges, removing noise and counting objects, to finding anomalies in the routine. Security and surveillance are incomplete without an intelligent system that can detect pedestrians and vehicles, and make a difference. So how does image analytics work? How was Google’s new assistant able to analyse images and suggest possible replies as soon as I received the image?
CALL FOR PAPER

The 5th IEEE Region 10 (Asia Pacific) Humanitarian Technology Conference (R10HTC) is going to be held on December 21-23, 2017 at B.U.I.T., Dhaka, Bangladesh. This is one of the flagship conferences of IEEE R10. The theme of the conference is “Smart Technologies for Humanity” and its aim is to bring together individuals conducting research and to innovate smart technologies for humanitarian applications. Prospective authors are invited to submit full paper using the online paper submission system. There will be best papers awards and a large number of travel grants. All accepted and presented papers will be submitted to IEEE Xplore. Topics include but not limited to:

- Circuits & Systems
- Clean Water & Sanitation
- Climate Change & Environment
- Community Engagement & Connectivity
- Communication & Signal Processing
- Disaster Management & Poverty Alleviation
- Healthcare, Biomedical Eng., & Bioinformatics
- Humanitarian Challenges & Apps, Design
- Human Computer Interaction & AI
- ICT, Cloud, Big Data, Database, Architecture
- Microwave, Antenna & RF Engineering
- Power & Energy
- Power Electronics, Machines, Drives
- Robotics, Control & Automation
- Safety & Security, Networks, Software
- Semiconductor Devices & Photonics
- Technologies for Agriculture and Food
- Women Empowerment

The weather in December is very comfortable and hope you all will enjoy the natural beauty of Bangladesh.

Project Competition (IHTPC 2017)

2017 IEEE International Humanitarian Technology Competition (IHTPC) will be held within the conference, which is financially supported by IEEE Humanitarian Activity Committee (HAC) and offers $10,000 USD Awards/Travel Grants.

Keynote Speakers

Prof. Dr. Vincenzo Piuri, IEEE, U of Milan, Italy
Prof. Dr. Salil Dhar, IEEE, VITech, India
Dr. M. S. Alam, IEEE, Texas A&M, USA
Prof. Dr. M. H. Rashid, IEEE, BUET, USA

STORY OF DHAKA

BEAUTIFUL BANGLADESH

Important Dates

- Special session (so) proposal: June 30, 2017
- Submission of regular RD papers: July 30, 2017
- Notification of acceptance: September 30, 2017
- Camera-ready submission: September 30, 2017
- Author Registration: October 5, 2017