



# Connections

Quarterly Newsletter for Institute's Friends, Patrons, Mentors and Students

Feb. - April 2021 Vol 10 - Issue 3

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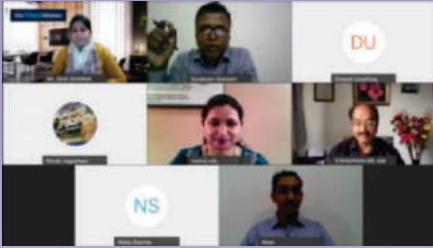
Research & Development

Forum for Innovation Incubation Research and Entrepreneurship (FiIRE)



## NEWS IN GENERAL

### **Prof. Mohini Naik, invited as a Panelist for the Program on Role of mentors in ATL Marathon organized by AIM NITI AYOG, New Delhi**



YouTube live ATL Marathon series- "Role of Mentors in ATL Marathon was organized by Atal Innovation Mission, NITI A y o g ,

Government of India on February 12, 2021. Prof. Mohini Naik, Regional Mentor of Change (RMOc) NITI Ayog for the Goa state was invited as the panelist for the program. Program Director- R. Ramanan was the moderator.

Program Director- R. Ramanan, AIM, gave a brief introduction about ATL Marathon. Panelists had a discussion on Mentor community and ATL, success stories of the ATL Mentors. The entire program was telecast on the AIM YouTube channel. The program received good feedback from the entire mentor community.

### **Prof. Mohini Naik, invited as a Panelists for the Program on Opportunities for Women Entrepreneurs in Education organized by Atal Innovation Mission (AIM), NITI Aayog AIM in partnership with FICCI, FLO**

Prof. Mohini Naik, Regional Mentor of change (NITI AYOG), faculty on Don Bosco College of engineering, Goa, was invited to participate in the first edition of the Webinar series about Opportunities for Women Entrepreneurs in Education on Feb 23, 2021.

Atal Innovation Mission (AIM), NITI Aayog in partnership with FICCI, FLO had organized a webinar series focusing on Opportunities for Women Entrepreneurs. This webinar series is a means to reach out to aspiring women and encourage them to become entrepreneurs by discussing potential areas wherein they can start a business.

The webinar was moderated by Mr. Ramanan,

Mission Director, Atal Innovation Mission as well as Ms. Maloo Natarajan, Chairperson, FICCI FLO, Mumbai Chapter. The objective was to celebrate women leaders & achievers who have opened up new opportunities for themselves & for others. Entire program was telecast on AIM YouTube channel. Program received good feedback from the entire community.

### **Guest Lecture on Insights of Amateur Radio and preparation for HAM radio examination**

Student Satellite Club-Parikrama, Don Bosco College of Engineering, Fatorda, organized a guest lecture on Amateur Radio and HAM radio examination on February 25, 2021. Mr. Amey Pandit was the speaker for the program. He is an embedded system design engineer by profession and HAM with call sign VU2YQ.

Mr. Amey pandit started the session by introducing the Amateur Radio and the benefits of becoming HAM radio operator. He also discussed the paper pattern and syllabus for the HAM exam. This lecture benefitted all the members of the club and also those who will be answering the exam. The entire event was coordinated by Prof. Mohini Naik, PI of satellite club, ETC Department

### **HAM radio licensing examination organized by Student satellite club-Parikrama**

Student Satellite Club-Parikrama, at Don Bosco College of Engineering, Fatorda, organized a HAM Radio examination on February 28, 2021.

The Ham radio licensing examination is known as the Amateur Station Operator's Certificate Examination (ASOC examination). It is conducted by the Wireless Planning and Coordination (WPC) wing of the Ministry of Communications, New Delhi at the Wireless Monitoring Stations located throughout the country.



There were a total of 40 student registrations from Goa and Maharashtra. Student satellite members also appeared for the examination for both the grades i.e. restricted and general license. The examination was conducted by Shri Nalnish Srivastava, Wireless Monitoring station officer from Bhopal and his team from WMS Goa. The entire event was coordinated by Prof. Mohini Naik, PI of satellite club, ETC Department and Prof. Sweta Morajkar, CO-PI of satellite club, Computer Department.

## Unnat Bharat Abhiyan (UBA) visit Xeldem village.



Unnat Bharat Abhiyan (UBA) team members, Prof. Satyesh Kakodkar, Prof. Yeshudas Muttu and Prof. Sweta Morajkar along with Mr. Tushar Sawant, Enterprise Development Manager, FiiRE (Forum for Innovation Incubation Research & Entrepreneurship) visited Xeldem village Panchayat on March 5, 2021. The UBA team interacted with the Sarpanch, Mr. Caitano F. J. de Lima along with the active Panch members, Mr. Vithoba Naik, Mr. Babu Shetkar and Mr. Johan Fernandes. The main objective of this gathering was to carry out entrepreneurship oriented training programs for the people from Xeldem, Goa, thus serving the mission of Unnat Bharat Abhiyan.

Mr. Tushar Sawant gave a brief overview about the various schemes and training programmes available in the field of Food technology and Agriculture including Oyster mushroom cultivation, Bee keeping, support for Jaggery unit, etc. He spoke about One district One Product (ODOP) which aims at giving a major push to traditional industries. The objective of the ODOP is to optimize production, productivity and income, preservation and development of local crafts, promotion of art, improvement in product quality and skill development. Mr. Sawant shared his views about

various ways of creating more than 100 microenterprises and different financial schemes for the same. He also spoke about assistance in Marketing and Packaging provided by FiiRE. The Sarpanch along with the Panch members discussed the action plan to identify the interest of their villagers & provide them training accordingly. UBA team members suggested having an awareness Programme for the Xeldem Villagers which was accepted by the Sarpanch & Panch members to be conducted on March 27, 2021.

## International Women's Day 2021

Women's Day was celebrated on March 8, 2021 with all the lady staff members of the college. Keeping in mind this year's theme for International Women's Day 2021, "Women in leadership: Achieving an equal future in a COVID – 19 world", Don Bosco College of Engineering decided to acknowledge the efforts of two of their members for their contribution to society despite the pandemic.

Ms. Preeti Jagadev, Alumna, Batch 2015, Department of Electronics & Telecommunications, who excelled in the field of Optics and Mrs. Mohini Naik, Don Bosco College of Engineering, Department of Electronics & Telecommunications a 'Mentor for Change' who was also awarded the best Mentor in the state were both felicitated at the event on March 8, 2021.

The felicitation took place at the hands of Director-Rev. Fr. Kinley D'Cruz and Principal -Dr. Neena Panandikar and in the presence of Prof. Michelle Araujo e Viegas.

Dr. Neena Panandikar introduced the Chief Guest Ms. Preeti Jagadev, Ms Preeti spoke of her journey and said " there are 3 things I believe paved my way to success, first being self confidence which is the only



permanent thing in one's identity and the key to success, the second is knowing that rejection is a must as it redirects you to something much better in life and lastly, one should never sacrifice one's identity for anybody. Stay true to self.”

Mrs. Mohini Naik thanked the Director, Principal, her present as well as her former Head of Department and her colleagues for all their support and encouragement in her journey.

Rev. Fr. Kinley D'Cruz in his address, spoke on the great contribution of women in all spheres of the world from family to work. He said that nobody balances life in a better way than a woman and that women now have taken over men's roles with confidence and independence.

The Institute initiated a Women's Club -“Dhrsni” on this occasion.

This was followed by a small programme in which Prof. Janhavi Naik performed a beautiful dance, a video compiled by Prof. Nisha Godinho and a song sung by Prof. Sweta Morajkar was played, Prof. Ulpa Waingankar read out a beautiful Hindi poem on Women which she herself composed.

The crowning glory of this program was the finger print art of every women staff member depicting leaves that was placed on a beautiful painting done by Ms. Grebian Alemao .

### **Awareness program on One District One Product organised by UBA & FiiRE**



Unnat Bharat Abhiyaan, Don Bosco College of Engineering & Forum for Innovation, Incubation, Research and Entrepreneurship (FiiRE) organised an awareness program on One District One Product (ODOP) approach under Atmanirbhar Bharat and

Swayampurna Goa in Xeldem panchayat hall for the people of Xeldem Village on March 27, 2021. The speaker for the program was Mr. Tushar Sawant, Enterprise Development Manager, FiiRE, Goa. He informed people about the concept of ODOP and the scope and benefits under it. He also explored some business opportunities for the people of Xeldem village based on the availability of resources. The discussion went on for around one and half hour. The participants along with the Panch member Mr. Johan Fernandes gave a positive feedback and showed keen interest in starting a business under the scheme.

## **DEPARTMENT OF CIVIL ENGINEERING**

### **Site visit to NIT Goa Campus Balli**

A group of third year Civil Engineering students visited the new campus of NIT Goa at Balli on March 27, 2021.

The Project is being undertaken by the Pune based construction company, B G Shirke. The students were welcomed by Er. Umapasrad, who gave an overall gist of the site. Manager (Planning), Er. Pramod Yadav accompanied the students to the site.

The company is a pioneer in precast technology and they are continuing to be so by introducing it in this project. To produce precast building elements, they are setting up a factory. The factory will produce elements like columns, beams and walls. The site also contains a concrete batching plant which will produce concrete at the site itself.

The students visited the ongoing foundation work of different buildings which were cast in situ not precast. Er. Yadav informed the students that the soil was hard lateritic so they had to be drilled up. The students were also taken into the factory where they were setting up the form work for building elements. The factory used lifting cranes which had a capacity of 150 tonnes.

The students visited batching plant where he explained how concrete mix is prepared as per the

design and how the materials are collected from the silos.

By introducing precast technology in this project, the aim is to reduce the duration for the completion of the work.

Prof. Satyesh Kakodkar, Assistant Professor accompanied the students.

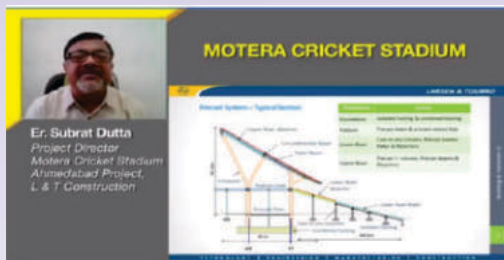
## Alumni Talk

The Department of Civil Engineering organized an online Alumni talk for the SE, TE and BE Civil Engineering students on April 5, 2021. The session was for half an hour in which Mr. Alam Maqsood (batch 2018) and Ms. Nehalee Talawnekar (batch 2017) shared their experience at their respective work place after completion of their higher studies. Mr. Alam Maqsood spoke about effective interview skills in which he spoke about how one should prepare themselves to answer the interview. Ms Nehalee spoke about her studying experience at Don Bosco and encouraged students to join civil engineering.

## Webinar on Water Proofing Solutions and Construction of Motera Cricket Stadium

The Department of Civil Engineering conducted a webinar on Water Proofing solutions by Ultra tech Cement Pvt. Ltd on April 10, 2021. The webinar was attended by Civil Engineering students of SE, TE and BE.

The speaker for the session was Mr. Vikrant Dessai, from Ultra Tech Cement Pvt.



Ltd. In his session, he spoke about various types of Waterproofing, its importance and different waterproofing products offered by Ultra tech cement. He also discussed about the various areas of the structure which require attention with respect to waterproofing.

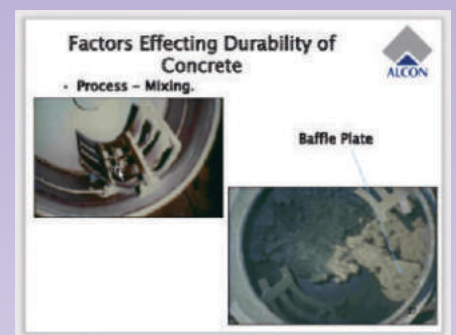
The second session of the webinar was a recorded video shared by Ultra tech cement on the Construction of Motera Cricket Stadium -The largest cricket stadium in the world which was delivered by Er. Subrat Dutta, Project Director, Motera Cricket Stadium, Ahmedabad Project, L&T Construction. The speaker spoke about technicality, design and construction process of the stadium which was very beneficial to the students.

In all, 83 students and faculty members from Civil Engineering Department attended the webinar.

The webinar was coordinated by Assistant Professor Starina Dias and Assistant Professor Akshata Kudchadker.

## Webinar on “Concrete In Practice”

A Webinar on “Concrete In Practice” was organized by Department of Civil Engineering on April 24, 2021 for second year, third year and final year civil



engineering students. The speaker for the session was Mr. Siddhesh R. Kamat Mhamai, DGM, QCP, Alcolab India LLP, Goa. He gave an insight to the students on properties of concrete like cohesiveness, workability and factors affecting workability. He stated that workability decreases with time. Ready mix concrete is more workable as drum of transit mixer rotates continuously and agitates concrete, but on site it depends on efficiency of the workforce. Quantity & characteristics of cementing materials affect workability and it is also affected by concrete batching consistency, aggregate grading, shape and surface texture. He explained the effect of adding water to concrete wherein it was mentioned that with more water addition compressive strength decreases. Workability is affected by ambient air temperature and also admixtures.

He highlighted on factors affecting durability like silt

content, mixing and process involved in transporting, placing, compacting and curing. He focused on factors affecting measured cube strength, representative sampling (IS 1199), assembling of cube moulds, casting of cubes (IS 516). He explained how to maintain de-moulded cubes in water at right temperatures, correct mode of cube failure in CTM and purpose of quality control to store cube moulds. All together, 72 participants attended the session. The talk was organized to enlighten students on practical applications of concrete to follow proper methods of mixing, casting, testing etc for better quality work.

The Faculty coordinators were Asst Prof. Swaroopa Sail and Asst Prof. Starina Dias.

## DEPARTMENT OF MECHANICAL ENGINEERING

### Department of Mechanical Engineering R&D Knowledge Sharing Session

The Department of Mechanical Engineering held its monthly Knowledge Sharing Session, under the R&D cell on February 26, 2021. The first session was taken by Prof. Sanjeel Naik on Recent Trends while Prof. Raymond Joseph presented a technical paper in the second session.

Prof. Sanjeel Naik presented a technical talk titled 'Microwave Processing of Materials'. He introduced the topic highlighting the application of microwaves in material processing, in particular, metallic materials for sintering, brazing/joining, melting, cladding, drilling of holes etc. He later highlighted the difference in microwave heating over conventional heating and also explained the microwave hybrid heating setup along with the role of susceptor in absorbing the microwave energy for heating the specimen. He concluded by mentioning the recent



developments in joining of materials like Stainless Steel, Gray Cast Iron, Aluminium, Inconel 625 etc. with compatible susceptor mediums.

Prof. Raymond Joseph presented a technical paper on 'Crash Analysis for Energy Absorption'. He began by highlighting the motivation behind the crash analysis of passenger cars and the current standards. He then presented his research work in studying frontal rails of passenger car during the frontal impact using a dynamic explicit finite element code. A 3D CAD (Computer-aided design) model of the frontal rails was developed in CATIA, pre-processed in HYPERMESH and solved in ABAQUS, studying the displacement and energy interactions for steel and aluminium materials. Lastly, he gave a demonstration on the axial impact of tubes with and without stiffeners using paper models.

The session was attended by teaching and technical support staff from the Department of Mechanical Engineering and coordinated by Prof. Mayur Shetti.

### Mechanical Department of DBCE Participates in SCIFFI 21

The 6th edition of the Science Film Festival of India ('SCI-FFI 21') was organised by Vidnyan Parishad, Goa on March 17 and 18, 2021 at



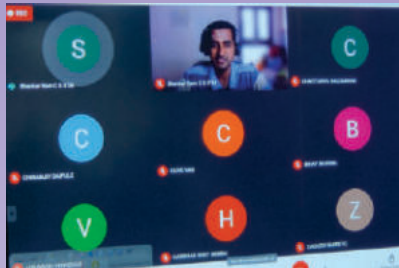
Maquinez Palace, Panjim. An innovation exhibition was held in association with IIT Goa, NIT Goa, Don Bosco College of Engineering, Fatorda, Goa state Innovation Council and Indosaw at the old GMC building.

A project titled "Atmospheric Water Generator", mentored by Prof. Gaurish Samant was displayed by the Mechanical Department and final year student, Pankaj Kumar participated in the event. More than 1000 students from various schools and colleges and the general public visited the expo. Prof. Ajit Salunke, Prof. Satyesh Kakodkar and Prof. Gaurish Samant also visited SCIFFI 21 and interacted with the young

innovators. DBCE has associated with SCIFFI since the year 2019.

## Department of Mechanical Engineering Webinar on Antilock Braking system and its Practical Application

The Department of Mechanical Engineering of Don Bosco College of Engineering conducted a webinar on Antilock Braking system and its Practical Application on March 27, 2021 in association with IEI DBCE Mechanical student chapter for the third year Mechanical Engineering students. The speaker for the session was Dr. C.S. Shankar Ram, Professor, Department of Engineering Design, IIT, Madras.



The speaker started the session with a brief overview of objectives of braking system and the functioning of hydraulic brake system. He explained how the ABS (Antilock braking system) helps the driver to maintain some steering ability and avoid skidding while braking. A typical ABS system includes wheel-speed sensors, a hydraulic control unit, and an electronic control unit. When the brake pedal is applied, the electronic control unit monitors and compares the signals from the wheel-speed sensors. If the electronic control unit senses rapid deceleration at a given wheel, the electronic control unit commands the hydraulic control unit to reduce hydraulic pressure to that wheel.

The Anti-lock Braking System is designed to maintain vehicle control, directional stability and optimum deceleration under severe braking conditions on most road surfaces. It does so by monitoring the rotational speed of each wheel and controlling the brake line pressure to each wheel during braking. This prevents the wheels from locking up. He concluded the session by showing videos of ABS and non-ABS vehicle thereby highlighting the importance of ABS in vehicles.

## DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

### Asst. Prof. Kimberly Morais, invited as Speaker for eSim workshop

Asst. Prof. Kimberly Morais of the Electronics and Telecommunication Engineering Department was invited as a Speaker for a 3 Day workshop on Electronic Circuit Simulation using eSim that was organised by the FOSSEE eSim team at IITB (Indian Institute of Technology, Bombay). The workshop was conducted via online mode during the period between February 11, 2021 to February 13, 2021.

The FOSSEE project is part of the National Mission on Education through Information and Communication Technology (ICT), Ministry of Education (MoE), Government of India. FOSSEE promotes a lot of open source software, out of which one is eSim.

The aim of the workshop was to introduce to the participants how to work with the eSim software and also make them aware of the different activities carried out by the FOSSEE eSim team.

The Speaker elaborately explained how the eSim software was used to engage practical sessions. The session was well received and attended by around 100 participants.

### 3<sup>rd</sup> Installation of IEEE DBCE Student Branch

The IEEE Student Branch of Don Bosco College of Engineering organized its 3rd Installation on Saturday, March 20, 2021. The Chief Guest for the function was Dr. B. Satyanarayana, Chair of IEEE Bombay section; connected virtually through Google



meet. Rev. Fr. Kinley D'Cruz, Director; Dr. Neena Panandikar, Principal; Mrs. Varsha Turkar, HOD of ETC Department; and Mr. Yeshudas Muttu, IEEE Student Branch Counselor; were the other dignitaries present for the function. The comperes for the event were IEEE Student members, Mr. Renvick Fernandes and Ms. Anjima Rajesh.

The ceremony commenced with a welcome prayer recited by Ms. Krystal Fernandes followed by lighting of the traditional lamp. The dignitaries were then given a floral welcome. Thereafter, Director Rev. Fr. Kinley inspired students to follow their passion and work hard aiming at gaining knowledge through these forums. Later, Dr. Neena Panandikar briefed the audience about the achievements of IEEE Student Branch & introduced the Chief Guest, Dr. B. Satyanarayana.

The Chief Guest, in his address touched upon the IEEE benefits and encourage the students to establish professional student chapters that would be helpful for the students as well the faculty in their research. He appreciated the efforts put in by Dr. Varsha Turkar & Prof. Yeshudas Muttu for the work they do for the student branch as well as the section. He concluded his speech by mentioning about the big IEEE events coming up in Goa & requested the IEEE DBCE Student branch members to actively volunteer for the same.

This was followed by a premiere of the IEEE DBCE student Branch activities video for the year 2020. Later, Prof. Yeshudas Muttu addressed the audience stating the importance of the IEEE SB administration & IEEE DBCE executive members 2021 who were introduced to the audience. This was followed by the oath taking ceremony. The Branch Officers appointed are Chairperson – Ms. Neha Joshi, Vice-Chairperson- Mr. Saiesh Naik, Secretary- Ms. Sheena Mashelkar, Joint Secretary- Ms. Rosann Godinho, Treasurer- Mr. Saish Mandrekar, Joint Treasurer- Ms. Anjima Rajesh and Webmaster- Mr. Nafiro Fernandes.

Thereafter, Mr. Gautam Desai, former IEEE vice chair spoke about his IEEE experience & motivated others to extract maximum benefit from the student branch. Ms. Neha Joshi, Chair of IEEE DBCE SB, encouraged the IEEE student members to be a part

of future IEEE events. The formal function concluded with a vote of thanks delivered by Ms. Sheena Mashelkar, Secretary of IEEE Students Branch.

## Two-day hands on training on “Robotics with Firebird V”

The e-Yantra Robotics Team of Electronics & Telecommunication Department organized a Two Day Workshop on Firebird V Robot for the students of TE ETC, on March 26-27,2021. The purpose of the Workshop was to spread education in Embedded systems and Robotics.

The Workshop would also ensure better Final year projects in this area. The students were divided into 7 teams with 5 members each to work on the Firebird V Robot.

### Day 1: 26th March 2021

The first session was engaged by Prof. Yeshudas Muttu on Introduction to Robotics that included Major Components such as Sensors, Actuators, Control system, Intelligence, Power supply, Communication, Indicating Devices of a Robot and Introduction to Firebird V ATmega 2560. The students were also introduced to the various Input-Output Ports and Registers in ATmega 2560 and how they can be accessed. Subsequently, the students were given hands-on exposure in Embedded C programming for interfacing the Buzzer, Boot Switch and Bar-graph LED using the Atmel-6 Studio.



The second session was taken by Prof. Flavia Leitao on interfacing the LCD with the Firebird V Robot. The students were briefed on the LCD operation and were then asked to interface the LCD and the Boot Switch for a given application. This was followed by interfacing of the Motors. The students were briefed on the Motor Driver IC L293D and the different Motions and were then given a small task of how to interface the Motors and device an application to make the Robot move in a defined direction.

## Day 2: 27<sup>th</sup> March 2021

The sessions on the second day were engaged by Prof. Deron Rodrigues. First session included introduction to counters and timers in ATmega 2560 for calculating time delays for various applications. Subsequently, Pulse Width Modulation (PWM) was introduced followed by hands-on program to control the Velocity of the Motors. In the second session, the students were also taught analog sensor interfacing using Analog to Digital conversion. The session included overview on the sensors like Sharp IR sensors, Proximity Sensor etc, interfaced to the different channels of ATmega2560 followed by ADC initialization and programming.

The students had an amazing learning experience and showed great enthusiasm executing the given challenges. They suggested that such workshops should be conducted in future more often so that they would provide learning beyond curriculum.

## Outreach Programme at Government High School, Kalay

As a part of National Skills Qualification Framework (NSQF) under Ministry of Skill Development and



Entrepreneurship, IEEE DBCE Student Branch in association with IEEE Bombay Section SIGHT (Special Interest Group on Humanitarian Technology) organized an Outreach Programme at Government High School, Kalay, Sanguem- Goa under Goa Samagra Shiksha Abhiyan on April 19, 2021. The main objectives of this event were to make students aware about the Electronics & Telecommunications field and to assess the availability of the resources in the laboratories. The invited resource persons were Prof. Yeshudas Muttu & Prof. Mohini Naik Gadekar.

The Electronics & Hardware Instructor, Ms. Karishma Naik, introduced the guest speakers to the audience. The event started off with a session on

“Electromagnetic Wave & Spectrum” by Prof. Mohini Naik Gadekar. She introduced the school students with basic electromagnetism concepts. She also demonstrated the transmission and reception of the data using Morse code kit.

The next session titled “Electrical, Electronics & its applications” was delivered by Prof. Yeshudas Muttu. He briefed the students about the basic electrical & electronic components used in day to day life and the physics behind it. Later, students were familiarized with basics of robotics, interfacing devices like sensors, motors, etc. and integrated electronics & electrical to build a robot.

The students were very interactive and showed keen interest in the field of Electronics & Telecommunications. The event concluded with a Vote of Thanks by Ms. Karishma Naik.

## Don Bosco College of Engineering students develop Sanitizing Robot, receive appreciation from Honourable Chief Minister of Goa Dr. Pramod Sawant & Honourable Health Minister of Goa Shri. Vishwajeet Rane

Final year Electronics & Telecommunication Engineering students have developed a sanitizing Robot, which works remotely and can sanitize closed offices, open markets, public areas, Hospitals etc without the intervention of any frontline workers.

Mr. Vivek Khadilkar, Mr Saeel Kamat & Ms. Drasti Naik have developed and tested the project under the guidance of Prof. Mohini Naik Gadekar & Prof. Michelle Viegas, Asst. Professors at DBCE. They received guidance and support from the Director Fr. Kinley D'Cruz, Principal Dr Neena Panandikar & HOD Dr. Varsha Turkar.

Honourable Chief Minister, Dr. Pramod Sawant, appreciated the work done by the students and encouraged them to work further for the benefit of the



society. Students also received appreciation and encouragement from the Honourable Health Minister of Goa Shri. Vishwajeet Rane.

## DEPARTMENT OF COMPUTER ENGINEERING

### “IV Republican Scientific - Practical Conference Of Young Researchers”

Dr. Gaurang Patkar was invited as a speaker to share his research in IV REPUBLICAN SCIENTIFIC - PRACTICAL CONFERENCE OF YOUNG RESEARCHERS, on April 9, 2021, which was organized by Azerbaijan University, Azerbaijan. The conference was held on the following blocks: ICT and its applications, Economics, Humanitarian sciences and Social sciences. The conference was opened by the Vice-Rector for Scientific Affairs, Professor Yusif Gasimov. He said that more than 100 theses were accepted and thanked the authors for submitting their scientific results to the University of Azerbaijan. The purpose of the conference was to get acquainted with ideas on the scientific innovations obtained in the fields of ICT and its applications, economics, humanities and social sciences of young researchers. Dr. Yusif Gasimov, Vice Rector at Azerbaijan University, Azerbaijan was very appreciative of the research conducted by Dr. Gaurang Patkar and congratulated him. Dr. Yusif also offered that Dr. Gaurang could submit his research in the Journal named “Research in Agriculture and Veterinary Sciences”. The conference ended with discussions on the submitted works.

## SCIENCE AND HUMANITIES

### 8th SEED Council Induction Program

The installation of the members of the Students Association (SEEDS) 8<sup>th</sup> Council for the academic Year 2020-2021 was held on the March 25, 2021. The Chief guest for this occasion was Mr. VSS Sastry.

It began with a prayer for Mother earth, followed by 'Nurturing of SEEDS', symbolized by the watering of

a plant by all the dignitaries, Rev. Fr. Kinley D'Cruz, Principal Dr. Neena Panandikar, Registrar Dr. Kala Nayak, and the SEEDS faculty coordinators Prof. Ulpa Waingankar and Prof. Maya Lin Noronha. The Dignitaries were then escorted to the dais.



The newly elected SEEDS members were administered the oath by HOD

of Science and Humanities Dr. Kala Nayak, followed by the outgoing committee handing over their badges to the new committee. SEEDS faculty coordinators Prof. Ulpa Waingankar welcomed the guests, the faculty, the new and the outgoing SEEDS members, the students and everyone present on the occasion. She thanked the out-going members for their zeal, cooperation and enthusiasm in making SEEDS 2019-2020 a success.

Dr. Neena Panandikar in her address mentioned about IIC, Student satellite club, E-cell, the incubation centre and all the activities conducted in DBCE. Rev. Fr. Kinley D'Cruz congratulated the outgoing committee on a successful term and wished the new committee good luck. He also narrated a story about Alfred Nobel and quoted Charles Reade.

The Chief guest in his address congratulated the students for getting admission into engineering, also stating that this is the best time for being engineers with due reference to the New Educational Policy (NEP) in India in which it is said that this policy would help students to achieve great success in the 4<sup>th</sup> industrial revolution. He also advised the students to learn as many languages as possible, with at least one international language apart from English. He asked the students to get used to as many softwares as possible, take notes in class and make best use of digitalization by using Mooc platforms like NPTEL, Coursera etc.

The new Chairperson Mr. Leo Barros, read out the plans for SEEDS 2021 in which he mentioned about different competitions in different fields that would

be organized in the next few months with active participation from the students. The outgoing committee was awarded mementos and a letter of appreciation, by Rev. Fr. Kinley D'Cruz. The ceremony ended with a vote of thanks by Prof. Maya Lin Noronha followed by a brief photo-shoot. First year student Miss. Kritha Rajan anchored the whole program.

As all the students couldn't be present on 25<sup>th</sup> March due to the pandemic situation, the recording of the whole Induction program was presented to the students on-line via Google meet, the two links of which were shared.

Students were requested to send their videos/photos of the four competitions that were held, namely: 1) Poem writing- for which the students had to send a video of themselves reciting the poem, 2) Photography- for which a photo had to be sent along with a caption, 3) Poster making- wherein students had to make a video of themselves explaining their poster and 4) Essay writing- wherein students had to send a pdf of their essay. Videos of all 6 participants in poem and 3 in poster making and a combined power point presentation of all 7 participants in photography were presented virtually. Overall, it was a good competition to witness and the programme was a success.

## Departmental Café Session

The Department of Science and Humanities, had its ninth Departmental Café Sessions on the April 12, 2021. The resource person for the afternoon was Mr. Sanford Fritz Mascarenhas, Assistant Professor (Geology) of the Department of Science and Humanities. His session was on the topic 'Energy: Needs, Choices & Possibilities.

Mr. Sanford Mascarenhas introduced the topic by reminding the audience that for every activity that is carried out, energy is utilised. He mentioned that even when one commutes from place to place, energy derived from fossil fuels is used up. Sourcing his information from the U.S. Energy Information Administration, he showed different graphs that enlightened the audience on the amount of energy

consumed. He also mentioned that India ranked at the 7<sup>th</sup> position in total energy consumption in the year 2018. He further elaborated that fossil fuels like Oil, Natural Gas and Coal are consumed in the highest quantity for the fulfillment of all human needs. He referred the BP Statistical Review of World Energy 2020 which has calculated that coal might last only for another century and Natural gas and Oil will last for about 50 years only.

After displaying some eye opening graphs, he then went on to show the choices that are available for sustainable development and consumption. He said that even though the world may have the options of solar, hydro, wind, tidal, geothermal and biomass, the space or the methods of acquiring these to the fullest are not yet available. He offered that gas hydrates, polymetallic nodules and oil shales can also be possible options for sustainable energy consumption. He spoke in detail about each of these options and gave a geographical overview of places from where these energies can be harnessed. His session was followed by a healthy round of Q&A. This eloquent and informative session was attended by 12 members of faculty of the Department of Science and Humanities.

## TRAINING AND PLACEMENT

### Webinar on – 'Choosing Your Next University'

The Training and Placement Cell arranged a webinar on Choosing Your Next University for Second, Third & Final year students of all branches. The talk was organized on Saturday, February 27, 2021 on Google Meet.

The talk was delivered by Ms. Mohita Chowdhury an Electronics & Communication engineer graduate from NITK – Surathkal and Masters in Computer Science graduate from Oxford University. She is currently working as AI researcher at a healthcare startup in UK.

The speaker explained how to prepare for the exams and provided details of applying for GRE, TOEFL etc. She then explained about how to choose universities and apply for them. She compared various aspects

like research and jobs abroad, also details of various universities across different continents. The students posed many interesting questions which were answered in detail by the speaker. She encouraged students to do an extensive research about universities and list down few before appearing for GRE, TOEFL & IELTS exams. The webinar concluded by Dr. Shreyas Simu thanking the speaker for her valuable time and inputs.

## **Webinar on How to ace your Summer Internship with Internshala**

The Training and Placement Cell organized a webinar for students on 'How to ace your Summer Internship with Internshala'. The webinar was held on March 13, 2021 on Google meet. Students from second year, third year and also final year of all 4 branches attended the event.

The webinar was delivered by Dr. Shreyas Simu, Asst. TPO who was joined by Prof. Avila Naik, TPO. The webinar stressed on the importance of internships in student life, how one should grow their professional network and get job offers through internships, the process of getting an internship through Internshala. The speaker also spoke on how to get the most out of an internship.

Students posed a few questions and some of them who had got internships through Internshala shared their experiences. Prof. Avila Naik thanked Dr. Shreyas and the students for joining the webinar and having a good discussion.

## **Tangentia & PSL Recruits Talk**

The Training & Placement Cell organized a talk by recruits of Tangentia & PSL Company for the Electronics & Telecommunication students of DBCE who had applied to the said companies. Google meet webinar was held on March 13, 2021.

The first resource person for the talk was Mr. Saif Ahmed, ETC Batch 2020, who is currently working at Tangentia. He gave an insight to students on 3 different job openings in the company. He spoke about various software that one should be aware of

and making attempts to learn few of them. He also spoke about Automation Anywhere software and shared few links from where one can study about the same.

The second resource person was Mr. Dhirender Singh, Computers Batch 2020, who is currently working at Persistent Systems Limited (PSL). He shared his experience of answering the PSL test and interviews. He advised students to keep their resumes updated and simple. He spoke about focussing on basics of C/C++ and programming skills.

The third resource person was Mr. Yash Diniz, who is from Computers Batch 2021 and has been selected for PSL. He spoke about the coding test and how to prepare for it. He also mentioned that it will be tough for ETC students but with practice they can achieve their targets. He also mentioned to prepare for questions on databases and Java. The session ended by Dr. Shreyas Simu, Asst. TPO and Prof. Avila Naik, TPO thanking all the speakers for sharing their experiences.

## **Coditas Recruit Talk**

The Training & Placement Cell organized a talk by recruit of Coditas Company for the Electronics & Telecommunication(ETC) students of DBCE who had applied to the company. A google meet webinar was held on April 1, 2021.

The resource person for the talk was Mr. Sherwin Colaco, ETC Batch 2020, who is currently working at Coditas. He shared his experience of answering the Coditas test and interviews. He advised students to highlight their plus points when they talk about themselves and give instances that portray them of having leadership qualities and team playing abilities. He warned them of not adding something in resume that they are not well-versed with. He spoke about focussing on basics of C/C++ and object-oriented programming. He also stressed on the importance of the final year project in the telephonic interview.

The session ended by Dr. Shreyas Simu, Asst. TPO and Prof. Avila Naik, TPO thanking the speaker for sharing his experiences, knowledge and time for the event.

## Webinar on – 'The Extra Mile – A discussion with HR's'

The Training and Placement Cell organized a discussion with HR's called The Extra Mile students of all branches of the college. The talk was organized on Saturday, April 24, 2021 on Google Meet.

The panelist for the event were Ms. Cheri Bhengra, and Mr. Abhijitt Murugan. Cheri is an Electronics & Telecommunication graduate from Goa engineering College and management graduate from XLRI Jamshedpur. She joined the RPG group in 2015 and has worked on diverse projects for CEAT tyres and became the campus lead for RPG group. She is now a Senior Manager of talent management and LnOD. The second panelist for the event was Mr. Abhijitt Murugan. Abhijitt Murugan is part of the University Relations Team of L&T Technology Services. He joined LTTTS as a fresher and has been with the University Relations team since then. He has been running campus recruitment at LTTTS for premium T School and B school along with tier 2 institutes.

The proceedings of the event were as follows. In the first part, there was a 5-10 minute brief overview of the company recruitment process by HR. In the second part, the host asked questions to HR on their perspective on typical questions asked by them during HR interviews. In the third part the session was made open to students to ask questions.

The speakers explained the recruitment process of their respective companies. They answered all the questions posed by the host diligently and enthusiastically. Also, they cleared all the doubts presented by the students. The discussion was concluded by Dr. Shreyas Simu and Prof. Avila Naik by thanking the speakers for their valuable time and inputs.

## E-CELL (Entrepreneurship Cell)

### Webinar on Creating Customer Value

Entrepreneurship Cell of Don Bosco College of Engineering, Goa in association with Thomas J. Watson College of Engineering and Applied Science – Binghamton University organized a Webinar on

Creating Customer Value on Wednesday, March 31, 2021, via virtual platform Google Meet.

Prof. Michael Testani, Director of Industrial Outreach, Thomas J. Watson College of Engineering, and Applied Science presented an overview of Binghamton University. The speaker for the event Dr. Kenneth J. McLeod, Professor, Department of Systems Science and Industrial Engineering Director, Clinical Science and Engineering Research Lab was introduced by Ronan Mendes (ECell Student Member).

Dr. McLeod covered four main concepts - Customer Value, Fluency, Innovation, and Change as Opportunity. He gave several real-life examples while explaining the topic. He compared the market change over the years and requirements for a new company to succeed in the current scenario. In the Q&A session, ECell student members asked many questions regarding the topic.

At the end of the webinar, Director, Fr. Kinley D'Cruz and Principal, Dr. Neena Panandikar thanked Binghamton team for the session. The host, Mrs. Avila Naik, Training & Placement Officer thanked Dr. Kenneth J. McLeod for the wonderful session and interaction with everyone.

## IIC (Institute Innovation Council)

### Internal Idea/PoC Competition

Don Bosco College of Engineering, Fatorda- Goa is one of the institutes that has been selected for establishing MHRD – Institute Innovation Council (IIC). Ministry of Human Resource Development (MHRD), Govt. of India has established MHRD's Innovation Cell (MIC) (<https://www.mic.gov.in/>) to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs) pan India. The primary mandate of MIC is to encourage, inspire and nurture young students by



supporting them to work with new ideas while they are in formative years

An Internal Idea/PoC (Proof of Concept) competition was held on February, 8 2021, in online mode to invite ideas from young minds. Two eminent jury members – Mr. Venugopal TR, Corporate Relations Manager at Forum for Innovation Incubation Research & Entrepreneurship (FiiRE) and Prof Flavia Leitao, Assistant Professor ETC Department, Don Bosco College of Engineering, were invited to judge the event. This event helped validate a product/business idea for potential. The teams that would be shortlisted in this competition would qualify for the next level as would be specified by MIC.

Prof. Swapnil Ramani, host and co-ordinator of the event welcomed the judges and introduced the teams. A total of 100 plus students attended the meet and the participating teams presented fabulous ideas that addressed various issues faced by certain class of individuals/community. Solutions that were presented varied from- 'How could small time and amateur chefs reach out to the huge markets' to 'How citizens of our country could voice out and raise concerns about issues that go against the laws of our constitution'. Students of first year engineering, demonstrated high ideation and professional-presentation skills, with great innovative solutions to problems, that left the judges impressed.

The finalists of the competition were Team Hexacore and Solutionism at its finest, followed by team Fabulous Five and SATRN Squad.

In conclusion, the event was a great success leaving all students motivated and giving them a reason to explore the world of Innovation and Entrepreneurship.

### **Webinar organized by IIC titled 'Business Model and Canvas (BMC)': Mr Venugopal TR**

Institution innovation council (IIC) of Don Bosco College of Engineering organized a one-day webinar on March 01, 2021, titled 'Business Model and Canvas (BMC)' in association with FiiRE (Forum for Innovation Incubation Research &

Entrepreneurship). It was well-received by more than 100 participants of various colleges. Prof. Suraj Marathe started the session with a warm welcome to all the attendees, he introduced the DBCE IIC, and gave an overview of its function & activities. He then introduced the guest speaker, Mr. Venugopal TR, Incubation Manager - FiiRE.

The session was quite interactive. He started the session by stating the nine-block business model – Customer Segments, Value proposition, Channels, Customer relationship, Revenue Streams, Key Resources, Partners and Cost Structure. BMC is a strategic tool that helps to achieve business goals in a systematic approach. Mr. Venugopal explained the functions and tools used in each block with practical examples. He also enlightened the attendees on the opportunities and challenges that the BMC model has created. He further encouraged all to follow their dreams of building their own start-ups with a systematic approach.

The session ended with a Q&A session, allowing the participants to clarify their doubts about the BMC model. Student coordinator Ms Benecia Colaço proposed the vote of thanks.

### **Webinar titled “Design Thinking and Innovation” by Innovation Ambassador Prof. Satyesh Kakodkar**

A talk on “Design Thinking and Innovation” was delivered by Mr. Satyesh Kakodkar, Assistant Professor in Civil Engineering Department and Innovation Ambassador, MoE –IIC (Ministry of Education – Institution Innovation Cell) on March 6, 2021.

In his presentation Mr. Satyesh Kakodkar, elaborated the definition of design thinking and explained the different phases of design thinking. Mr Kakodkar, explained how design thinking helps to upgrade living standards. While explaining the different phases of design thinking, Mr. Kakodkar spoke about the methods used in each phase and how best the methods can be adopted.

Citing different examples, he explained the role of each phase in design thinking and its link to innovation. He also spoke about the importance of

mind mapping and empathy map in fuelling the process of innovation. The webinar was well received by about 160 participants. Dr. Vivek Jog, Assistant Professor in Computer Engineering coordinated the event.

## 'How to plan for Start-up and Legal Ethical Steps'

The Institution Innovation Council of Don Bosco College of Engineering in association with FiiRE hosted a webinar on 'How to plan for Start-up and Legal Ethical Steps' on March 16 2021 . The Speaker for the day was Ms. Prasanna Timble, who is the founder and managing attorney of a well renowned consultancy company- 'LEGAWISE'.

Ms. Timble spoke about the various main business structures composing of proprietorship, partnership, Limited Liability Partnership (LLP), One Person Company (OPC). She briefed the audience about the concept of a company and also explained about the various key factors such as taxation, liability and risk, management, continuity, transferability, expense and formality to form a business providing the students with a broad knowledge on starting a business.

In addition to this, key information about the various licenses, registrations and legal documents needed to register a newly opened business were provided in this webinar.

Lastly, the different kinds of intellectual properties such as patents, industrial designs, trade secrets and many others were explained thoroughly.

The webinar was very informative and appreciated by the audience. The faculty coordinator for the webinar was Mrs. Michelle Araujo e Viegas. The students coordinator was Ms. Valini D'Silva

## Mentorship Session for Innovators/student Entrepreneurs

The Institution's Innovation Council of Don Bosco College of Engineering in association with FiiRE (Forum for Innovation Incubation Research & Entrepreneurship) and E-cell (Entrepreneurship cell), conducted a talk on Mentorship session for Innovators and Student entrepreneurs on March 22,

2021 via google meet from 4pm to 5pm. The students from all four engineering branches (ETC, Civil, Mechanical and Computers) attended the event.

The talk delivered by Mr. Ashley Alexsius D'souza, founder of Hexcoderz- A user experience design agency, was interactive and interesting and had all students participating actively during the session.

Mr. Ashley D'souza stressed on the importance of entrepreneurship, web design and development startup ideas, kensho rule & a few start up ideas. At the end of the session, he encouraged the students to ask questions which he answered elaborately.

The event was coordinated by Ms. Kimberly Morais & Mrs. Natasha D'Souza e Jaques and Student Coordinator Vadiraj Inamdar.

Student coordinator – Vadiraj Inamdar thanked Mr. Ashley D'souza and students for joining the meet and having a good discussion.

## RESEARCH AND DEVELOPMENT

### “Mobile Phone Photography and Editing”

The Department of Electronics and Telecommunication organized its monthly Knowledge Sharing Session, under the R&D cell on February 17, 2021. The Knowledge Sharing Session initiative involves activities whose main motive is to update Faculty members with the latest trends in Technology and Research and to learn something beyond academics.

The session was taken up by Mr. Roland Gomes on “ Mobile Phone Photography and Editing”.

Mr. Roland Gomes started the session by introducing different types of cameras which are mainly classified based on the sensor size and viewfinder mechanism. He then explained the advantages of using mobile phone for photography



which includes Portability, ease in shooting and uploading on social media, simplicity and affordability.

Mr. Gomes later explained in detail with the help of examples the different compositions or rules followed during Photography which includes Rule of Third, Balance, Top view, Bottom view, Leading lines/patterns/symmetry, Perspective and Foreground/background.

Lastly, he spoke on Lights & Shadows and explained the different aspects to keep in mind before taking a picture.

At the end, a hands-on session using the Mobile photo editing app “The ADOBE LIGHTROOM”, was explored. Different features of the app and how it can be used to edit pictures was also discussed.

The event was encouraged by R&D Chair Dr. Varsha Turkar and coordinated by Prof. Flavia Leitao. The session was indeed an interesting one and was enjoyed by all faculty members and received good feedback from the audience.

### **“Paper Review: Communication Skills for workplace success”**

The R & D Cell (Research & Development Cell) had the activity on 'Communication Skills at Workplace' March 2, 2021. The resource person was Prof. Avila Naik, Training & Placement Officer & Assistant Professor, Department of Science & Humanities.

In her session, Prof. Avila Naik reviewed the research paper by Dr. Radhika Kapur where she emphasized the need to listen with ears, eyes, heart and mind. In the non-verbal communication the importance of body language, eye contact, the tone of the voice and gestures was highlighted. The following points were elaborated for effective communication: Clarity and Conciseness, Friendliness, Confidence, Empathy, Open-mindedness, Respect, Feedback, Stronger Organizational culture, Reinforcement in employee participation, Formation of amiable working environment.

She concluded by saying, “it is a challenge everybody deals with to put into practise the correct way of

communicating and we have to keep reminding ourselves the importance of effective communication.”.

### **“Rough Sets and Fuzzy\_Sets”**

The Department of Computer Engineering organized its monthly Knowledge Sharing Session, under the R&D cell on March 6, 2021. The Knowledge Sharing Session initiative involves activities whose main motive is to update Faculty members with the latest trends in Technology and Research and to learn something beyond academics.

The session was taken up by Prof. Amrita Naik on “Rough Sets” and Prof. Janhavi Naik on “Fuzzy Sets” through the Google Meet platform.

Prof. Amrita Naik started the session by introducing the concept of Rough Sets in feature reduction. She then explained the terminologies such as indiscernibility, upper and lower approximation. She also explained each concept with the help of examples. She demonstrated the concepts like reducts and core which are helpful in reducing the dimensionality of features. She also explained the application of Rough sets in Data Mining and Research.

Prof. Janhavi Naik later explained about fuzzy sets. She gave an introduction to fuzzy sets and its applications. She also spoke about the comparison on Fuzzy sets and crisps sets. Different examples were given to make the topic easy to understand and compare different sets. The membership functions and characteristics were explained.

The event was coordinated by Dr. Vivek Jog. The session was very interesting and was enjoyed by all faculty members and received good feedback from the audience.

### **‘Challenges in Lateritic Soil’ & ‘Application of Optimization Techniques’**

The Civil Engineering department had its fourth session under R&D cell on March 6, 2021. There were two speakers for this session.

Prof. Jeffrey Valadares presented a research paper while Prof. B.R. Anirudha presented on a recent trend.

Prof. Jeffrey presented his paper titled 'Challenges in Lateritic Soil'. He explained how Laterite, which is the most common soil available in Goa, could have a strength varying from 5 Mt/m<sup>2</sup> to 35 Mt/m<sup>2</sup>. The various geological processes that have caused the parent rock to weather with time led to different challenges in soil.

Cavities, voids and slip circle may cause failure of the supported structure. The understanding of the parent rock and the weathered process and knowing the soil profile below is an important subject that needs attention.

In his paper, he has presented about different geological formations in Goa and the different lateritic formations and the challenges faced with these formations in the laterization process.

Prof. Anirudha presented on 'Application of Optimization Techniques'. He highlighted on the use of optimization techniques in civil and structural engineering problems. Specifically, a case of particle swarm optimization for minimum cost and minimum weight on a simple framed structure was illustrated.

### **Talk on Research Methodology**

The R & D Cell (Department of Science & Humanities) conducted a talk titled 'Research Methodology' on March 19, 2021. The talk was delivered by Prof. Jyoti Lewis, Assistant Professor in Communication skills.

In her session, Prof. Jyoti Lewis spoke about the Research Methodology, the methods one would employ, analysis of documents and critical analysis of the findings. She emphasized that Research methods are part of methodology and also spoke about the fact that the research process involves the series of actions/steps necessary to effectively carry out research. She concluded by giving an example of the dissertation paper she presented during her M-Phil.

The session was well received by the staff at Don Bosco College of Engineering-Fatorda-Goa.

### **“Recent trends in Formal Verification” & “High Speed SRAMs and Recent Trends”**

The Department of Electronics and Telecommunication organized its monthly Knowledge Sharing Session, under the R&D cell on March 25, 2021. The Knowledge Sharing Session initiative involves two activities namely a Technical Paper presentation and some recent trends whose main motive was to update Faculty members with the latest trends in Technology and Research.

The first session was taken up by Prof. D.S Vidhya and the second session by Dr. Shreyas Simu.

Prof. D.S Vidhya presented a technical talk titled “Recent trends in Formal Verification”. Verification through traditional simulation applies a large number of input vectors to the design and then compares the resulting output vectors with actual vectors for functional correctness. Regressive testing with traditional simulation tools becomes bottleneck in the design flow, so formal verification is an alternative to traditional simulation. The demand for formal verification in the SoC designs in the context of hardware is high because of its cost and accuracy. The talk concluded that the outcomes of the verification techniques suggests that DFNN based technique improves the training accuracy and optimizes the hardware resources like area, power than the FFNN based technique.

Dr. Shreyas Simu presented a technical talk titled “High Speed SRAMs and Recent Trends” He begin by explaining the difference between SRAM and DRAM and explained in detail the SRAM 6T bitcell structure and its working, the read operation and write operation. He also spoke about CMOS, BiCMOS and SOI technology, FDSOI and PDSOI technology and comparison between them. He then presented the results of BiCMOS decoder, inverter and compared the existing systems with design of my BiCMOS Inverter. Future trends in FinFETs with 7nm technology were also discussed.

The event was encouraged by R&D Chair Dr. Varsha Turkar and coordinated by Prof. Flavia Leitao. Both the sessions were knowledgeable & received good

feedback from the audience.

## Session on 'Buying a Car - The smart way'

The Department of Mechanical Engineering held its monthly Knowledge Sharing Session, under the R&D cell on March 27, 2021 from 3.30 pm to 4.30 pm. The first session was delivered by Mr. Joyston Menezes while the second was taken by Mr. Diptesh Naik on Recent Trends.

Mr. Joyston Menezes presented a technical talk titled 'Buying a Car - The smart way'. The session highlighted all the important aspects to be considered while purchasing a new car. Several factors like brand, maintenance cost, resale value, expert/customer reviews, driver and passenger safety, convenience features that influence a potential customer towards selecting a car were highlighted by the speaker. Various aspects of the deal were also covered from the irrelevant add-ons, extra benefits that are on offer, insurance premium, warranty and selecting the right dealer. Certain critical aspects like availability, delivery, vehicle identification number, all relevant documentation and pre-delivery inspection were also addressed.

Mr. Diptesh Naik presented a technical talk titled 'Basics of Car Maintenance'. Mr. Diptesh presented some basic tips on the regular maintenance of cars to improve their performance and reliability and also minimizing expenses resulting from emergency repairs. He covered the maintenance of cars concerning engine oil, coolant, brake and clutch fluid, batteries, electrical wiring, wheel and tyre care, body and paint care etc. He also gave some general tips to improve the performance of car utilities and concluded the session with some insight into important warning lights and the required measures to be undertaken.

The speakers were highly motivated in presenting and sharing their experience and were appreciated by all the attendees. The session was attended by teaching and technical support staff from the Department of Mechanical Engineering and coordinated by Prof. Mayur Shetti.

## Talk on A study of Software Reliability

The R & D Cell (Department of Science & Humanities) had a session on 'A study on Software Reliability' on April 17, 2021 delivered by Mrs. Vaishali Parakhi (Assistant Professor, Mathematics)

In her session, Mrs. Vaishali Parakhi began her lecture with the definition of reliability, and explained how when wear out of the product increases the reliability decreases, which was illustrated by the bathtub curve for hardware as well as software reliability. She also touched upon the component configurations in software reliability and highlighted the differences between Hardware reliability and Software reliability. She further discussed the different types of software reliability models and their characteristics. Finally, she explained that the first widely used and well known model in software reliability was by Jelinski and Moranda.

The session was well received by the audience.

## 'Alkali Activated Slag mortar' & 'Hydroponics'

The Civil Engineering department had its fifth session under R&D cell on the April 17, 2021. There were two speakers for the session.

Prof. Oswyn Soares presented on 'Alkali Activated Slag mortar'. He explained the concept of molarity and how to make alkali solution, He also presented about activation of slag using an alkali activator. He stressed on replacement of cementitious material by Ground Granulated Blast furnace Slag (GGBS) and replacement of sand by course slag.

Prof. Starina Dias presented on 'Hydroponics'. She highlighted on the use of 'Hydroponics' as an alternative to address issues of environmental degradation and the growing demand for food production. She explained the six types of 'Hydroponics' system that include wick system, deep water culture system, drip irrigation system, etc. She also presented the benefits of the system and its usage in various environments.

## FiiRE (Forum for Innovation Incubation Research and Entrepreneurship)

### TEDP in IoT

**Date:** 8<sup>th</sup> February 2021 to 27<sup>th</sup> March 2021

**No. of participants:** 25

**Session Details:** Introduction to Entrepreneurship, Experience sharing with an Entrepreneur, Entrepreneurial Competencies, Soft Skill Development: Communication and Information Seeking, Experience sharing by successful Entrepreneur, Business opportunity Guidance, Introduction to Market survey, Briefing and Planning for the Market Survey, Conducting Market Survey and Data Collection for the Identified Business Opportunity, Feedback, Discussion on Market Survey and Evaluating PPRS, Developing Entrepreneurial Ability [Achievement Motivation], Business Opportunity Guidance, Pre-feasibility study of a Project, Preparing Preliminary Project Report, Introduction to Embedded Systems 1) Device Selection for IoT 2) Introduction to Arduino platform 3) Programming Concepts 4) Arduino Programming 5) Digital Output, Digital Inputs 1) Programs on Digital I/O 2) Concept of ADC 3) Analog Inputs 4) Programs on Analog Inputs Concept of PWM 5) Labs on PWM 6) UART Serial Communication 7) Labs on Serial 8) OLED Display Labs, Introduction to IoT, IoT Architecture and Components, IoT Applications, IoT Cloud: Thingspeak, Data uploading and downloading using Thingspeak, Data Visualization, WiFi communication, WiFi device: ESP8266, Arduino program for ESP8266, Sensor data uploading on Thing speak through Arduino and ESP, Marketing



Management: Product Promotion, Sales and Advertisement, Digital Marketing, Financial Management: Accounting & Costing, Product Costing and Cost Consciousness, Working Capital Assessment & Management in SSI, Break Even Point, Taxation and various taxes applicable to MSME, Legal Formalities in an Enterprise [Factory Act, EPF, Pre-Feasibility Report, Detailed Project Report, Case Study, Counseling, Schemes of Assistance for MSMEs: Financial Agencies / Institutions, Schemes of Assistance for MSMEs: NSIC, SIDBI, DIC and Other Support Agencies, Legal Formalities of Loan Disbursement Interfacing with Institutions for Business Plan, Human Resource Management, Pattern, Copy Rights, Trade Mark and Industrial Management, Negotiation and Networking, Delegation of Authority and Work Effort, Feedback and Evaluation of the Programme, Action Plan Preparation

**Objectives:** a] To impart Entrepreneurial imputes along with technical sessions on IOT to create a pool of enterprises in the related field.

b] To provide hand holding support to participants for their projects.

**Expected Outcome:** a] Generation of IOT based Projects./Ideas

b] Hand holding support to aspiring entrepreneurs to execute their project ideas.

### VHack AGRITHON

Forum for Innovation Incubation Research and Entrepreneurship (FiiRE) organised its flagship VHack hackathon. The VHack Agrithon was held on March 23, 24, 25, 2021 with the aim of creating an efficient supply chain for agri based products so as to reduce wastage due to longer delivery cycles and to create cost efficient methods of sourcing, packaging, storing and delivering products. The Agrithon also aimed to equip the end consumer with a tool/technique to verify the authenticity of organic products. Those interested in being a part of the agri growth story which included producers/suppliers/distributors/entrepreneurs/ students and others were invited to apply.

On the first day of the Agrithon (23<sup>rd</sup> March, 2021), the participants were introduced to the Business Model



Canvas (BMC). They then made a short presentation about their idea/solution for the Agrithon.

The second day (24<sup>th</sup> March, 2021) started with the participants working on their BMC. FiiRE mentor Mr. Moorley Dharan and Mr. Manish Gosalia mentored the participants. Dr. (Ms.) Mathala Juliet Gupta (ICAR) was invited to interact with the participants and provide feedback/suggestions to them.

The participants then presented their BMC to a panel consisting of Mrs. Pranita Kotasthane, Dr. Neena Panandiker and Mr. Moorley Dharan who judged the merit of the idea and gave valuable feedback.

The final day of the Agrithon (25<sup>th</sup> March, 2021) saw the participants presenting their idea to Mr. Robert Lobo (Investor). Mr. Lobo advised the participants on how to focus on the value proposition and build entry barriers so that the business cannot be easily replicated.

The participants were also invited to have one-one mentoring sessions which would enable them to



build more effective business models and chart out action plans to achieve objectives.

**Some of the participants gave their testimonials as follows:**

“I sincerely appreciate your help and guidance from all FiiRE team for giving me an opportunity to participate in Agrithon. It's a really wonderful session with all mentors giving valuable tips and honest feedback that one cannot get anywhere. Inputs are really valuable for refining ideas.”

**– Prasad Lotlikar**

“Overall good co-ordination with staff and mentors helped. Got right information to set up the business.”

**-Arun Malik**

“You are a great team indeed. I like the way you spoon feed and take extra efforts in everything and smallest of details. Looking forward to lots many meetings and exchanges.”

**-Sulimark**



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