ANNUAL REPORT 2020

Design Workshop Series

A design workshop series was organized by IEEE Student Branch, College of Engineering Karunagappally in association with Women in Engineering Affinity group in the month of January 2020. The basics in designing using Canva, Adobe Photoshop and Adobe Illustrator was taught to upskill the students. Students from different departments attended the workshops held at the computer programming lab in administrative block.

Poster Designing Workshop

A poster designing hands-on workshop using Canva was organized on 24th of January 2019 in the computer programming lab (A block) from 4:30 pm to 5:30 pm. The workshop was handled by Mr. Hari Prasad (PES SBC Chair). Details on creating a Canva account, accessing templates, usages of different tools, creating unique design and publishing the poster were discussed in the workshop. The students were also made to create their own posters on random topics. It was then evaluated and suggestions were given. A total of 25 students attended the workshop.





Photoshop Workshop

A workshop on Photoshop was held on 28th January 2020 in the computer programming lab (A block) from 4:30 pm to 5:30 pm. The workshop was handled by Mr. Hari Prasad (PES SBC Chair). A widely used critical tool for designers, web developers, graphic artists, photographers, and creative professionals, Adobe Photoshop workshop was aimed to introduce this software application to the students interested in editing and image manipulation. This interactive hands-on workshop was a new experience for the students. By the end of the session, they were familiar with the tools and its functions in Adobe Photoshop. 23 students attended the workshop.





UX/UI Designing Workshop

A continuation of the Design workshop series, a UX/UI design workshop was organized by IEEE Student Branch, College of Engineering Karunagappally on 31st January 2020 in the computer programming lab (A block). The workshop was handled by Mr. Hari Prasad (PES SBC Chair) from 4:30 pm to 5:30 pm. A general idea on user interface designs and user experience designs, benefits of Adobe Illustrator over Adobe Photoshop and the commonly used tools in Adobe Illustrator were discussed in the session. Concepts of creating a visually stimulating graphical layout that a user can comfortably interact was explored in the workshop. Advanced application of tools, editing and basics of vector drawing were also discussed. A total of 28 students attended the workshop.



Tech Eve 3.0

IEEE Student Branch College of Engineering Karunagappally takes sheer pride in conducting little talks and workshop sessions for the blooming youngsters to involve them into the embedded system of society's needs and how technology emerges to renovate it. Tech Eve, earlier known as the PES (CRP), is a series of programs that is organized as evening sessions to support the students in learning new skills and know about upcoming technologies and their uses in the industry. A series of talks were also included as a part of enriching the student's knowledge on new technologies and its benefits. The goal is to provide an insight on different technologies used in the industry today to students and encourage them to learn those skills.

Robotic Process Automation

The first topic to be unraveled was Robotic Process Automation taken up by Mr. Akshay Krishnan, Chair, IEEE SBC CEK on 17th January,2020 after the working hours. He introduced the concept of software robotics and how Artificial Intelligence superimposes with the concepts of various scripting languages. Around 46 students, comprising all semesters and departments actively imbibed each and every bit of information. The exposure to certain tools and interface raised in them a sense of curiosity to work on such platforms and explore more.

Fusion 360

Fusion 360 was yet another technical wand that was introduced to the students on February 7th, 2020. The hand on workshop was taken up by Mr. Cliffin Cletus, Vice Chair, IEEE NPSS/PELS Jt. Chapter where he emphasized the wonders one can implement using the design tools efficiently. In accordance with general IEEE meetups, the students had mentioned their urge to learn more about designing, and their needs were quite successfully fulfilled as they expressed their exuberance on designing creative 3-D structures with their desired configurations. Even though the workshop only lasted for an hour, the students seemed extremely enlightened with various tools and techniques.

Artificial Intelligence

Jayaraj N R, Chair, IEEE IAS SBC CEK handled a talk session on Artificial Intelligence on 13th February 2020 where he laid light on how various branches of engineering comes together to form a machine that avails human intelligence. All is one of the most sought platforms that offers a stage for innovation and creativity. The students keenly noted down all the colossal developments and advancements and were given an opportunity to interact with the mentor to know more on how they can get started on small projects to enrich their brains with more detailing needed to the competitive world.

Electric Vehicles

An illuminating session on Electric Vehicles was taken up by IEEE SB CEK PES Chair, Mr. Hari Prasad on 19th February 2020 where he communicated on the universal demand for electric vehicles. A lot of the students were unknown to how huge an advancement it was in the field of technology. The abstract ideologies of sustainability and focus on utilizing maximum renewable energy was beaming throughout the whole lecture. The students probed deeper into the numerous opportunities on gets in the practical industries based on such concepts and how pivotal it is to be able to improvise such amazing developments.

Blockchain

Blockchain is undoubtedly one of the most fuming networks in the fast-paced rise of technology. A brief overview was portrayed out to the students through an online platform by Mr. Arun Sreenivas, Chair, IEEE CS SBC CEK, on 16th of March 2020 where he introduced how a simple idea turned out be an evolution of a complex and highly demanded network of record tracking and transaction. He unwound the layers of basic terms such as cryptography and various methods to encrypt and decrypt the information using hashing. The students were absolutely mesmerized by the idea of how technology is able to secure important files and information as they burst through with a bunch of their queries, evidently being interested in pursuing their skills.

Grid-Scale Battery Storage System

Akhil Ahmed, Chair, IEEE NPSS/PELS Jt. Chapter volunteered himself to interact with the students in a webinar on Grid-Scale battery storage system, hosted on 21° March 2020. He randomly interacted with the attendees to know much they already knew about it and to the surprise a lot of them did have an idea which made the others even more dedicated to furnish their edge of knowledge. The need and challenges to install an electric system on a large scale was enlisted and how the realm of various renewable energy systems helped to overcome such issues. Numerous storage techniques such as Pumped-storage hydroelectricity, Electric battery, Flow battery, Flywheel energy storage were explained along with the peak necessity of such skills in the real world industries. The fascinated students planned amongst themselves to create a presentation themselves on the topic to be able to research more.

Application of Drones

From photography to law enforcement, from shipping and delivery to disaster management, drones conquer the applications all around. To offer a deeper revelation, Mr. Akash R, Vice Chair, IEEE IAS SBC CEK instructed the attendees about the numerous applications of drones. Held on 26th March 2020, this was one of the most awaited talk session. The students were infused with a sense of capability to build a drone of their own. The idea of creating a device of their own to get an access to deep locations was quite thrilling to them. The overall application of drones gave the students a spirit to be more creative and strategic.





Machine Learning

All of the major players in the tech industry are pushing the boundaries of self-determining computers, especially with cutting-edge technologies like artificial intelligence and machine learning becoming more mainstream. IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society organized a workshop on Machine Learning on 25th February 2020, in the computer programming lab (A block) from 4:30PM to 6:00 PM. The workshop was handled by Mr. Akshay Krishnan, Chair, IEEE SB CEK, with students from different semesters and departments actively attending the workshop. With its current applications in self-driving cars, practical speech recognition, effective web search, and a vastly improved understanding of the human genome, the potential of machine learning stays fascinating. He introduced effective machine learning techniques to gain practice implementing them and getting it work for the students. By the end of the session, they were familiar with not only the theoretical underpinnings of learning, but also the practical know-how needed to quickly and powerfully apply these techniques to new problems.



Deep Learning

A workshop on deep learning was hosted by IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society on 28th February 2020. The workshop was handled by Mr. Akshay Krishnan, Chair, IEEE SB CEK in the central computing lab (A block) from 4:30PM to 6:00 PM. One of the most interesting concepts in computing technologies, this artificial intelligence function is profoundly looked upon because of its particular type of learning that has the potential to be extremely useful for real world applications. In this session, he talked about data processing, creating patterns for use in desion making and learning from both unstructured and unlabeled data. With 38 students from different semesters and departments, this workshop unveiled its possibilities one can explore under deep learning and artificial intelligence.



LUXATHON 2.0

A 24-hour national level illumination hackathon, organized by IEEE Student Branch College of Engineering Karunagappally (IEEE SB CEK), Luxathon 1.0 was an innovative idea in the field of illumination technology, appreciated by the IEEE PES Headquarters and featured in the IEEE PES enews. This IEEE PES funded Member Driven Initiative (MDI) was awarded the 2019 IEEE MGA Darrel Chong Award under gold category. With participants from all over the country, it was first of its kind in the Asia-Pacific Region. It was also awarded the 2019 PES Special Award and The Most Innovative Event Award by the IEEE PES Kerala Chapter.

IEEE Student Branch College of Engineering Karunagappally (IEEE SB CEK), the 2018 and 2019 Regional Exemplary Student Branch Award recipient, in association with the Power and Energy Society Student Branch Chapter, organized the second version of India's first 24-hours national level electrical illumination hackathon, **Luxathon 2.0**, on the 6°, 7° and 8° of March 2020. One of the most vibrant chapters of the student branch, the power and energy society consistently plays a magnificent role in fostering quality initiatives in the student branch. Being their flagship event, Luxathon 2.0 was no exception. Transcending all perceptions on hackathons, this illumination hackathon sculptured a sense of innovation that can be a stimulus to the current and emerging needs of the technology in the students. It was able to entrench the reputation of Luxathon 1.0, the 2019 IEEE MGA Darrel Chong Award winner (gold category), in the student community. A total of 12 teams from different parts of the country including Hyderabad Section, Bombay Section, Madras Section, UP Section and Gujarat Section participated in the hackathon.

Microcontrollers Workshop

One of the most inevitable topics in electronics, microcontrollers are what that controls the functioning of embedded systems. A workshop on Microcontrollers was organized for the students on 6° of march, handled by Er. Anish M S (YP, IEEE PES Kerala Chapter). He discussed the on the difference between a microcontroller and microprocessor, Arduino, Relay and commonly used sensors. This workshop was aimed to equip the students to use electronic components like Arduino, relays and sensors in their work to effectively set up a project.





Electrical System Design Workshop

Designing of electrical system plays a major role in any electrical project. A workshop on electrical system designing was organized for the participants on 6th March 2020. The workshop was handled by Er. Saran K S (YP, IEEE PES Kerala Chapter). This was intended to furnish the students to design and develop safe and reliable electrical systems. Designing and working of simple electrical circuits like rectifier circuits, voltage regulator circuits and inverter circuits were also discussed in the session. These topics were highly beneficial in designing their system for the hackathon.





Workshop on Machine Learning

One of the most relevant field of computational science, a workshop on Machine Learning was taken by Mr. Akshay Krishnan (Chair, IEEE SB CEK) on 6th March 2020. The workshop covered topics regarding data collection and analysis that helps in automation of their projects. One of the main features of the hackathon was that the students had to develop an illumination system that is the most efficient, satisfying all the given conditions. Applying the concepts of machine learning hence plays a major role in enhancing the efficiency. The students therefore found this workshop highly beneficial.





Workshop on Illumination System Designing

The core factor that makes Luxathon unique is the relevance of illumination in this electrical hackathon, apart from what we usually experience. A workshop on illumination system designing was therefore organized for all the participants on March 6th 2020. The workshop was handled by Mr. Hari Prasad (Chair, IEEE PES SBC CEK). He introduced DIALux, a leading light designing software to the students. He also discussed its different functions like measurement of lux, to design, calculate and visualize lighting in a given area. This considerably helped them to plan an efficient and aesthetically appealing design for their lighting system.





Hackathon

The 24-hour National Level illumination hackathon, Luxathon 2.0, organized by IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society commenced on 7th of March 2020. With 12 student teams from different parts of the country, this hackathon was held to bring in innovation in the field of illumination technology. The core objective of this initiative was to stimulate technical interests in the student community to elevate their developmental and research expertise.

The hackathon began exactly at 11:30 AM. All the 12 teams were accommodated in 3 rooms and a set of guidelines were given to each team. The entire hackathon was divided into 7 stages. Each stage demonstrated individual electrical, electronic and computing challenges, and by the end of the 7th stage they could complete the entire illumination system. As each stage was advanced, the challenge got more complicated. All internet connections and other resources were withdrawn and the teams had to depend solely on their knowledge and other technical skills to complete each stages. The day was flushed with vibrancy, zest and exuberance as they explored each levels.

The hackathon came to an end by 11:30 AM on 8th March 2020. An expert panel of judges including Prof. Deepa A K, Prof. Haseena P Y, Prof. Sabeena K and Prof. Radhika, Mr. Anandhu S Kumar (Sr. Light Design Engineer at Wipro Lighting, IEEE YP), Ms. Staji Wilson (Assoc. Engineer at Tata Consultancy Services, YP), Mr. Anish M S (IEEE YP) and Mr. Saran K S (IEEE YP) then evaluated each team. The closing ceremony of Luxathon 2020 began by 2:00 pm. Each of the judges then illustrated the evaluation criteria and gave suggestion for the teams. It was then time for the prize distribution ceremony. The title winner of Luxathon 2.0 was team Govt. Model Engineering College, Thrikakkara (IEEE Kerala Section). The team members, Tharik Anwar, M Hridya, Maria Teres Victor, Sahla V H and M R Lakshmi Priya won a cash prize of Rs.12000. The second prize worth Rs.5000 was won by team Amal Jyothi College of Engineering, Kottayam (IEEE, Kerala Secton) with team members Richu Bini, Reno S Kurisinkal, Robin Roy, Jerom Reji and Rahul Gopi. The third prize worth Rs.3000 was won by team Sree Chitra Thirunal College of Engineering, Trivandrum (IEEE Kerala Section) with team members, Govind S Nath, Nandakishore P, Athul Jayakumar and Akhil Manikandan. A note of gratitude to all the attendees was delivered by Mr. Hari Prasad, Chair of PES Student Branch Chapter, College of Engineering Karunagappally.





Young Professionals Interaction Session

IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society organized a YP Interaction session on 8th of March 2020 as a part of Luxathon 2.0. A session on

IEEE photonics Society was handled by Mr. Anandhu S Kumar (Sr. Light Design Engineer at Wipro Lighting, IEEE YP). He spoke about the possibilities of Photonics society, its ubiquitous relevance in the field of quantum physics and the professional growth opportunities of its members. Then, another session on Women in Photonics was taken by Ms. Staji Wilson (Assoc. Engineer at Tata Consultancy Services, IEEE YP). The session focused on the importance of active participation of women in the field of photonics and optics, its opportunities and how they can contribute in diversifying the perspectives building the technology and information of tomorrow. This provided a platform where students can interact with professional to perceive the benefits and roles of IEEE in their future professional lives.





IEEE PES Day

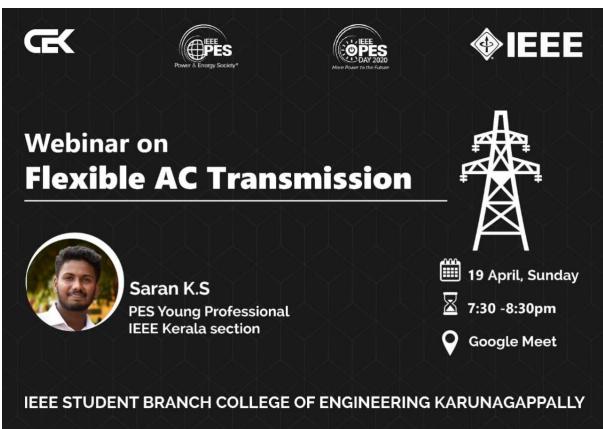
Hari Prasad
IEEE PES DAY Kerala Section Ambassador

Akshay Krishnan
IEEE PES DAY Student Branch Ambassador

Akhil Ahammed
IEEE PES DAY PES Chapter Ambassador

Riya Elizabeth
IEEE PES DAY Women in Power Ambassador

Webinar on FACTS



IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society Student Branch Chapter organized a webinar on Flexible Alternating Current Transmission Systems (FACTS) on 19th April 2020 as a part of the 2020 PES Day initiatives. Handled by Er. Saran K S (Young Professional, IEEE PES Kerala Section), this online educational initiative was aimed to introduce this Power Electronics based system to the students and on

how they are used to enhance controllability and increase power transfer capability of networks.

This internet based educational initiative has opened an access to information to the student community through real-time online web seminars. This ensured that free classes are delivered to students to advance their knowledge in this time of lockdown. The different devices used in FACT systems, its compensating circuit and the further research potential under this field was also discussed in this online seminar. With over 92 participants, the webinar had attendees from different sections including students and professors as well.

Industrial Lighting Design using DIALux

A yet another initiative of the 2020 IEEE PES Day, a webinar on Industrial Lighting design using DIALux was organized by IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society on 9th May 2020. The webinar was taken by Er. Anandhu S Kumar (Sr. Executive at Wipro Lighting, IEEE PES Kerala Section Young Professional) from 7:30 pm to 8:30 pm (IST).

One of the most commonly used software to plan, calculate and visualize lighting for indoor and outdoor areas, DIALux is popular among enthusiasts in illumination technology and light designing. The webinar was focused to acquaint this software with the students with an emphasis on its different industrial applications. Everything from beginning a new project, analyzing the different environmental and physical constraints and manipulating the different features to create an efficient design was discussed in this online seminar. Including students and professional, the online seminar had over 77 participants from different departments.











IEEE STUDENT BRANCH | COLLEGE OF ENGINEERING KARUNAGAPPALLY

EdiZone 20



IEEE Student Branch College of Engineering Karunagappally in association with the Power and Energy Society organized a 3-day IEEE PES Day Virtual Fest, EdiZone 20, on the 22rd, 23rd and 24rd of May 2020. Named in memory of Thomas Alva Edison and his contributions to the field of electrical engineering, EdiZone was an online platform for student community to develop and showcase their technical prowess. With a great set of friendly competitions like hackathon, idea pitching, poster designing contest, article writing contest, power and energy quiz and smart talks, hosted in association with it, this initiative fascinated student participants from different fields of interests.

It is important that students are encouraged in the world power and energy sectors that stimulate an interest in them to elevate their developmental and research expertise. The event commenced on 22nd May with an introductory section that familiarized this initiative with the students. EdiZone was aimed to provide a series of lectures and contests that help them brainstorm and analyze the possible ways by which they can contribute to the rest of the world. Incorporating these core principles in creative competitions, it was successful in gaining interests among the students. A total cash prize of Rs.3300 was awarded to the winners of various events hosted in association with this initiative. The event was wrapped up on 24th May and all the attendees from various colleges were given certificates of participation.

Eithon: The Hackathon



IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society, organized an online hackathon, Eithon, as a part of the 2020 IEEE PES Day Virtual Fest, EdiZone 20. The fundamental of diving into technology is to be able to crack up out of box solutions. Aimed to improve problem-solving and critical thinking skills in participants, this online hackathon was open to individuals from different fields of interests from 22nd May to 24nd May 2020.

Natural calamities are one of the most common threats currently faced by the world. The damages and losses it creates both physically and economically are diverse. This hackathon was therefore intended to brainstorm resilient measures for an environment during an inevitable crisis. It inspirited the young brains to integrate creative ideas with their knowledge to put forth their best for the society. A total price money of Rs 1000 was given to the winners.

Energia: Idea Pitching Competition



IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society, organized an online idea pitching competition, Energia, as a part of the 2020 IEEE PES Day Virtual Fest, EdiZone 20. Aimed to bring an attention to the need and potential of renewable energy, this competition was open to the participants from the 22nd of May to 24nd of May. It rendered a platform for the participants to explore the opportunities in using sustainable energy for power generation.

The need of renewable energy projects is increasing at an alarming rate. Ranging from environmental to socio-economic and political advantages, they hold the potential to serve as the most efficient solution to meet the future energy requirements of the world. It was successful in providing a platform to find inspiration and rediscover their enthusiasm to contribute their part back to the society. Participants from various student branches actively participated in the online contest. A total price money of Rs 1000 was given to the winners.

PES Panel Discussion



IEEE Student Branch College of Engineering Karunagappally shot its cannon of ablaze passion and vision to celebrate PES Day 2020. The exclusive event was conducted as a virtual fest under the name EdiZone20 on 22nd May 2020. EdiZone enclose multiple slots of fragments that blended technology, art and creativity. Panel Discussion was one of the illumination of our celebration upholding majestic established personalities, Er. Anandhu S Kumar (Senior Executive, Wipro Lighting), Er. Aneesh M S (YP PES Kerala Section), Er. Saran K S (YP PES Kerala Section) and Staji Wilson (PES WIP Sub Regional representative, Assistant Engineer trainee at TCS and IEEE Richard E Marwin Scholar). The theme was "Building a better PES Community".

Our first speaker was Anandhu S Kumar, who commenced with a brief introduction on what uprooted the concept of Power and Energy Society and how highly pivotal it is in our day to day life. He talked about his experience how he realized the essence of this sector. Staji Wilson stepped in to emphasize on the fast paced change that has been happening to the society due to competitive technology and how this field has immense potential to elevate womanhood. Aneesh M S and Saran K S came forth and gave a brief on how numerous developments can take place in the world if all of us came together to make a change. The discussion facilitated an opportunity to converse on incorporating students, professionals, industrialists and various components of the society to develop a better PES community. The participation was around 63 attendees while the feedbacks shining with clarity encouraged the SB to conduct more of such events.

Poster Designing Contest



IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPPALLY

IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society, on behalf of our online 2020 IEEE PES Day fest, organized a poster designing contest for the topic "Edison and his invention" on 22^{-st}, 23^{-st} and 24^{-st} of May. Being part of this initiative, students from various student branches across the state submitted their entries on all three days.

Organized to bring in and appreciate talents among students with a focus to create awareness on the contributions of the eminent inventor, Thomas Alva Edison, this initiative had participants from different fields of interests and departments. An effective tool to communicate with a larger audience, it challenged the artistic skills in individuals, incorporating creativity and imagination, reflecting the true essence of the genius' efforts. Out of the box creative elements, authenticity and accuracy to the theme were considered during the evaluation procedures. We received about 25+ online entries for the topic. The posters were evaluated by experts in the field. A total cash prize of Rs. 800 was awarded to the winners.

Ex-Quiz me! - Power and Energy Quiz



IEEE College of Engineering Karunagappally in association with Power and Energy Society put the heart and soul to celebrate PES Day 2020 under the virtual fest tagline EdiZone. A diverse network of programs was accommodated including a quiz competition adorned with the name "Ex-Quiz Me" and the portal remained open till 24th May 2020. As amusing as the event sounds, the quiz was even more unravelling. The quiz consisted of 10 questions based on Power and Energy. The Power and Energy society is indeed a revolution on its own and there are uncountable number of elevation in the field. This quiz gave the participants and opportunity to dig deeper into the tunnel and their efforts were indeed brimming in their answers as most of them nailed the fundamental knowledge. A unique and fun way to engage the audience, it served as a link to connect them to the power and energy sectors. The quiz was a fascinating and enjoyable route to drive the students towards a technical world. About 96 students from different colleges attended the quiz scheduled for the 3 days.

Webinar on telecom for Freshers



IEEE Student Branch College of Engineering Karunagappally in association with Power and Energy Society, as a part of the IEEE PES Day Virtual Fest 2020, EdiZone brought a yet another webinar on "Telecom for Freshers" by Er.Staji Wilson (PES WiP Sub-regional representative, Assistant Engineer trainee at TCS and IEEE Richard E Merwin Scholar) on 23rd of May 2020 from 07:30pm to 08:30 pm (IST).

A step to imprint the benefits of technology to the students, the webinar discussed the various opportunities Tata Consultancy Services offers to Freshers. TCS being one of the global leaders in IT services, consulting and business solutions, it was aimed to give a career guidance to the interested candidates. The event commenced with the felicitation by Mr. Cliffin Cletus. Students from various colleges were indulged in this online seminar. Around 62 students attended the webinar. Their interest in this webinar was evident from the high participation count. Participation certificate was given to the attendees after the completion of the webinar.