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1.TECHNICAL ACTIVITIES

Successful Completion of Powerbuzz 2018

Touhid Ahmed

Chair, IEEE NSU Power & Energy Society Student Branch Chapter, Bangladesh Section

On 9th and 10th of February 2018, IEEE NSU Power & Energy Society Student Branch Chapter in coordination with North South University and IEEE NSU Student Branch organized its first mega event "POWERBUZZ – 2018". The event took place on the North South University Premises. Powerbuzz was aimed at 'Making Bangladesh a role model in the world by using sustainable energy production and management.'

The event consisted of five segments as Idea generation competition, Power



Programming, Project Showcase & Poster Presentation, Industrial talk session & Women in Power Talk session. A total of around 250 students from various universities participated and competed in different segments. IEEE NSU Robotics and Automation Society (RAS) and IEEE NSU SB, WIE Affinity group were the co-organizers of this event.

In the end, 'POWERBUZZ-2018' was a successful event and have met the goal of bridging the gap between the industry and the academia.

Workshop on Basic Arduino and Basic Home Automaton

MD. Tanzil Shahria

Chair, IEEE NSU Robotics and Automation Society Student Chapter, Bangladesh Section

"Robotics and Automation Society (RAS), IEEE NSU Student Branch Chapter conducted a workshop to teach the basics of Arduino series of Micro Controller usage and an introduction to home automation using the same. The class was conducted by Muhammad Irfan Haque, MD. Tanzil Shahria and Wordh UI Hasan.

The contents of the workshop included:

1. Primary information on Micro Controllers; structure, specification, pin layout of Arduino and their brief description.

- 2. How to control pins of the Arduino
- 3. Basic in-build Functions





- 4. Use of some common sensors (Temperature sensor, LDR, Ultra Sonic Sensor)
- 5. Using basic electronic component (LED, Resistors, Potentiometers)
- 6. Basic Home Automation and few examples.

The participants engaged in hands on learning as the instructors and the members of RAS were there to explain and troubleshoot the circuits and the codes demonstrated in the workshop."

IEEE Antenna Talk and Workshop in Malaysia

Azah Syafiah Mohd Marzuki,

Secretary, AP/MTT/EMC Joint Chapter, IEEE Malaysia Section

IEEE Malaysia AP/MTT/EMC Joint Chapter is actively organizing talk series on antennas. The first talk in 2018 was kickedoff by Prof. Dr. Buon Kiong Lau from Lund University, Sweden on 7th January 2018 at UTM, Johor Bahru. He focused on the topic "Massive MIMO for 5G Wireless Communications". Also, in January, the 2018 Vice-Chair, Dr. Azremi Abdullah Al-Hadi from UniMAP was invited to contribute to a talk at CST Workshop Series-2018 in Penang. He followed up on the topic "Antennas and its Interaction with Human Body". In February, Dr Ahmad Azlan Aziz conducted a workshop on



"Antenna Design for IoT Wireless Applications by Using CST". It was an event co-organized with Politeknik Sultan Salahuddin Abdul Aziz Shah. In March, we organized another talk related to Antennas with IEEE UTM Student Branch, where Prof Mohamad Kamal, our past chair, presented some very interesting facts on "Antenna Technology: A Perspective on Past Present and Future".

Hands-on workshop on OpenDSS

Kavini Weerasinghe

Secretary, IEEE PES SBC of University of Moratuwa, IEEE Sri Lanka Section



A Hands-on workshop on OpenDSS organized by IEEE PES SBC of University of Moratuwa was held on

January 11, 2017 at the university premises. The event was focused on introducing OpenDSS, which is a trending Distribution System Simulation Freeware and also to provide hands-on skills and comprehensive knowledge in using it.

Mr. Hasala Dharmawardena, a researcher at Clemson University, USA conducted the workshop focusing on renewable energy integration to the grid and time series simulations, which is a felicitous application of OpenDSS in the Sri Lankan context.



The event saw an active participation of around 30 Electrical Engineering Undergraduates, Postgraduates and Enthusiasts from the Industry. IEEE PES SBC Faculty Advisor, Dr. Lidula Widanagama Arachchige graced the event with her presence.

Apart from the technical objectives, the event resulted in generating funds for future operations and membership development. Praiseful feedbacks from the attendees proved the events success and triggered the volunteers' enthusiasm to launch more such projects."

Enumero 4.0

Migara Pramod

Chair, IEEE Student Branch University of Moratuwa, Sri Lanka Section

Enumero 4.0 is a technical workshop which was organized by the IEEE student branch of University of Moratuwa. It was held on 24th of February 2018 with participation of 80 IEEE volunteers from all the Student Branches in Sri Lankan Section with the utmost intention of enhancing the technological knowledge of the undergraduates, especially, updating them with current technical advances in the field of computer science, robotics and automation, power and energy sector. Workshop included three lectures on Crypto Currency, Vega Innovations and Rapid Prototyping conducted by the industry professionals. As the last phase of the workshop PES, IAS, CS and RAS chapters of University of Moratuwa conducted a collaborative technical event



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with the intention of enhancing the collaboration between Student Branches within the IEEE Sri Lanka Section. The workshop was successfully concluded with many positive feedbacks.

Microelectronics Research Group Demonstrates Operational IR Imaging Arrays

Gino Putrino

Chair, IEEE West Australian joint chapter of the Electron Devices, Solid State Circuits and Photonics Society, Western Australia Section

"A team of researchers from the University of Western Australia (UWA) demonstrated prototypes of 320x256 infrared (IR) imaging arrays with a 30µm pitch. These arrays have been entirely fabricated within the facilities at UWA. These photovoltaic IR arrays, operating within the mid-wave IR band (3- 5µm wavelength), are based on the technologies developed at UWA, including high quality HgCdTe semiconductor material growth in their MBE system, photovoltaic junction formation, surface passivation. A short and clip demonstrating the array can be found here: https://youtu.be/XaaFUVCHy4k



The image shown is not corrected for dead pixels, which is typically done during the image processing in commercial IR cameras.

The development of these imaging arrays is the culmination of many years of research by the Microelectronics Research Group team led by Prof. L. Faraone. Future work will allow the development of larger format and smaller pitch imaging arrays.

Recent trends and developments in Renewable Energy & Smart Grids *Rafid Azad*

Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section

On 28th January 2018, IEEE AIUB Student Branch in association with **IEEE Industrial Application Society** AIUB Student Branch Chapter successfully organized a seminar on Recent trends and developments in Renewable Energy & Smart Grids. The seminar focused on the current technical aspects of Renewable energy and smart energy grids which were very beneficial for enthusiasts expecting to pursue a career in Renewable Energy and Smart



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Grids. A talk about the necessity of Renewable Energy for a sustainable future and its' effect on growing demand was conducted. Current developments of renewable energy in Bangladesh were also mentioned, followed by a discussion on current trends of renewable energy and technologies associated with renewable energy and smart grid. Career opportunities in the field of renewable energy were also emphasized. Students from different departments attended the seminar. The event was also composed of an interactive question and answer session.



2. IEEE MILESTONE

IEEE Milestone Ceremony for "Outdoor Large-Scale Color Display System, 1980"

Hiromi Yuasa

Secretary, Fukuoka Section

The dedication ceremony for the "Outdoor Large-Scale Color Display System" IEEE Milestone was held on March 8, 2018 in Japan. Prof. Tanemasa Asano, Chair, IEEE Fukuoka Section, gave the opening address, and Mr. James A. Jefferies, IEEE President & CEO, presented а commemorative plaque to Mr. Sakuyama, Masaki President, Mitsubishi Electric Corporation. Mr. Sakuyama gave an acceptance speech on behalf of all who contributed toward the



Milestone. After the IEEE Milestone dedication ceremony, a lecture session entitled "IEEE Milestones Commemorative Lectures" was held with 100 participants. Prof. Isao Shirakawa, IEEE Japan Council History Committee Chair, presented "Overview of IEEE Milestone". Then a lecture entitled "Toward Society 5.0 -Innovative Strategy of technologies in Japan-" was presented by Dr. Kazuo Kyuma, Executive Member, Council for Science, Technology and Innovation, Japan. Finally, Dr. Zenichiro Hara, Nagasaki Works, Mitsubishi Electric Corporation "Birth and Development of Akai urora Vision (Diamond Vision)".



3. AWARDS AND RECOGNITIONS

Malaysians Shines in Chip Olympics for the First Time in the History

Fakhrul Zaman Rokhani

Executive Committee, IEEE Circuits and Systems Malaysia Chapter, Malaysia Section

The Head of Analog, Digital & RF Research Group, Assoc. Prof. Ir. Dr. Harikrishnan and his doctorate student Mr. Lawrence Lim Chee Cheow from UM, Malaysia, presented the ground-breaking research work in the 65th IEEE international Solid State-Circuits Conference (ISSCC) held from 10th to 15th February 2018 in San Francisco, California. ISSCC, which is known as the "Chip Olympics", is the most prestigious international conference held in the world in the electronics field. Along with a rigorous paper selection process, it is also the world's largest and highest-level conference on solid-state circuits, which showcases annually the latest trends in global solid-state circuit research and development. This year's conference attracted more than 30,000 chip designers around the world from both the academia and the industry.

Consisting advanced circuit techniques, the work introduced the world's highest Figure-of-Merit (FoM) oscillator in 65nm CMOS technology, suitable in WiFi, Bluetooth BLE, mobile and the evolving 5G application.





4. MEMBERSHIP DEVELOPMENT

Partnership with ITCN Asia 2017

Shaikh Anas

Section Student Representative, IEEE Karachi Section

In September 2017, IEEE Karachi Section partnered up with ITCN Asia as its industrial partner, in an endeavor to encourage scientific thought, research and innovation. A 3-day event, which spanned from 19th to 21st September 2017, took place at Expo Center Karachi.

IEEE Karachi Section was provided with a separate booth and a stall at the venue where Membership Development Officer, Mr. Atif



Fareed and his team were present to acknowledge students and young professionals about 'why IEEE is different from other societies'. Facilities for online registration was made available.

The Sectional Student Representative, Mr. Sheikh Muhammad Anas along with different universities volunteered for the event and it proved to be a success. The project coordinator, Mr. Hesham Ali and Newsletter coordinator were also present.

Membership Drive and Ice Breaking Session 2018

Mahima Anwar

Content Writer, IEEE NSU Student Branch, IEEE Bangladesh Section

The one-week long 'Membership Drive' organized by IEEE North South University Student Branch aimed at making IEEE NSU SB brimming with volunteers, came to an end with great success.

With the one week-long cavalcade, the membership campaign was a great success with 60 new recruits ready to be a part of the world's largest technical & professional organization, IEEE. To greet the new members, IEEE NSU SB organized an ice breaking session on 2nd March 2018 at Audi 801 and Gallery, NSU.



The session was intended to introduce the members to IEEE, its Student Chapters, Affinity Groups and Societies. The session was commenced with the introduction of IEEE and it was followed by the



introduction of the new executive panel of WIE, IEEE NSU SB. To wind up the program, a gaming session was conducted to stage a platform for the members to interact among each other.

An Insight into IEEE DUET Student Branch Activities and Its Impacts Mohidul Islam

Publicity Coordinator, IEEE DUET Student Branch, Bangladesh Section

On 5th March, 2018 a seminar on "An Insight into IEEE DUET Student Branch Activities and Its Impacts" was organized by IEEE DUET Student Branch.

The seminar was Chaired by Prof. Dr. Md. Raju Ahmed, Head, Dept. of EEE, and started with the welcoming speech from Dr. Md. Arifur Rahman, honorable Branch Counselor, IEEE DUET Student Branch. Following on the presence were informed the importance of IEEE by Dr. Md. Bashir Uddin, Professor, Dept.



of EEE, Prof. Dr. Mohammad Abdur Rouf, Head, Dept of CSE and Prof. Dr. Md. Saifuddin Faruk, Dean, Faculty of EEE.

Later, the former committee and dedicated members were given the certificate and then the new committee was declared. Finally, a slide show was presented by Sujit Roy, former Chair, IEEE DUET Student Branch. The presence of around 75 enthusiastic participants and their impassioned questioning and answering made the seminar a successful one.

IEEE AIUB Student Branch organized the Members' Orientation 2018

Rafid Azad

Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section



On 15th February 2018, IEEE AIUB Student Branch organized the Members' Orientation 2018. The goal of the event was to introduce IEEE and all the benefits that come with the membership. At the event, a video presentation was displayed highlighting the activities and achievements of IEEE AIUB Student Branch in the previous year. The names of the executive committee members for the coming year were also announced. After that plans for IEEE AIUB Student Branch for the year



was discussed. The games and interactive session took place soon after along with a raffle draw competition. Later, a cultural session took place. There, a dance performance by a guest performer, followed by several musical performances of in-house performers were included. The event was attended by students from several departments and also by alumni members of the IEEE AIUB Student Branch.

3 Sessions on "IEEE Bangladesh Section Membership Development & Activities"

Raihan Ur Rashid

Publicity Coordinator, IEEE Bangladesh Section

"IEEE Bangladesh Section organized 3 different sessions at 3 universities on "IEEE Bangladesh Section

Membership Development & Activities" on 8th February 2018. The universities are University of Rajshahi, Rajshahi University of Engineering and Technology (RUET) and Varendra University, Rajshahi.

Prof. Dr. Celia Shahnaz, Chair, Associate Prof. Mr. Yeasir Arafat, Vice Chair (Activity), Md Zakaria Haider, Secretary and MD Romael Haque, Treasurer of IEEE Bangladesh Section were present in the sessions as the speakers where they shared the achievement of IEEE Bangladesh



section and the benefits of being an IEEE member both from a global perspective and a part of IEEE Bangladesh Section.

More than 70 students, both IEEE members and non-members attended the session at Rajshahi University of Engineering and Technology (RUET). At the University of Rajshahi, the number of



participants was around 40. At Varendra University, Rajshahi more than 15 faculty members and 40 students participated in the session.

5. CONFERENCES, CONGRESSES & SYMPOSIUMS

IEEE All Hyderabad Computer Society Student Congress

Akanksha Goud Chirra

Student Network Representative, VCE Student Branch, Hyderabad Section

IEEE Hyderabad Section - Computer Society Chapter organized an All Hyderabad Computer Society Student Congress (AHCSSC) 3-day Conference of FIRST OF ITS KIND with the theme of "Demystifying AI and Blockchain" between January 5, 2018, to January 7, 2018 at Vaagdevi College of Engineering, Warangal. The congress was aimed at strengthening the connections among the students to together collaborate with the eminent industry and academic experts. This event attracted over 280



Young minds from 23 different Colleges across India. This platform enabled students to have a simplified understanding of AI and Blockchain and its relevance in today's Digital and Industry context.

This event comprised of Technical sessions on Artificial Intelligence, Blockchain, Cybersecurity relevance in AI and Blockchain, Computer Society Best Practices, CS Scholarships and Real-time Projects, orientation on IEEE membership and CS Compute. Further, IEEE CS Compute Volume 5 was released as part of Congress event.

5th IEEE Region 10 Humanitarian Technology Conference 2017

Raihan Ur Rashid

Publicity Coordinator, IEEE Bangladesh Section

"The 5th IEEE Region10 Humanitarian Technology Conference was held from 21 to 23 December 2017 at the premises of the ECE building, BUET, Dhaka, Bangladesh. It was organized by IEEE Bangladesh Section and was supported by Department of EEE, BUET.

Out of 440 submissions, 200 papers were registered and submitted to the conference by around 700 participants from 12 countries on 4 different continents. There were 25 oral and 2 interactive poster sessions. 22 invited





speakers gave their valuable speeches on 10 IEEE R10 sponsored tracks. There were 6 keynote speakers of whom all were IEEE fellows.

The Inauguration Ceremony of the conference was held on 21st December 2017. On the second day, oral sessions in 8 different technical tracks and poster presentations were held. The Gala Dinner along with a pleasant cultural program was held at the following night. The closing ceremony was held on the following day.

The International Conference on Computer, Communication, Chemical, Material and Electronic Engineering 2018

Raihan Ur Rashid

Publicity Coordinator, IEEE Bangladesh Section

"The International Conference on Computer, Communication, Chemical, Material and Electronic Engineering (IC4ME2-2018), a sequel to ICMEIE-2015, was held from February 8 to 9, 2018 at University of Rajshahi, Bangladesh.

Prof. Dr. Celia Shahnaz, Chairperson, IEEE Bangladesh Section, Associate Prof. Mr. Yeasir Arafat, Vice Chair (Activity), IEEE Bangladesh Section, Md. Zakaria Haider, Secretary, IEEE Bangladesh Section and Md. Romael Haque, Treasurer, IEEE Bangladesh Section were present as honorable guests.



In the inaugural ceremony, Prof. Dr. Celia

Shahnaz shared the achievements and the challenges along with the vision for improving the future of IEEE in Bangladesh. Professor Dr. M. Abdus Sobhan, Honorable Vice Chancellor, University of Rajshahi was also present in the ceremony.

The closing ceremony was held on 9 February 2018 where Md. Romael Haque talked about important and influential activities of IEEE Bangladesh Section and showed its demographic, membership growth and the awards the section and its maestros have achieved."

The 19th Hiroshima Section Student Symposium (HISS)

Akimitsu Kanzaki Secretary, Hiroshima Section



The19thIEEEHiroshimaSectionStudentSymposium(HISS)washeldDecember2-3, 2017atShimaneUniversity,Japan.

HISS has two special characteristics; one is that students themselves carry out the planning and



management of the symposium, and the other is that all the technical papers in HISS are presented by students in interactive sessions. The main theme of each HISS would be decided by the students. And also, based on the interest with students' point of view, the topics of the Keynote Speech and the Technical Lecture in HISS are selected.

In this year, there are 239 participants (sum of two days). In addition to 85 technical presentations, one keynote speech by Lect. Kana Takasu, who is a department head of COC (Center of Community) project at Shimane University, and presentations from two industrial companies, two academic laboratories and four high-school students were conducted.

5th International Conference on Signal Processing and Integrated Networks, SPIN-2018

M.K Dutta IEEE Member, Uttar Pradesh Section



The Fifth International Conference on Signal Processing and Integrated Networks (SPIN 2018) was held on 22-23 February 2018 in the Amity University Campus, Noida Delhi NCR, India. This conference was technically co-sponsored by IEEE UP Section. More details can be found at http://amity.edu/spin2018).

SPIN 2018 was intended to bring together scientists, acidemia and the industry working in the field of Signal Processing and Integrated Networks to discuss new ideas and promote research work. The conference had a very high quality technical program consisting of 182 contributory papers and 34 invited talks. Overall this conference had 31 technical sessions and all the sessions were very nicely managed by expert session chairs. The sessions were highly interactive and thoughtful.

The invited talks were delivered by researchers throughout the world from countries like UK, USA, Japan, Canada, Germany, Taiwan, Spain, Sweden, Hong Kong, Israel, Italy, Egypt etc.



6. STUDENT ACTIVITIES

Web Dev Workshop

Mahima Anwar

Content Writer, IEEE NSU Student Branch, Bangladesh Section

IEEE North South University Student Branch finally started its long-awaited Skills Development Venture through а Web Designing Workshop on March 14 & 20th, 2018 at LIB 604, North South University. The aim of the workshop was to provide IEEE NSU SB members with basic web designing skills that will prove to be beneficial for the participants in their personal and professional career. Among the fields coached, some of the topics were basics of html, CSS and domain hosting and Simple Wordpress Web Deployment and Wordpress themes. The training was a handson training where the participants were given



facilities to learn and practically apply simultaneously. The workshop was conducted by the Webmaster of the Branch Debasish Paul and Branch Chair (Technical) Wordh Ul Hasan. Around 41 IEEE Student Members participated the workshop.

Google's Certification for Mobile Site Developers

Mahima Anwar

Content Writer, IEEE NSU Student Branch, Bangladesh Section

The Mobile Sites certification is a professional accreditation that Google offers to individuals who demonstrate proficiency in basic and advanced aspects of mobile website design and development. IEEE NSU student Branch organized an event to provide Google's Certification for Mobile Site Developers supported by Google Developers Sonargaon on 19th February 2018. Around 48 students participated in this workshop of North South University. The instructor for the workshop was Imtiaj Ahammad, Google MSite Certification



Instructor, Google Developers Sonargoan. The Mobile Sites certification exam was designed to test a developer's knowledge of mobile website development. A Developer is needed to pass the Mobile Sites exam to become certified in Mobile Sites. In the workshop, the participants learnt from experts at Google Developers Sonargaon about the core process to ace the certification exam and as the final part of the workshop, they had to face the Google's Certification for Mobile Site Developers exam.



IEEE WIE TECHNO FEST 18

Muhammad Waleed Bin Nasir

Vice chairperson, COMSATS Institute of Information Tech Islamabad, Islamabad section

Techno Fest was organized to be an event that included learning and fun altogether. This event provided the students with the golden opportunity to learn from the professional speakers. Total of 4 workshops were arranged that shed light upon the most discussed topics in today's world. Different games and sketching competition was organized for art enthusiast to present their skills upon women empowerment. While some people expressed their inner artist in sketching competition, engineers were busy showing their skills in robotics contest that were being held. In this contest, autonomous robots as well as application-controlled robots were put into competition. Each participant was awarded with a prize at the end and the



winners were given incentives. They were awarded with cash prize as an encouragement. All in all, this event was overall a huge success mostly because of our hardworking volunteers.

IEEE Student Professional Awareness Venture 2.0

Mohd Hamim

Secretary, IEEE AIUB Student Branch, IEEE Bangladesh Section

On 20th January 2018, IEEE AIUB Student Branch successfully organized IEEE Student Professional Awareness Venture (SPAVe) 2.0 in association with IEEE USA, IEEE Bangladesh Section, IEEE Young Professionals Bangladesh and IEEE BDS Student Activities Committee. The one day-long flagship venture was composed of workshops, seminars and technical talks, which were designed to enhance the leadership, career, and professional development skills of engineering disciples from around the country.



SPAVe 2.0 was conducted by an esteemed panel of speakers namely, Mr. Zamilur Rashid, Chief Executive Officer & Founder, Mindfisher Games, Mr. S M Ahbabur Rahman, Head of Human Resources, Doreen Power; Lead Consultant, HR Speaks Bangladesh, Prof. Dr. Md. Abdur Rahman. Director, Faculty of Engineering, AIUB; Adviser, IEEE AIUB Student Branch, and Mr. Arnob Kumar Saha, Assistant Manager,



Office of Professional Development at BYLC. The participants were enlightened with different aspects of professionalism necessary to develop oneself for future professional endeavors.

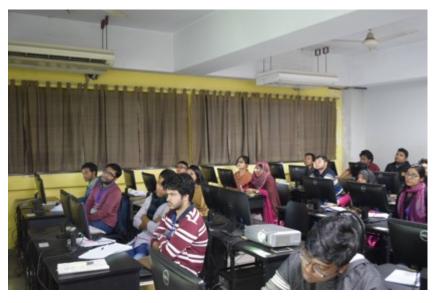
Workshop on 'Learn to Write Research Papers Using LaTeX'

Mirza Muhammad Tehzib Sadaf

Student Member, IEEE AUST Student Branch, IEEE Bangladesh Section

On January 23, 2018, IEEE AUST Student Branch and IEEE AUST SB WIE Affinity Group jointly organized a workshop on LaTeX titled "Learn to Write Research Papers Using LaTeX". This workshop was held in the DSP lab of Dept. of EEE at Ahsanullah University of Science and Technology (AUST).

The program was inaugurated with an opening speech by Mr. Masoodur Rahman Khan, Branch Counselor of IEEE AUST Student Branch at about 4:15 pm. Workshop



instructor, Miss Shoilie Chakma (Lecturer, IAT, BUET) started it by describing the scopes and benefits of writing scientific articles and thesis papers using LaTex and later went on to demonstrate the basics by using the software. A total of 28 students comprising of students from Dept. of EEE and CSE from AUST participated in this event. The workshop successfully concluded at about 6:30 pm.

Past, Present and Future of AR & VR

Rafid Azad

Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section



On 18th March 2018, IEEE AIUB Student Branch successfully organized а seminar on Past, Present and Future of AR & VR. The seminar focused on how Augmented Reality and Virtual Reality have made its way to Bangladesh and how it is becoming epidemic, creating more scope for enthusiasts floating in the world of imagination and



gaming. The event consisted of brief presentation regarding the current state of AR & VR, how it was progressing in Bangladesh, with companies like Battery Low Interactive utilizing the untapped markets and hence creating scope and opportunities for the enthusiasts of tomorrow. The seminar was attended by students from different departments of the university who showed interest in the field. The events also composed of many interactive sessions which helped the participant's clear any doubt and help them for professional development.

CV Writing and Interview Techniques for Engineering Student Rafid Azad

Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section

On 26th February 2018, AIUB Office of Placements and Alumni presented a training session on CV Writing and Interview Techniques for Engineering Student in association with IEEE AIUB Student Branch. The training session was an initiative to enhance the student's CV writing techniques and introduce them different to scenarios typically faced by employees at the interview. There was a discussion on the importance of CV writing skill for professional development and also that in



addition to academics, extra-curricular activities and other soft skills could play a huge role in enhancing one's Curriculum Vitae. There were also talks on the basic aspects of an interviews and different type of interview techniques. In addition, there were discussions on different types of questions employees commonly face. Around 100 participants from different departments under Faculty of Engineering and Faculty of Science and Information Technology took part in this venture.

IEEE AIUB Student Branch hosted a workshop titled Google Mobile Site Certification Exam Rafid Azad

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Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section

On 14th February 2018, IEEE AIUB Student Branch hosted a workshop titled Google Mobile Site Certification Exam which was organized by Google Developer Group Sonargoan. The goal of the workshop was to give an insight of the Google Mobile Site Certification Exam to the participants. It was a very acknowledging venture for enthusiasts who were interested in mobile website development. There was а presentation on the mission and vision of Google Developer Groups (GDGs) and its different aspects. There was a



session explaining the different aspects of the mobile site and web page. The importance of Google Mobile Site Certification Exam in order to become a mobile site developer was explained. There was also a discussion on the question pattern, exam guideline, and certification process at length. Later, an online exam was conducted by the speakers which had a requirement of 80% correct answers for passing the exam.



7. SECTION ACTIVITIES

IEEE R10 Shin-etsu Section 10th Anniversary Workshop

Kiyoshi Ohishi Chair, Shin-etsu Section

The Shin-etsu Section, Japan celebrated its 10th anniversary with а commemorative workshop on December 22, 2017 in Nagaoka City, Niigata Prefecture. The past chairs shared their experiences with the beginnings of the section and their hopes for the future direction of the Shinetsu Section. Following the keynote



by Prof. Hideki Hashimoto of Chuo University, participants were treated to presentations by a representative from the YP group as well as one of the recipients of the 2017 IEEE Shin-etsu Session Young Researcher Presentation Award. The past Shin-etsu Section chairs were awarded for their service at a banquet following the workshop and all participants received specially designed commemorative items and IEEE novelties. The workshop event was made possible with special support from IEEE Japan Council, IEEE Japan Office, and IEEE Singapore Office.

A Seminar on "Importance of Biomedical Engineering Education: Potentialities and Challenges"

Raihan Ur Rashid

Publicity Coordinator, IEEE Bangladesh Section



A seminar on "Importance of Biomedical Engineering Education: Potentialities and Challenges" was held on 15 February 2018 at Department of EEE, Hajee Mohammad Danesh Science and Technology University, Dinajpur, Bangladesh. The seminar was jointly organized by the Educational Activity Sub-committee of IEEE Bangladesh Section and IEEE Student Branch of (HSTU). About 90 participants attended and among them, 36 were members of IEEE.

Prof. Dr. A. B. M. Aowlad Hossain (Ph.D. in Biomedical Engineering) was the keynote



speaker. In the context of global scenario, the speaker focused on the prospects Biomedical Engineering as well as the inclusion of curriculum and opening more BME program especially in Bangladesh. Md. Faruk Kibria, Chairman, Department of EEE, Mr. Md. Safiqul Islam, Counselor, IEEE Student Branch HSTU and the faculty members of Computer Science and Engineering Faculty of HTSU were present. The seminar concluded with an active discussion among the participants.

Special training event on "Empowering the Future Through IoT"

Raihan Ur Rashid

Publicity Coordinator, IEEE Bangladesh Section

"Grameenphone Ltd. in collaboration with IEEE Bangladesh Section and Department of EEE, BUET organized a special training event titled ""Empowering the Future Through IoT"" on 4 February 2018 in ECE Building, BUET. Various industry affiliated persons and 20 news reporters were present as invited guests as well as participants.

Professor Dr. Celia Shahnaz, Chairperson, IEEE Bangladesh Section and Mahmud Hossain, Chief Corporate Affairs Officer (CCAO), Grameenphone Ltd. inaugurated the training session.

The session started with a speech from Dr. Reduan Hassan Khan, Head of IOT, Grame enphone Ltd. about IoT's effect on future lifestyle. Then Mr. Gazi Saharul Habib, Regulatory Affairs, Grameenphone Ltd. talked about regulatory policies regarding



IoT. After that Dr. Shaikh Anwarul Fattah, Nominations and Appointments Chair, IEEE Bangladesh Section talked about different university level IoT projects and their further utilization in collaboration with a company like Grameenphone. The program ended with a question-answer session conducted by Mahmud Hossain.



8. YOUNG PROFESSIONALS ACTIVITIES

Young Professionals - Social Mixer

Bibin Parukoor Thomas

Chair, IEEE Kerala Young Professionals, IEEE Kerala Section

The primary session was taken by Advisor Dr. Suresh Nair on why and how YP's are the future of IEEE. He addressed the possible issues that may be faced by young blood and how Section can tap into the true potential of these professionals. The next session – Role of Young Professionals in Section Activities was taken by Dr. Sameer Saheer, Chair, IEEE Kerala Section. He discussed on all major activities that the section carried out in the past with the help of YP's inclusive of ECFDP's, E-Scientia Exhibit Installation, TISP and Entrepreneurs Meetups. Imm. Past Chair, IEEE Kerala Young Professionals - Shahim Baker followed by sharing the legacy of Kerala. He detailed on the focus areas in the past. The final session was handled by Ranjit R Nair, Past Chair, IEEE Kerala Young Professionals. The afternoon session was a team bonding activity at the seashores of Gods own country.

IEEE Young Professionals Sri Lanka Annual General Meeting 2018

Saumya Kumarihamy

Secretary, IEEE Young Professionals, Sri Lanka Section

The IEEE YP Sri Lanka Annual General Meeting for the year 2018 was held on 15th February at Renuka City Hotel, Colombo, Sri Lanka. The chairman welcomed the gathering and outlined the events both on and off the field throughout his term. Also, he stated the vision and aspirations of the club which brought forward the IEEE YP Sri Lanka this far. During the event, the guest speech on "The Key Challenges faced by Tech Startups in the



Industry" took the occasion to a thought-provoking point. The speech was driven by Mr. Akalanka De Silva, Assistant Manager Product Service Innovation at Mobitel (Pvt) Ltd, Sri Lanka. Following that, the newly appointed chairman Mr. Nadarajah Dheynoshan addressed the gathering and shared his vision and strategies for the coming year. The meeting was adjourned following the Vote of Thanks and the floor was open for the fellowship of participants.

Science is Fun!

Mayumi SUZUKI Chair, YP, Tokyo Section

Tokyo YP held scientific manufacturing school for elementary school students at Kanto Gakuin University on February 24, 2018 organized by IEEE 20th International Conference on Intelligent *April 2018 Edition* Page 24 of 37



Transportation Systems (ITSC 2017) Executive Committee and co-organized by Yokohama City, IEEE Tokyo Section ITS Society Chapter and Tokyo YP.

The theme of this event was "World of Waves Which Everyone Does Not Know". We prepared six themes related to waves: Let's make a light yarn phone, let's receive a radio with an umbrella, Let's make an interesting Benhams' disk, Let's make a metal detector, Let's try a special effects video, Move objects with wind (IEEE Teacher In-Service Program (TISP) program).



The attendees which number was 49 experienced fun and entertainment with science.

We hope to continue planning on something scientific which encourage the enjoyment and interest for science in the younger generation.



9. WOMEN IN ENGINEERING ACTIVITIES

"International Women's Day Celebration 2018" Organized By IEEE SUB SB And WIE AG, BDS

Tasnim Sorwar

Newsletter Editor, WIE AG, IEEE BDS, Bangladesh Section

IEEE Stamford University Student Branch and WIE Affinity Group, IEEE Bangladesh Section jointly organized International Women's Day celebration on 16th March, 2018 from 10:00 am at Stamford University auditorium (Siddeswari Campus) with 70 participants. The opening speech was given by Professor Emeritus Dr. Feroze Ahmed. Then Dr. Dilshan Mahjabeen, Branch Counselor, IEEE SUB SB presented а biography of glorious women in our society. Afterwards, Dr. Celia Shahnaz, Chair of IEEE BDS



discussed about new initiatives for WIE Bangladesh region. Later Anamika Bhakta, Chair of WIE AG, IEEE BDS presented WIE AG, IEEE BDS journey since its inception along with 2017 activities.

On the next segments, two invited speakers Nurun Nahar Dora and Kaniz Fatema from Grameen Phone emphasized on the importance women to be engaged in ICT sector. The event came to an end with Quiz Contest and Ex Chair of WIE SBs sharing their journey with IEEE.

IEEE Sendai Section WIE Inaugural Event - Current Status and Future of Female Engineers and Researchers in The Field of Technology Hitoshi Kikuchi

Sendai Section WIE Secretary, Sendai Section



The inaugural event of Sendai WIE was held on September 29, 2017 in Tohoku University. After opening message by Prof. Nakazawa, Sendai Section chair, Prof. Nishihara, R10 Director Elect congratulated Sendai Section officers. After a brief presentation about the establishment of Sendai WIE by Prof. Basabi Chakraborty, Sendai WIE chair, a video message welcoming Sendai WIE from Dr. Jing Dong, R10 WIE coordinator was shown. The opening meeting was concluded by a short presentation of planned activities by Mr. Kikuchi, Secretary of Sendai WIE.



A panel discussion was held on the theme "Current status and future of female engineers and researchers in the field of technology". Prof. Akinori Nishihara, Mrs. Emi Yano of WIE JC Chair, Dr. Fumi Seto of Tohoku University Gender Promotion Center and Prof. Basabi Chakraborty joined as panelists. Prof. Qiaowei Yuan, Vice-chair of Sendai WIE was in charge of moderating the panel discussion.

Meet Women Engineers

Lubaba Bazlul

Vice Chair, WIE AG, IEEE NSU SB, Bangladesh Section

IEEE NSU Student Branch, WIE Affinity Group arranged a networking event "Meet Women Engineers" this 8th March 2018 on International Women's Day at NSU where our speakers motivated & inspired our undergraduate girls. In this event among 54 participants, 38 IEEE WIE members were present.

Our first speaker was Dr. Nova Ahmed, Associate Professor, North South University who gave us useful insights about surviving undergraduate life. Our second speaker was another faculty member, Ms. Tamanna Motaharshe.



Third speaker was Prestigious Vice-Chancellor award winner Sayma Shammi who shared her story about how she handled pregnancy and studies despite the social pressure. Then, another alumnus, Khalida Sultana Shurovi, told us about how we can manage both studies and extracurricular activities.

And WIE AG, IEEE NSU SB advisor Dr. Shohana Deeba ended the session with a closing speech and by cutting a cake with the presence of Tanjila Farah, Branch Counselor, IEEE NSU SB.



International Women's Day Celebration

Rafid Azad

Publications Coordinator, IEEE AIUB Student Branch, Bangladesh Section

On 21st March 2018, IEEE AIUB Student Branch WIE Affinity Group successfully celebrated International Women's Day in association with IEEE AIUB Student Branch. The theme of this vear's International Women's Day was #PressForProgress. The goal of the event was to develop professional awareness among the students (especially female students), such that they can



sustain a lifelong career in engineering. The eventful day comprised of cake cutting ceremony, motivational speech and career talk, a presentation on WIE Affinity Group and a wide array of interactive sessions. Enthusiasts from different universities, faculty members and guests from IEEE Bangladesh Section were present at the celebration.

Women Empowerment

Sushma Guntupalli WIE-Chair, IEEE GRIET SB, Hyderabad Section

International Women's Day is all about unity, celebration, reflection, advocacy and action. SANNIHITA center for woman and girl children society is a non-profit, non-religious organization working for orphans and girls who are not supported by their parents. The Women in Engineering Affinity Group of IEEE GRIET Student Branch were very fortunate to spend few hours with the students of this esteemed organization. The main objective of conducting the event on the occasion of Women's Day was to advocate the girls the importance of education. It was also focused at gender equality and ceasing child marriage. The Exe-Com members reaching the venue inaugurated the event with special introduction session which lasted for about half an hour on



Women's Day and its importance. Then the volunteers accorded a session on Women Empowerment and Child Marriage. A painting competition was also held. The students were provided with necessary goods and were invited to portray and write slogans on Women's Day.



10. HUMANITARIAN ACTIVITIES

First Lego League championship

Muhammad Waleed Bin Nasir

Vice chairperson, COMSATS Institute of Information Tech Islamabad, Islamabad section

First Lego League championship is an initiative taken by IEEE COMSATS ISLAMABAD AND Star fall foundations that aims on encouraging the young minds work smartly to and efficiently through the problems they face. The main theme of FLL the championship was based upon the water problems that the world is currently facing. Teams from all around Pakistan participated and at the final round, only 19 teams were short-listen and were given the chance show skills in final round. They all had their robots made up of



Legos along with a micro-controller and sensors that were attached to it. The team members, with the guidance of their mentors, did the coding themselves, along with the robot assembly and the sensor attachment. This event aimed not only to have a robotics contest, but to create the teamwork, leadership and moral values among the students.

Eye Donation Campaign organized by IAS in University of Moratuwa Lakshitha Gunasekara

Student Member, IAS of University of Moratuwa, Sri Lanka Section



University of Moratuwa IAS conducted Chapter а successful Eye and Tissues Donation Campaign with the aid of the Sri Lanka National Eye Bank which is governed by the Sri Lanka Eye Donation Society. They are involved in donating human eyes and tissues for transplantation. It serves patients in need both in Sri Lanka and around the world.

People can donate their eyes or body parts or whole body to the National Eye



Bank upon their death, by signing an agreement with the National Eye Bank. Then, National Eye Bank provides healthy organs free of charge to the patients. As an intermediary organization, University of Moratuwa IAS Chapter's goal was to find donors for this great course.

The campaign was conducted on 27th of February 2018 for students from the University of Moratuwa. The program was extremely successful and the purpose of it was fulfilled, resulting in more than 200 donors.

Pre-Kick-off Meeting of SIGHT Tokyo Section

Kojiro Nishimiya

Interim Chair, SIGHT IEEE Tokyo Section

SIGHT IEEE Tokyo Section was accepted to establish on 1st/March/2018. This is the first group of SIGHT in Japan. As a pre-kick-off meeting of our SIGHT activities, the workshop was held on 25th February at Aoyama Gakuin University. Various people from different generations, positions, and professional fields gathered and we had a fruitful discussion. In this Akar workshop, Simay



(IEEE SIGHT Engagement Subcommittee Chair) kindly provided the introduction talk of SIGHT. In the discussion, there had an idea that we should focus to "Technology-related policy project" as our theme. For better future for all human, we should think about the new philosophy for the improved technology. The specific technology can solve the specific problem, but the philosophy can solve wider problems



universally. We promise to keep the brainstorming, so that we will have an appropriate theme for us in the near future.

11. UPCOMING EVENTS

SS12 Asia 2018 – Age of Innovation

Udari De Alwis

IEEE Member, IEEE Sri Lanka Section



SS12: Age of Innovation 2018 is an international project competition and a maker fair to recognize the best social innovation, in the theme "Empathy to Engineering: Solutions for Micro Issues". The competition is open for undergraduates from all around Asia. Deriving from the theme, the innovations should address global issues such as Poverty and Famine, Disaster Management and First Aid, Special Needs, Women Safety, Healthcare or Literacy.

The competition will be held in multiple countries as Prelim/Pilot level and then the winners would compete at the Asia Finals, held in Colombo, Sri Lanka, on 08th and 09th September 2018. The final competition comprises of four tracks; Innovation Challenge which features the winners of the pilot competition, Maker Fair Exhibition to showcase the work of innovators, makers and doers, Virtual Track for global competitors and Junior Einstein event for School Children.

So, Keep an eye on http://www.ieeess12.com/ for the call for applications!

12. GENERAL READING

IT News in Q1 2018

Article by Professor Sowmyanarayanan Sadagopan is the Director of IIIT-Bangalore. These are his personal views. He can be reached at <u>ss@iiitb.ac.in</u>

General

• January 3, 2018 announcement of **security bugs** ("Meltdown" and "*Spectre*") in processor chips causes havoc in tech industry.



- Cape Town in South Africa runs **out of water** in February 2018; many cities including Bangalore likely to follow suit in the next decade.
- Punjab National Bank scam hogs the limelight much of February 2018 in Indian media
- Facebook loses \$ 35 Billion of market value in a day on March 18, 2018; its founder Mark Zuckerberg issues full page apology in leading newspapers in USA; India's Supreme Court continues hearing on AADHAAR; UK-based consulting company "Cambridge Analytica" in the news for all the wrong reasons all leading to lots of attention on **data protection.**
- With USA and China getting into competitive protectionist measures, the world starts to have a sort of **trade war** starting March 2018.
- •

<u>Technology</u>

- **ISRO** successfully launches 31 **satellites** on January 12, 2018 and hits a century of ISRO's own satellites; unfortunately, its communication satellite launched on March 31, 2018 is still "out of reach".
- India hosts **global solar technology alliance** for the first time in Delhi on March 11, 2018 with over 150+ countries represented in the event.
- **P&W engine trouble** leads to hundreds of flight cancellations in India by IndiGo and other Airlines in March 2018.

Products

- Xiaomi Redmi 5 and OnePlus 5T mobile phones launched in the first quarter of 2018 in India.
- The world saw multiple product launches including **NOKIA 8** and **Samsung Galaxy 9** during **Mobile World Congress** (February 26 to March 1, 2018); Samsung launches **Galaxy 9 in India** on March 6, 2018.
- Western Digital announces 14 TB disk drive availability by July 2018 on March 13, 2018.
- Apple launches new products focused on schools including \$ 299 iPad in March 2018.

Markets

- Indian stock markets in a roller coaster; NSE's NIFTY crossed 10,700 for the first time on January 15, 2018; BSE's Sensex crosses 35,000 for the first time on January 17, 2018, but there was a crash soon after; Sensex tanks 840 points on February 2, 2018 a day after the Union Budget; the up and down journey continued for the full quarter; global stock markets were no different; Dow Jones index recorded the biggest single day fall since August 2011 on February 5, 2018 and again on February 8, 2018 wiping out \$ 4 Trillion globally; USA China trade war continues to spook the markets in March 2018 leading to another crash on March 23, 2018.
- HDFC Bank market value crosses 5 Trillion INR in January 2018.
- 70-year old iconic store chain **"Toys R Us"** becomes history in March 2018 with 800+ outlets shutting down.



- In <u>mergers & acquisitions</u> in the quarter saw the iconic Xerox getting acquired by Fuji on January 31, 2018 after 115 years of existence; in January 2018 BirlaSoft and KPIT merge; Quess Corporation acquires online recruitment company Monster; InMobi acquires Los Angeles based AerServ for \$ 90 Million; in March 2018, QuestGlobal acquires Exilant (founded by ex-Infosys employees in 2004) and Wipro acquires 30% stake in US-based Cybersecurity firm Denim group.
- <u>IPO scene</u> in the quarter saw successful IPO by **NewGen Software** (subscribed more than 8 times) in January 2018, **Bandhan Bank** (subscribed more than 14 times) in March 18,2018 and weak show by **ICICI Securities** and **Hindustan Aeronautics** in March 2018.

Indian IT Companies

- Salil Parekh takes over as Infosys CEO on January 2, 2018.
- TCS and Infosys announce good quarterly results on January 11 & 12 respectively.
- **TCS** bags multi-year \$ 2 Billion **TransAmerica** order the largest ever for TCS; TCS market cap crosses 6 Trillion on January 25, 2018.
- Ola goes to Australia in January 2018.
- Wipro acquires 30% stake in US-based Cybersecurity Firm Denim group and sells Data center business to Ensano for \$ 405 Million; invests in US-based AI start-up Avamo; starts operations in Piano, Texas in USA all in the first quarter 2018.
- Infosys starts 4th Development Center in USA in Indianapolis in March 2018.
- Indian mid-size IT services firm **Zensar** acquires US-based AI Startup **Cynosure** for \$ 33 Million on March 23, 2018.
- **Tejas Networks** gets ₹ 336 Cr **BharatNet** order from BSNL on March 28, 2018.
- **Cognizant** gets into tax difficulty with its accounts frozen for a week in March 2018.

<u>People</u>

- Dr. Sivan takes over as ISRO Chairman on January 10, 2018.
- High-profile visitors to India in the quarter include Israel Prime Minister in January 2018, IBM global CEO, Uber CEO, Iranian President and Canadian President in February 2018 and French President in March 2018.
- **IIT Bombay Alumnus Parag Agarwal** becomes Twitter CTO in March 2018.
- Chinese Premier Xi set to rule China for life as per Parliament decision of March 10, 2018.
- Renowned Scientist **Stephen Hawking** passed away on March 14, 2018.

Interesting start-up activities

- InMobi buys AerServ for ₹58 Cr on January 10, 2018.
- Pune-based Travel Assistant App Mezi acquired by American Express on January 30, 2018.
- EduTech start-up **Byju's** started by Byju Raveendran turn Unicorn in March 2018.



 Hackathons are a craze! 2-Day National hackathon at Nagpur in March 2018 saw 40 winners out of 10,000+ students representing 1,296 teams from 28 nodal centers across India; even Vatican had a hackathon vHacks in March 2018.

Education & Research

- Computer Architecture pioneers Professors John L Hennessy and David A Patterson get **Turing Award** for 2018.
- **UGC** announces **graded autonomy**; 60 Universities get autonomy in the first place (25 Universities under Category 1, 27 Universities under Category 2 and 8 Autonomous Colleges).
- With President giving assent to the **IIM Bill**, the Institutes get powers to award degrees on January 1, 2018; **IIMB** takes the lead in conferring MBA on March 28, 2018
- **Krea University** in Sri City a new generation Liberal Arts university with Mr. R Seshasayee (ex CII President and Ashok Leyland Chairman) as Chairman to start functioning from 2019.

Interesting mobile apps

• With Congress accusing **Narendra Modi App** of stealing data and BJP accusing **Congress App** of doing the same and Congress deciding to withdraw the App later, **mobile Apps** hog limelight.

Interesting numbers

- Indians sent 20 Billion WhatsApp messages (globally 75 Billion) on New Year day 2018.
- Apple sold more watches (8 Million in October to December 2017) than the entire Swiss watch industry!
- India's mobile phone subscribers and wireline subscribers as of January 31, 2018 stood at 1152 Million and 24 Million as per TRAI Press Release 35/2018 release of March 23, 2018.
- India's foreign exchange reserves March 31, 2018 stood at \$ 424 Billion (a record) (RBI).
- Indian Rupee Vs USD was at 65.07 on March 31, 2018 (RBI)

NASA Spurs Tech Research and Development with Small Business Awards

NASA will fund several American small businesses to advance research and technology in support of NASA's future space exploration missions. A total of 128 proposals were selected from among those submitted by private industry as part of Phase II of NASA's 2017 <u>Small Business Innovation Research</u> (<u>SBIR</u>) program. The winning companies will receive awards totalling \$96 million.





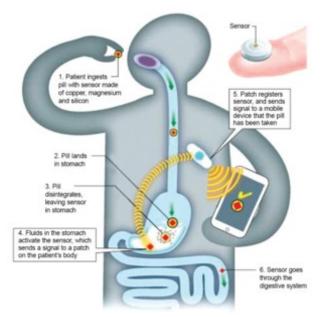
The proposals will support development of technologies in a broad range of areas, including aeronautics, human space exploration and operations, science and space technology. The technologies are distributed amongst 22 focus areas, including propulsion technologies, power energy and storage, robotic systems, life support and habitation systems, in-space manufacturing and air vehicle technology.

"We look forward to working with these promising small businesses to further advance NASA's missions," said Jim Reuter, acting associate administrator for NASA's Space Technology Mission Directorate (STMD), in a press release. "NASA is proud of our investment in the success of small businesses and its long-term impact on our economy."

NASA's SBIR and Small Business Technology Transfer (STTR) programs are designed to benefit the U.S. economy by stimulating technological innovation in the private sector and increasing the commercial application of research results. The programs award funding to American small businesses to perform research and development aligned with the needs of the federal government. <u>Read More.</u> Source: <u>https://insights.globalspec.com</u>

Edible Electronics: A Joke or a Cure?

Implantable and ingestible (edible) electronic devices that stay inside your body pose unique engineering challenges. These should not only use the best processor but also be minimal in size, biocompatible, safe and extremely reliable. Reliability is all the more important as it often turns out to be a case of life or death!



Despite so many risks and challenges, it is awesome to see how implants have developed since the days of the first pacemaker in 1958. From cardiac pacemakers to cochlear implants, from brain interfaces to retinal implants, there are numerous implantable medical electronic devices available today. Even more exciting is the emerging field of edibles—tiny, capsule-sized electronic devices that are consumed orally for diagnosis and treatment of diseases. Some edibles are designed to remain inside the body for some time, while others do their job and get disposed of within minutes.



Today, we have reached a state where inventions like these no longer surprise us because our minds have become tuned to a sci-fi future, and we have started expecting such developments. So let us put aside the wow-factor, and instead look at the current and future state of implants and edibles. <u>Read</u> <u>More.</u> Source: <u>https://electronicsforu.com/</u>

'Digistain' technology offers revolution in cancer diagnoses

The way cancer is diagnosed could soon be more accurate and reliable thanks to a team of British scientists.



The team, led by Professor Chris Phillips from Imperial College London, developed a new imaging technology to grade tumour biopsies.

Publishing <u>their results</u> today in the journal *Convergent Science Physical Oncology*, they describe how their new method promises to significantly reduce the subjectivity and variability in grading the severity of cancers. Nearly all cancers are still diagnosed by doctors taking a sample of the tumour, a so-called biopsy, then slicing it thinly and staining it with

two vegetable dyes used for more than 100 years. They look at this 'H+E stained' sample under a microscope and then judge the severity of the disease by eye alone.

Life-changing treatment decisions must be based on this 'grading' process, yet it is well known that if you give the same slice to different practitioners they will only agree on its grade about 70% of the time. This results in an overtreatment problem that constitutes a massive unmet need worldwide. Read More. Source: http://ioppublishing.org/

Semi-automated Subsea ROVs Enable Faster and Safer Projects for Oil and Gas Industry

Underwater remotely operated vehicles (ROVs) are used in subsea and offshore projects sometimes operating at depth of up to 3,000 meters below sea-level.



These ROVs assist with servicing subsea infrastructure, managing assets and performing maintenance and construction tasks at the seafloor. Because these robots are complex and need to be agile to work remotely underwater, these projects require highly skilled and trained operators.

However, Mark Carrier, market development director for emerging industrial internet of things (IoT) markets

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at Real-Time Innovations (RTI), tells Engineering360, these operators are in short supply and the oil industry is bracing for an era where 50 percent of the employee base will be eligible for retirement in a few years. Automation in these oil and gas subsea operations can help bridge the labor gap, he says.

"The industry has always been a technical laggard and is turning to other industries for examples on how to solve the problems of safety and loss of domain knowledge," Carrier says. "Most automation projects in the oil and gas segment are aimed at removing the human from the day-to-day operations to an oversight role. Having the human oversee the process instead of facilitating the process provides a safer and more economical solution."

TechnipFMCRTI's connectivity framework, called RTI Connext DDS, which enables faster and more secure connectivity to underwater ROVs has recently been adopted by the Schilling Robotics business unit of TechnipFMC for a new generation of remote robotics controls to provide semi-automation reducing the dependency on a human workforce. Read More, Source: https://insights.globalspec.com

ULTRASONICS: Cleaning Silently with Sound Waves

Often, we struggle to clean electronic gadgets and other gizmos, especially those having small, delicate, inaccessible parts. The proven solution to such a need is an ultrasonic cleaner. To understand how an ultrasonic cleaner works, we should look at the techniques behind it and its inner electronics.

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 ultrasonics. 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. <u>Read More</u>. Source: https://electronicsforu.com/

