

# **IA/IE/PELS JT. CHAPTER KERALA**

## **ANNUAL REPORT 2019**

## **ABSTARCT**

IA/IE/PELS Jt. Chapter Kerala organized 36 activities during the year 2019. The activities include technical, non-technical, professional, and administrative activities. The chapter has done maximum efforts to give benefits to its members by conducting various activities.

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## DETAILS OF ACTIVITIES

### 1. Inauguration of PELS SB Chapter Musaliar College of Engineering, Chirayinkeezhu on 04.02.2019.

The IEEE Power Electronics Society Student Branch Chapter of Musaliar College of Engineering, Chirayinkeezhu was inaugurated on 4<sup>th</sup> February 2019. The programme was organized by IA/IE/PEL Jt. Chapter Kerala. The program was commenced with a silent prayer followed by the code of ethics by Mr. Mohammed Ashiq, Chair IEEE IAS SBC. The Chapter was inaugurated by Dr. Madhu Mangal, Vice Chair, LMAG Kerala (Only Life Senior member IA/IE/PELS Jt. Chapter Kerala) and former Vice President (Engg), Emerson Network, Thane. Mrs. Asmin M K, Advisor IEEE PELS SB Chapter greeted the guests with a welcome speech. Principal Dr. C Sam delivered presidential address. The inauguration was officially done by lighting the lamp by the chief guest and other dignitaries. The felicitation was delivered by Prof. Antony Thomas, HoD ECE and Prof. Rajkumar R, HoD CSE. Vote of thanks was proposed by Mrs. Shamna A R, Advisor of IEEE WiE AG. Musaliar Education Trust General Secretary. Mr. Ibrahimkutty, IFS (Retd.) was present for the inaugural function. The event was attended by 35 IEEE members and 30 non- IEEE members. After the inaugural ceremony, a technical session based on the topic “Batteries” was taken by the Chief Guest, Dr. Madhu Mangal, through which history of batteries, batteries of autonomous cars, etc. were discussed.



Fig. Memento to chief guest

## 2. ALL KERALA INDUSTRY APPLICATIONS SOCIETY STUDENT CONCLAVE 2019 (AKIASSC'19) from 8-10 Feb 2019 at NSSCE Palakkad

### Inauguration Ceremony:-

The inaugural ceremony of All Kerala Industry Applications Society Student Conclave 2019 (AKIASSC'19) organized by IA/IE/PELS Jt. Chapter Kerala was held on February 8<sup>th</sup> AN. Dr. Leesha Paul (Student branch counsellor, IEEE SB, NSSCE) delivered the IEEE Code of Ethics. Prof. Muhammed Kasim S (Chair, IA/IE/PELS Jt. Chapter Kerala) welcomed the chief guest, other dignitaries and audience. He motivated the delegates to actively participate in the workshop to get benefited. The presidential address was delivered by Dr Sudha T (Principal, NSS College of Engineering, Palakkad). She mentioned about the significance of IEEE and its societies in the current technological world. Chief Guest Dr. Sivaji Chakravorthi, (Director, NIT Calicut) and other dignitaries inaugurated the conclave by lighting the lamp. Dr. Sivaji Chakravorti delivered the inaugural address and he wished all the success to the conclave. Ms. Athira M (Chair, IAS SBC NSSCE) briefed about the activities carried out by IAS SBC NSSCE during the last year and introduced its current Execom members to the gathering. Prof. Biju K (Secretary, IA/IE/PELS Jt. Chapter Kerala) mentioned about the role and significance of IA/IE/PELS Jt. Chapter Kerala.



Fig. Lamp lighting ceremony

The ceremony was further continued with felicitations by Dr. Sameer S M (Chair, IEEE Kerala Section), Er. Dhaharan Unnithan K M (Director, Energy Management Centre Kerala) and Er. Srikanth Vasudevan (IAS CMD Membership Chair). Er. Srikanth pointed out the benefits of being an IEEE member. The awards for the best student branch chapters and volunteer were distributed during the ceremony by the chief guest. An appreciation letter from Mr. Georges Zisis (IAS President) and Peter Magyar (Director of Chapter Development) was handed over to Prof Muhammed Kasim, Chair IA/IE/PELS Jt. Chapter Kerala and the coordinators of AKIASSC'19 during the ceremony. Dr. Sameer S M, Chair IEEE Kerala Section released the first volume of IAS newsletter. The renowned website launch was also done during the occasion. The inaugural ceremony was concluded with vote of thanks delivered by Dr. Vasanthi V (Advisor, IAS SBC NSS College of Engineering).



Fig. Annual newsletter release

## Technical Talks:-

### 1. Energy efficiency for improving profitability

A technical talk on the topic “Energy efficiency and improving profitability” was organised as a part of AKIASSC'19 on 8<sup>th</sup> February 2019 at college auditorium from 4:00 pm to 4:45 pm. The talk was delivered by Er. Dhaharan Unnithan K M (Director, Energy Management Centre Kerala). Energy efficiency is an important aspect in the present world especially because of the depletion of fossil fuels and environmental scenarios. Reducing the losses in a system and thereby improving the efficiency is equivalent to conserving the energy. Energy efficiency hence plays an important role



in the economy also. Various methods to improve the energy efficiency in domestic and industrial applications were discussed during the talk. The talk was followed by an interactive session for the audience to clear their doubts.

## **2. Demystifying Hardware Product Development**

A technical talk on the topic “Demystifying Hardware Product Development” was organised as a part of AKIASSC’19 on 9<sup>th</sup> February 2019 at college auditorium from 3:45 pm to 4:30 pm. The talk was delivered by Dr. K R Suresh Nair (CTO, SFO Technologies Kochi). The session started with an introduction on how to develop a commercial product out of an idea. He also explained the same with various cases from different domains. The session made up a very good platform to ignite sparks on upcoming professionals. As a bonus to the participants, he also explained how to prepare for professional competition in today's world. He also explained how engineers could make innovative products like watches wearable for deaf and dumb, book readers for blinds etc. The session ended up with the ideas that realising prototype is only 20% of the whole job towards final commercialisation and design for manufacturing should not be an afterthought. A memento presented to Er. K R Suresh Nair for spending his time with young professionals.

## **3. Energy Storage for renewable energy system**

A technical talk on the topic “Energy Storage for renewable energy system” was organised as a part of AKIASSC’19 on 9<sup>th</sup> February 2019 at college auditorium from 3:45 pm to 4:30 pm. The talk was delivered by Er. C M Varughese. The renewable energy sources are not available all the times and this necessitates the use of energy storage systems. He also explained about different types of energy storage systems, that can be used their efficiency, cost aspects etc. The different trends in the usage of energy storage systems also discussed. The talk followed by an interactive session for the audience to clear their doubts.

## **4. Autonomous Cars**

A technical talk on the topic “Autonomous cars” was organised as a part of AKIASSC’19 on 10<sup>th</sup> February 2019 at college auditorium from 9:30 am to 10:15 am. The talk was delivered by Ms. Revathi T S (Senior Engineer, Tata Elxsi). The session started with the basic definition of autonomous cars explained and the promises they can bring in the future. Autonomous cars can be the safest Technology in the future. The levels can be classified into six categories. Level 1 which provides features to drivers for driving whereas level 5 which makes driving easier since it uses the minimum human effects. Various technologies used for the manufacturing of autonomous cars were explained in detail. Sensor sets including LIDAR technology were explained. The session was concluded by explaining challenges faced for implementing autonomous cars in real life.

## **5. Building Management Systems**



A technical talk on the topic “Building Management Systems” was held on 10<sup>th</sup> February 2019 from 2:00 to 2:45 pm. Er. Shahim Baker (CEO, Baker Associate Groups) was the speaker. The talk started with an introduction on the topic. The building management system is a building automation system that does the monitoring, controlling, and management of systems in a building such as heating, ventilation, lighting and other such services. This helps to achieve a safe and comfortable working environment as well as provides energy savings and increases energy efficiency. The talk also discussed various features available in the system such as man-machine interface, system security, reporting, and remote connectivity for a smooth working. The efficient building management systems can provide maintenance savings and contribute to energy savings making the buildings more environmentally friendly. The talk ended with an interactive question-answer session where the participants interacted with the speaker to clear their doubts.

### **Non-Technical Talks:-**

#### **1. Studying engineering - Do we need it differently**

A non-technical talk on the topic “Studying engineering- Do we need it differently” was organised as a part of AKIASSC’19 on 9<sup>th</sup> February 2019 at college auditorium from 4:45 pm to 5:00 pm. The talk was delivered by Dr. Sivaji Chakravorti (Director, NIT Calicut) was indeed an eye-opening session for the budding engineers. The session touched every aspect of today's curriculum. By including his own life experiences, Dr Sivaji Chakravorti was able to create an impact on the students as to why and how we should learn engineering. The drawbacks of our curriculum today and the lack of communication skills were some of the main areas that were explained. The talk indeed was a motivational thrust for the young minds to face their future confidently. It provided them with an insight into what they were doing wrong in their educational life. The session ended with a question-answer section where the students interacted enthusiastically with a number of intellectual questions.

#### **2. Innovative solutions: key to success**

A non-technical talk on the topic “Innovative solutions: key to success” was organised as a part of AKIASSC’19 on 9<sup>th</sup> February 2019 at college auditorium from 4:30 pm to 5:15 pm. The talk was delivered by Dr. Jacob Chandapillai (Director, Fluid Control Research Institute, Palakkad). The session opened with an introduction to change in trends in the public sector across the decade. He also added that at the end your ability to work and adapt to situations matter than the certificates you have earned. The present generation should be able to identify the problems the industries are facing and should find sustainable and feasible solutions to it. He also highlighted the point that engineers are solution providers. He cited several examples like Uber and OLX which provided smart solutions to daily life problems. The session continued with the discussions which focused on how centralized office systems, process automation, robotic automation, IoT helped the end users to connect easily and efficiently. He also added that “Either you should develop skill in a particular

topic or yourself should provide a solution”. The session ended up with the concept that only engineers can survive in future.

### **3. My Journey**

A non-technical talk on the topic “My Journey” was held on 9<sup>th</sup> February from 4:30 pm to 5:15 pm. The talk was delivered by Dr. Madhu Mangal (Vice Chair, Life Member Affinity Group Kerala Section). As the title suggests, the session was a light to his life which includes his career in Keltron. The key part of the session was an explanation of the product development process. The session also discussed various topics like the importance of Pre-research, product life cycle and importance of product sustenance.

## **Workshops:-**

### **1. Industrial automation with PLC and SCADA**

As a Part of AKIASSC’19 the workshop on PLC and SCADA was conducted on 9<sup>th</sup> Feb 2019 by Er. Joseph Rojer (R&D manager, Walco solutions, Kochi) at CNC Lab from 9:00 am to 3:30 pm. The session started with an interactive session on “What is a PLC?” with real-life examples. Allen Bradley Programmable Logic Controllers are a world leader in Industrial Automation sector. The same was explained in detail in the session. In simple words, he explained that a PLC is a controller where we can implement our ideas. The three basic components for a PLC that is feedback, Set value and Instructions were defined in the session and implementation of Ladder programming is explained in the session. The workshop continued with topics like the components of PLC, which includes its flow of control and its hardware components. The speed of control, memory requirements, input and output modules, signals, communication interfaces and it's integration with different types of protocols were well explained in the session. The afternoon session was a hands-on session about the implementation of the Logic gates with the help of software. The same was shown in hardware too.

### **2. Lighting Design and New Trends in Lighting**

As a Part of AKIASSC’19 the workshop on Lighting Design and New Trends in lighting was conducted on 9th Feb 2019 by Er. Tomy Maly (Asst. Manager Wipro lightings) at CNC Lab from 9:00 am to 3:30 pm. The session started with an interactive section among the delegates about their basic knowledge of lighting terminologies. He explained about indoor lighting design and also about three lighting system types. The section provided information about classification of lighting systems based on visual applications such as- Ambient lighting, Accent lighting, and Task lighting. He also discussed the selection criteria of light sources and choice of luminaries based on

application, efficiency, IP ratings, size, appearance, maintenance, cost, light distribution pattern etc. He explained about design calculations for input data and about reflection factors.

A practical workshop session was also included, in which the delegates were explained to design the basic lighting design of a room. The session also discussed Internet of Lighting (IoL) and power over Ethernet and lighting systems. Some basic facts were also discussed such as the visual, biological, and environmental impact of light. He also explained about Li-Fi technology based lighting solutions which will provide high-speed data transmission, significantly greater security and privacy, low maintenance costs, facilitate asset tracking and geo-fencing, more robust and reliable wireless networks etc. The last session was about smart and connected outdoors, which will lead to optimised energy consumption, reduced maintenance costs, improved public safety, more than 50% energy savings etc. The session winded up with a promo video of Wipro.

### **3. Project Management Principles and Practices**

As a Part of AKIASSC'19 the workshop on Project Management was conducted on 9th Feb 2019 by Muraleedharan Manningal (Head State e-Gov Mission Team & Chair-IEEE Kerala Section, Govt Relations) at Digital Lecture Hall from 9:00 am to 3:30 pm. The workshop mainly covered the qualities required for a good project manager and definitions of project and project management. The talk was mainly focused on how efficiently time should be managed while doing a project. They discussed how to make a project successful and the reason behind the failure of most projects. Every participant explained their views on different projects. The session was interactive with various individual and group activities. Students were given opportunities to think like a project manager through the activities.

### **Industrial visits:-**

As a part of All Kerala Industry Applications Society Student Conclave an Industrial Visit was conducted at 10 am on 8<sup>th</sup> Feb 2019. The whole participants divided into two groups. One batch went to Patspin India Ltd. Palakkad. 45 Delegates accompanied by five volunteers visited Fluid control Research Institute and other batch to Patspin India Ltd.

#### **1. Fluid Control Research Institute**

An industrial visit to Fluid Control Research Institute (FCRI), Kanjikode, west Palakkad was conducted as a part of AKIASSC'19 on Friday 8<sup>th</sup> February 2019. Fifty delegates with five Volunteers under the guidance of Dr. Leesha Paul, Prof Muhammed Kasim and Dr.Madhu Mangal visited FCRI to interact with the premier institute in Fluids Engineering in South East Asia. The institute carries out the inspection of flow products, Testing and Calibration of Valves, flow meters and other measuring instruments as per ISO requirements, Model approval Tests, software for design and selection of flow meters/valves. There are various international standard sophisticated instruments available. The IV provided the opportunity to visit Water Flow Lab, Air Flow Lab, Oil

Flow Laboratory and other auxiliary laboratories. The technical head of FCRI explained the working of machines and laboratory functions. Finally, he gave a brief introduction to FCRI and its importance in the current world.

## **2. Patspin India Ltd. Palakkad**

Mr Kandimadhinadhan President of Patspin India Ltd Palakkad held an introductory session to the delegates and Mr Sudhakaran General Manager Commercial of Patspin India Ltd Palakkad about the company's worldwide trading and marking. Patspin established in 1994 and has gained immense expertise in supplying and trading of cotton yarn, yarn, cotton yarn, etc. Precaution was given by Technical assistance. Dr. Leesha Paul , Prof. Muhammed Kasim Sand Dr.Madhu Mangal accompanied students in the visit. Visit started with substation of the company followed by, different labs where the cotton cleaned manually, then turned into a thread of various sizes and for various uses. After two and a half hour of learning different mechanism and machines, the session was concluded with a tea break, photo session and feedback from the delegates.

### **Field visit:-**

On the first day of AKIASSC'19 8th Feb 2019, 134 delegates along with 20 volunteers visited Malampuzha garden. Prof. Muhammed Kasim S, Dr.Leesha Paul , Dr.Vasanthi and Dr.Madhu Mangal accompanied them. The trip started at 5.30 pm and reached Malampuzha garden by 6 pm. In Malampuzha garden, an icebreaking session was conducted by the crew led by Annmarry and Vaisakh. Delegates participated actively in the session, which included fun games and cultural segments followed by group photo session. Delegates really enjoyed those moments. The lightings in the evening were beautiful.

### **MEET UP'S:-**

#### **1. IAS SB Chapter Advisers Meet**

As a part of All Kerala Industry Applications Society Student Conclave 2019, Advisor's Meet was conducted on 9<sup>th</sup> Feb 2019 from 10:00 am to 2:00 pm. The Meet was held with the initiative of the Advisors' of IEEE Kerala Section to discuss the reforms that need to be introduced in the IEEE Kerala section and about its' functioning till date.

The Meet started at sharp 11:00 am with a welcome note given by Prof. Muhammed Kasim S (Chair IA/IE/PELS Jt. Chapter Kerala). This was followed by the self-introduction of the advisors that graced the meet. There were in total 12 advisors. The meet proceeded with the discussion of IA/IE/PELS Jt. Chapter Kerala activities. Prof. K Biju (Secretary IA/IE/PELS Jt. Chapter Kerala) enlightened on the SBC operation with the reporting of activities by Anandhu S Kumar (Coordinator Student Branch Chapters IA/IE/PELS Jt.Chapter Kerala). Views on IAS chapters and Membership programs was put forward by Er. Srikanth Vasuden (IAS CMD Chapters and Membership-Chair). The morning session ended with the networking lunch at 1:00 pm. The

afternoon session began, soon after the lunch break which lasted till 1:45 pm, with the presentation by advisors on the activity plan 2019. Advisors were actively involved in the meet exchanging their views. Finally, the Meet ended with the concluding remarks by Dr Bijuna Kunju (Vice Chair IA/IE/PELS Jt.Chapter Kerala).

## **2. WiE Empowerment Summit (WES)**

As part of AKIASSC'19 (All Kerala Industry Applications Society Student Conclave) organised by IA/IE/PELS Jt. Chapter Kerala in association with IEEE IAS SBC NSSCE, WiE Empowerment Summit (WES) was conducted on 10<sup>th</sup> Feb 2019. It was an interactive session by women entrepreneurs lead by, Dr. K Bijuna (Vice Chair IA/IE/PELS Jt. Chapter Kerala), Mrs Jyothi Ramaswami (Vice Chair of WiE AG Kerala) and Megha Ben (Regional-10 Student Ambassador of IEEE CS).

The event was scheduled on 10<sup>th</sup> February. The meet was inaugurated by the session of Dr K Bijuna on introduction to Women In Engineering at 10.30 am. She had given an overview of WIE AG to the students. Mrs Jyothiramaswamy had given a path to initiate WIE AG in the student branches and the benefits of WIE membership. Er. Megha Ben had explained the whole scholarships that IEEE provided and also her life path through these scholarships. She also motivated the candidates to show their skills on the platform of IEEE. After the session of Megha Ben, the students were divided into groups of ten members and each team were advised to provide suggestions on Women In Engineering. The students came up with innovative ideas. The session ended at 12.00 pm by giving mementoes to the women leaders by Dr. Leesha Paul Branch Counsellor of IEEE SB NSSCE.

## **3. IAS SB Chapter Chairs Meet**

IEEE IAS SBC Student Chairs gathered on February 10<sup>th</sup>, offering a chain to get in touch with, to present an annual report of 2018 and to discuss the plans for 2019. The meeting started at 10:30 am. Abhinand A S (Student Representative of IA/IE/PELS Joint Chapter Kerala) delivered the welcome speech. Afterwards, the introduction of Execom 2019 took place. Chairs of all student chapter present there introduced themselves, along with other dignitaries present there. Which includes prof. Muhammad Kasim S (Chair, IA/IE/PELS Jt. Chapter Kerala), Prof. K Biju (Secretary, IA/ IE/ PELS Jt. Chapter Kerala), Er.Sreekanth Vasudevan (IEEE IAS CMD Chapters and Membership-Chair & IEEE IAS Young Professionals Committee-Chair). The first session was handled by Er. Sreekanth Vasudevan. He insisted on the complete involvement of the members in the activities. His was an interactive session discussing the responsibilities of the chairs. The next session was taken by Anandhu S Kumar (Co-ordinator of Student Branch Chapter). He explained the necessary steps that every IEEE SBC should take throughout their activities. He also explained about different opportunities provided by the organisation. Afterwards, everyone came up with their opinions to improve the activities of the SBC and for the active participation of the members. The meeting discussed the ways to make growth in the Renewal of IEEE IAS SBC membership, as its

rate has been fallen in the past few years. Later on, the presentation of the activity report by the 'Outstanding IEEE IAS SB Chapter Award' winners took place. Prasoon Chandran Mavila of IIST Trivandrum, Abhinand A S of TKMCE and Athira M of NSSCE presented their activity reports of 2018. At last, Nebic Johnson, Student representative (2019) IA/IE/PELS Joint Chapter Kerala delivered vote of thanks.

#### **4. IAS YP meet**

YP Meet (Young Professional Meet) was held on 10th February 2019 at NSS College of Engineering as part of AKIASSC'19. A team of 7 members from YP joined for the meeting. The team was headed by Er. Shahim Baker (Secretary IEEE Kerala Section) and Er. Thomas Sabu, (Secretary Kerala YP). The team also included Er. Sudev and Er. Jishnu who are also active members of Kerala YP.

The major discussion by the team was the importance to maintain and improve the IEEE organisation. They also discussed the pros and cons of Technologies. The YP members interacted with the student chairs from different colleges. Prof. Muhammad Kasim S, Dr. Madhu mangal and Prof. K Biju also engaged in the interaction.

The newly elected student Execom introduced themselves and their plans for the new academic year. The plan included implementing programs and events to provide the IEEE Student members with technical knowledge.

#### **Cultural Events:-**

On 9<sup>th</sup> February 2019, Saturday, the second day of AKIASSC, we arranged a cultural night dedicated to the delegates at the open stage of NSS College of Engineering.

The program was started at 7.00 pm with the interactive session arranged by Binsin. He added fun games that engaged the delegates. This was followed by vibrant musical performance organized by the college band 'Rudra'. The lead singer was Rakhi R (Chair PELS SBC NSSCE). The cultural night was fulfilled with a fabulous gale dinner. The program came to an end at 9.30 pm, which gave wonderful memories and unforgettable moments to each and everyone who were a part of it.

#### **Valedictory Function:-**

The valedictory function started at 3:00 pm at the college auditorium. Prof. K Biju delivered the welcome speech. He welcomed Prof. Muhammad Kasim S (Chair, IA/ IE/ PELS Jt. Chapter Kerala), Dr. Leesha Paul (Counselor, IEEE SB NSSCE) and Er. Shahim Baker (CEO, Baker Associates Group). All delegates and volunteers gathered in the auditorium. For the first time, IAS SBC Chairs Certificates are distributed. The certificates are awarded by Er. Shahim Baker and Prof. Muhammad Kasim S. The participation certificates are awarded to delegates by Er. Shahim Baker. Six Chairs awarded full fee weaver who brought more than 6 numbers of delegates from their SB Chapters. Abhinav R (Secretary, IEEE IAS SBC NSSCE) delivered the vote of thanks..



Fig. Group photo

### **Conclusion:-**

The Industry Application Society/Industrial Electronic Society/ Power Electronics Society Jt. Chapter, IEEE Kerala Section in association with IAS SBC NSS College of Engineering, Palakkad had organized a three day Flagship Event from 8<sup>th</sup> - 10<sup>th</sup> of February 2019, All Kerala industry Application Society Student Conclave 2019. 55 IEEE members and 85 non-IEEE members participated in the programme.

### **3.KAIZEN 6.0 at CE Munnar from 14-17 February 2019**

The Kaizen 6.0, is an international IEEE symposium organized by IEEE SB College of Engineering Munnar in association with IA/IE/PELS Jt.Chapter Kerala. The start of the Kaizen 6.0 fell on 14th February 2019. Kaizen being a much-awaited event saw an immense flow of participants. The event started by an ICE Breaking Session. After ICE Breaking a session was taken by Nagaraja Prakasam on exploring the world, Entrepreneurship and the challenges faced by him. After the session, students gathered for dinner. After dinner girls and boys moved to their respective accommodations.





Fig. Talk by Nagaraja Prakasam

The second day of the event started with an icebreaking session. The icebreaking session was led by Mr. Rohan C H, Chairman of IEEE SB CEM. It was followed by a session from Biswas, about Importance of Coding in day to day life. The next event of Kaizen 6 was taken by Ms. Anjali Chandran. It was followed by lunch. After lunch, a technical session was taken by Mr.

Vivek K. on “Blockchain”. The session was followed by an inaugural ceremony. After the inauguration a session by the chief guest took place. Chief guest Jose N, the Chief Judicial Majistrate of Idukki delivered the keynote address. Next, Mr. Niyog Krishna spoke about exploring the world and the wide opportunities ahead of us. The session was followed by dinner and camp fire. A music concert performance was also done during the campfire. The concert was led by College band.

The third day of Kaizen 6.0 concentrated purely on technical skill enhancements of the delegates. Workshops on various topics were conducted. Important workshops were on Machine Learning and Blockchain. Mr. Nihal Sahu, a famous Technologist and law student, shared his thoughts on how coding can be implemented in legal issues.

The fourth day of Kaizen 6.0, was the concluding day. The day started off with trekking, which is the signature event of Kaizen. The trekking lasted for about 2 hours. Participants regrouped at the top and a session was taken by Mathew Kuzhalsadan. Trekking was followed by breakfast and soon after breakfast participants crowded at the college lawn for the photo session and networking activities. Afterwards, a talk session was taken by Mr. Renjith Keshav. It was followed by a session from Shine, Technologist, about data security and cryptocurrency. An official concluding meeting was conducted after the talk session. Branch Counsellor Mr. Manoj R proposed the vote of thanks. 63 IEEE members and 98 non-IEEE members participated in the programme.

#### 4. PELS DLP at VJEC Kannur on 26<sup>th</sup> February

A DISTINGUISHED LECTURER PROGRAM was hosted by IEEE SB VJEC on 26<sup>th</sup> February 2019 at Vimal Jyothi Engineering College, Chemperi Kannur. The programme was conducted in association with IA/IE/PELS Jt. Chapter Kerala. The event started by the registration for events at 08:30 am in the morning. The program was started by the Inaugural Ceremony at 9:30 am. The prayer song sung by Ms. Dhanya P. The code of ethics was delivered by Mr. Joel Mammen George, chair IEEE PELS SBC VJEC. The welcome address was by Mrs. Laly James, HOD, EEE Department. The presidential address was delivered by Rev. Fr. Dr. Thomas Melvattathu, Chairman VJEC Group of institution. The Chief Guest for the session was Dr. Vassilios G Agelidis, professor Denmark University. The function was inaugurated by lighting the ceremonial lamp. The felicitation address was given by Jinu Vdakkemulanjinal, Administrator VJ Group of institutions, and which is followed by Sebastian Puthanpuraikkal, PRO Vimal Jyothi engineering college. Vote. At finally the vote of thanks delivered by Mr. Prabin James, Staff advisor IEEE PELS SBC VJEC. The inaugural ceremony was adjourned, which was followed by a tea break for 10 minutes.

After the tea break the session was handled by Prof. Vassilios. He taught about importance of solar power plant and how to implement the solar plant. The three main points or 3 important factors we need to follow in our life is 'Networking', 'Ask questions', and 'never give up'. So through out the Prof. Vassilios motivate us ask questions. The session was truly good and helpful. The event concluded by 12:30 pm and all the delegates and volunteers dispersed. The delegates and the dignitaries had a positive opinion about the event and the event was a grand success.



Fig. Prof. Vassilios G Agelidis during his talk



Fig. Group photo

25 IEEE members and 47 non-IEEE members participated in the programme.

## 5. PELS DLP at GEC Thrissur on 27<sup>th</sup> February

The Distinguished Lecture Program on “Large Scale Solar PV Electricity Grid Integration: Technologies, Issues, Market Integration and Impact” by Prof. Vassilios G. Agelidis, organised by IEEE Power Electronics Society(PELS) and Industrial Application Society(IAS) SB Chapters of Government Engineering College, Thrissur(GECT) on Feb 27<sup>th</sup> was a success owing to wide participation from the students and professors. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala.

Prof. Agelidis is a Professor at the Centre for Electrical Power and Energy, Department of Electrical Engineering, Technical University of Denmark(DTU). He served as AdCom Member of IEEE PELS and was Technical Chair of the 39<sup>th</sup> IEEE Power Electronics Specialists Conference, Rhodes. He is a recipient of Advanced Research Fellowship from the U.K’s Engineering and Physical Sciences Research Council. He has been recognized as a Fellow of the IEEE(USA) and IET (UK). He has global working experience having worked in many countries including Canada, Australia, Greece, China, UK, Sweden, Malaysia, South Korea, UAE and Denmark.

In his lecture, Prof. Agelidis gave an outline of the developments in the field of solar energy, its benefits, challenges and various issues associated with its integration to the existing grid and market. He also pointed out that future of automotive industry is in electrical vehicles and discussed issues when plugging more and more electrical vehicles to the grid. He discussed how India can utilize solar energy to power electric vehicles. In order to promote the large scale use of solar power



in the 3.5 trillion-dollar automobile industry, he stressed on the concepts of decoupling electric vehicles from people, autonomous vehicles, decentralisation, electrification of transportation and digitalisation. Issues with the inverters and its capacitors, where the power electronic engineers have great opportunity were discussed. Need for the further improvements in the areas of control, monitoring, prediction, failure avoidance to deliver more value for reliability and monetary benefit to the solar industry were explored. He motivated the students to ‘dream, believe and do’ to help India make innovative and breakthrough advancements in the field of solar energy.



Fig. Prof.Vassilios G Agelidis during his talk

32 IEEE members and 29 non-IEEE members participated in the programme.

## 6. IAS Technical paper writing workshop at CET on 27th February

As part of Science week, IEEE Industry Applications Society SB Chapter CET in association with IA/IE/PELS Jt.chapter Kerala conducted a workshop on February 27, 2019. It began at 4pm, with it being handled by Vishnu S Nair ,Athul K and Bharath Kartha of S8 AEI. They gave an idea about technical paper writing and tips about it.



Fig. Workshop

The participants of the session also showed great interest on the topic as well. The session ended around 5.45pm. The number of IEEE members attended is 24 and non-IEEE members are 6.

## 7. IAS SBC Inauguration by Prof. Vassilos Agledis at CE Chengannur on 28<sup>th</sup> February

The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. The Inaugural Ceremony started off with the Recitation of Code of Ethics of IEEE by Secretary, IEEE IAS CEC SB at 9.30 AM. It was followed by the Welcome Address by Prof. Raju M (Staff Advisor, IEEE IAS SBC CEC). He described the developmental step towards the introduction of a new society in the institution. Following that, the Presidential Address was delivered by Principal, CEC. Later, the traditional lamp lighting ceremony by the group of dignitaries took place which marked the official inauguration of IEEE IAS CEC SBC. The ceremony was proceeded with the inspirational and admirable speech of Prof. Vassilios G Agelidis, University of Denmark. The inaugural ceremony was followed by his technical talk on ‘Solar PV grid integration’. The event concluded at 11.30 am. 28 IEEE members and 43 non-IEEE members participated in the programme.

### **8. DLP by Prof. Vassilios G. Agelidis at TKMCE Kollam on 28<sup>th</sup> February**

IEEE SB TKMCE in association with IA/IE/PELS Joint Chapter, Kerala Section, organized a Distinguished Lecture Program (DLP) on the topic "Large Scale Solar PV Electricity Grid Integration: Technologies, Issues, Market integration and Impact". The lecture was delivered by Vassilios G. Agelidis, Professor, Technical University of Denmark -Fellow IEEE, on 28th of February at TKM College of Engineering. The programme started at 2.30 pm. The lecture focused on diverse topics starting from world energy demand, energy resources, photovoltaic cells, its application, solar cells, and the list goes on. It was a great opportunity for student professionals to interact with such a great expert. The programme came to an end at 4.30 pm.



Fig. Prof.Vassilios G Agelidis during his talk



Fig. Group photo

16 IEEE members and 13 non-IEEE members participated in the programme.

## 9. IEEE IAS SBC Inauguration&DLP at SCTCE Trivandrum on 1<sup>st</sup> March

The Inaugural Ceremony started off with the Recitation of Code of Ethics of IEEE by Ms. Vyshnavi Jayakumar (Secretary, IEEE IAS SCT SB). It was followed by the Welcome Address by Dr. Bobby Philip (Staff Advisor, IEEE IAS SBC). The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. He described the developmental step towards the Introduction of a new society in the institution. Following that, the Presidential Address was delivered by Prof. (Dr) K Prabhakaran Nair (Principal, SCTCE). Later, the traditional lamp lighting ceremony by the group of dignitaries took place which marked the official inauguration of IEEE IAS SCT SBC. The ceremony was proceeded with the inspirational and admirable speech of Prof. Vassilios G Agelidis, University of Denmark. He advised the students to follow some important principles in life such as learning from failures, improving skills, working hard to fulfil the dream etc. Following that, Dr. Madhu Mangal (Vice Chair, Life Member Affinity Group, IEEE Kerala Section), Mr. Ajith Gopi (Heading Technical Consultancy in Solar PV projects, ANERT), Prof. M R Sarathchandradas (Dean, PG Studies) conveyed their felicitations in the auspicious event. The Inaugural Ceremony concluded with the delivery of Vote of Thanks by Prof. Asha S (IEEE SCT SB Counsellor).

The next session marked the most craved part of the event, DLP. Mr. Abish Vijayan (Chairman, IEEE IAS SBC) gave a brief introduction on the speaker and the DLP. Prof. Vassilios began the Lecture by providing an introduction on the topic "Large-Scale Solar PV Electricity Grid Integration: Technologies, Issues, Market Integration and Impact".

Prof. elaborated why renewable energy sources are not stable and the need of reliable ways. He emphasized on developing more than 100% renewable energy. He also explained the effect of inertia on dynamic performance of wind turbines and need of stabilising grid and uses of off grid energy harnessing methods. He addressed every related challenges and classified uncertainty as the



major challenge in renewable energy sources. As solution he suggested using electric vehicles (EVs) as mobile power storage could eliminate the need to build costly stationary grid storage for energy from renewable sources. He also suggested the use of synergies by integrating different energy sources.

It was followed by the presentation on the topic. He bottom lined the fact that solutions can be found. Over the coming decades, digital technologies are set to make energy systems around the world more connected, intelligent, efficient, reliable and sustainable. Digitalization is already improving the safety, productivity, accessibility and sustainability of energy systems. He gave an insight on Photo-Voltaic Inverters, Differences about central, string and modular inverters, Grid Voltage Monitoring methods and generation of grids. He discussed the challenges in PV Inverter Design, influence of new semiconductor namely SiC, GaN. He concluded by indicating the requirements for the next generation of PV Inverters.

The DLP concluded with an interactive session with students and professionals. The DLP was so illuminating that the participants was keen and glued to their seats. Mr. Vivek Menon (Chairman, IEEE SCT SB) delivered the Vote of Thanks which marked the end of the auspicious event. This was followed by presenting a token of love to Prof. Vassilios and a Group photo session.



Fig. Group photo

27 IEEE members and 18 non-IEEE members participated in the programme.

## **10. IAS SBC Inauguration by Prof. Vassilos Agledis at CET Trivandrum on 2<sup>nd</sup> March**

History was made on 2<sup>nd</sup> March 2019, when IEEE Industry Applications, Society CET



chapter was inaugurated by Chief guest Dr.Vassilios G Agelidis, Fellow IEEE and Prof. University of Denmark, Prof. Biju K, Secretary IEEE IAS Kerala Section, in the presence of Dr VR Jisha, former Vice Chair, IEEE Robotics and Automation Society, Kerala Section and Dr Sreejaya, Staff Advsiior, Power and Energy Society, student branch CET.

The function began with a welcome speech by the chapter councilor Dr. V R Jisha Professor, Dept of Electrical and Electronics Engineering, CET. She welcomed Dr.Vassilios G Agelidis, Fellow IEEE and Prof. University of Denmark, Prof. Biju K, Secretary IEEE IAS Kerala Section, in the presence of Dr VR Jisha, former Vice Chair, IEEE Robotics and Automation Society, Kerala Section,Dr Sreejaya, Staff Advsiior, Power and Energy Society, student branch CET,the faculty members and the students to the occasion.

Then Dr Sreejaya, Professor, Dept of Electrical and Electronics Engineering, CET delivered the presidential address. Dr Sreejaya took pride in being associated with IEEE and extended her support to IEEE IAS CET chapter. She encouraged the chapter to conduct activities, workshops and contests that would reach out to the students and bring out the best in them.

Then arrived the auspicious time to formally inaugurate the IEEE Industrial Applications Society CET chapter. The chief guest Dr.Vassilios G Agelidis was called upon to the dias to do the honours. The inauguration was officially done by lighting the ceremonial lamp by the chief guest and other dignitaries. Dr.Vassilios G Agelidis briefed the gathering about the significance and achievements of the IEEE Industrial Applications Society and its relevance to the student community in the modern times. He wished IEEE Industrial Applications Society CET chapter the very best in all its endeavors.

It was followed by a talk by Dr.Vassilios G Agelidis. In the session he talked about power electronics, energy resources and shared his areas of interest. He told the gathering about the energy efficient technologies that are being used in Denmark. The lecture was followed by an interactive session with Dr.Vassilios G Agelidis, where in students could share their ideas with him as well as ask their queries.

After that, Prof. Biju K, Secretary IEEE IAS Kerala Section was invited to address the gathering. He congratulated the student branch for their initiative. He promised the full support to IEEE Industrial Applications Society, in the way ahead. He then went on to talk about IEEE Industrial Application Society and how we can benefit from being a part of this group. His inspirational and thoughtful words were greeted by loud applauses from the assembled crowd.

The session concluded with Mr.Hamraz Samad extending the vote of thanks and also by presenting a memento to Dr.Vassilios G Agelidis by Dr.Sreejaya.



Fig. Interactive session



Fig. Handing over memento

14 IEEE members and 33 non-IEEE members participated in the programme.

### **11. PELS inauguration at GEC Kannur by Prof. Sanjib Panda on 10<sup>th</sup> March**

The inauguration of IAS and PELS student chapters of IEEE SB GCE Kannur took place on 11 March 2019. The programme was conducted in association with IA/IE/PELS Jt. Chapter Kerala. On the same day a technical talk was delivered by Prof. Panda on the topic "Can a dumb electrical load be made smart using electric spring to mitigate renewable energy source variability issue?". 63 IEEE members and 11 non-IEEE members attended the programme.

### **12. PELS inauguration at GEC Thrissur by Prof. Sanjib Panda on 11<sup>th</sup> March**

The IEEE Power Electronics Society (PELS) Student Branch Chapter (SBC) of the Government Engineering College - Thrissur (GECT), Thrissur, Kerala, India was inaugurated on 12 March 2019 by Dr. Sanjib Kumar Panda, Professor of National University of Singapore (NUS) and PELS Asia-Pacific Regional Chair. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. Dr. Jaison Mathew, Staff Advisor, PELS Society welcomed the gathering and introduced the speaker to the gathering which was followed by presidential address by Dr. B Jayanand, Principal-in-Charge GECT. The PELS SBC was inaugurated by the Dr. Panda and other dignitaries by lighting the ceremonial lamp.

Dr. Panda is an Associate Professor and Director of the Power and Energy Research Area with Department of Electrical and Computer Engineering, National University of Singapore (NUS). He has co-authored one book and holds six patents. He has carried out extensive research in various areas of control of electric drives and power electronic converters. He is Associate Editor of “IEEE Transactions on Power Electronics” and “IEEE Journal of Emerging and Selected Topics in Power Electronics”.

In his inaugural address, Dr. Panda presented a brief history of the PELS Society and various activities carried out by the society. He stressed the importance of serving the community and the institution back through various programmes connected with PELS such as Empower a Billion Lives competition. He informed the gathering about different opportunities for IEEE PELS members. Dr. Panda also commented on the ongoing trends in transportation industry such as electric vehicles and how power electronics can play a major role in this area.

The meeting was felicitated by Dr. Reji P, Head of the Electrical Engineering Department, Er. C M. Varghese, Managing Director of IGA-Tech Industries, Cochin and Chairperson of IEEE Industrial Relations and SEEM Kerala. IEEE SB representative, Sreejith and IEEE Student Branch counsellor Prof. K D Joseph, also felicitated the function. IEEE PELS SBC chair John A. R. expressed gratitude to all dignitaries. The event was made more colourful by the active participation of under graduate and post graduate students of GECT.

After the inaugural ceremony the meeting was adjourned and resumed for the technical talk by Dr. Sanjib Kumar Panda on **“Can a dumb electrical-load be made smart using electric spring to mitigate renewable energy source variability issue?”**.

The invited talk by Dr. Sanjib Kumar Panda on **“Can a dumb electrical-load be made smart using electric spring to mitigate renewable energy source variability issue?”** was highly enlightening and informative. The session began on 10:00am in the Maxwell Hall, Electrical Engineering Department. Dr. Jaison Mathew, Staff Advisor, IEEE PELS/IAS SB Chapter welcomed the gathering.

Dr. Panda began his lecture by stressing the importance of increasing photovoltaic generation to reduce the Grid Emission Factor (GEF). One of the drawback of conventional system is that generation side has no information about the demand. Also the variations in the source side affect the critical load adversely. To protect the critical-load from these variations, Dr. Panda introduced the concept of electrical spring. The electrical spring absorbs the variations in input voltage to control the voltage across non-critical load while the voltage across the critical load is maintained within the required limits. This improves the reliability of the system to a great extent. The non-critical load together with electrical spring form a smart load. The talk was followed by interactive session with the students. Prof. K. D. Joseph, IEEE

SB Branch Counsellor presented a memento to Dr. Panda as a sign of gratitude. Jomin Thomas N J, Secretary of IEEE PELS SBC expressed the vote of thanks.

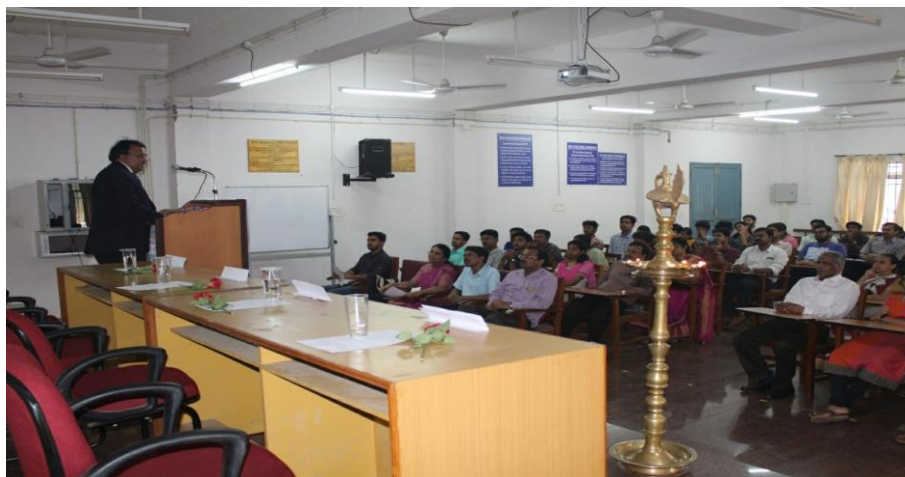


Fig. Dr. Sanjib Kumar Panda during his talk



Fig. Group photo

16 IEEE members and 15 non-IEEE members participated in the programme.

### **13. PELS inauguration at CE Karunagappally by Prof. Sanjib Panda on 12<sup>th</sup> March 2019**

The PELS student branch chapter of College of Engineering Karunagappally was inaugurated on 13<sup>th</sup> March 2019 by Prof. Sanjib Panda. Prof. Muhammed Kasim S (Chair IA/IE/PELS Jt. Chapter Kerala) was present. 35 IEEE members and 14 non-IEEE members attended the programme. In his inaugural address, Dr. Panda presented a brief history of the PELS Society and various activities carried out by the society. He stressed the importance of serving the community and the institution back through various programmes connected with PELS such as Empower a Billion Lives competition. He informed the gathering about different opportunities for IEEE PELS members.



Fig. Group photo

#### 14. WIE INSIGHT from 8-16 March

IEEE IA/IE/PELS Jt. Chapter Kerala celebrated the spirit of womanhood with "Wie insight" as a part of international women's day 2019 to tribute all women who brought phenomenal change in the society. The program was aimed to elevate the unlimited power of women in the context of science and technology. Wie insight conducted from March 8 to 16 was led by Athira.M (wie coordinator IA /IE/PELS Jt. chapter Kerala) and Laya Raj (Trav hub WiE coordinator IA /IE/PELS Joint chapter Kerala ). About 25 events happened around Kerala as a part of Wie insight. The event aimed to build up a girl community of self confidence. The program mainly focused on benefits of girl student members in IAS, IES and PELS. The program helps to raise the voice of women empowerment and to break the shackles of exclusion.

The major activities conducted as a part of WiE insight was a photographic contest and a two level quiz competition naming Quest. The topic of the photographic competition was "Women's day celebration and Women empowerment". About 15 entries came for the competition around the SBCs in Kerala. The validation of the competition was done by the execom members. The photograph from IAS SBC UKFCET is selected as the best among the entries. The prize is a SDLP session organised by joint chapter. The next major event is the quiz naming "QUEST". The quiz competition (Quest) happened around 17 SBCs under joint chapter. The details of the winners were collected by the chapter chairs. The quiz is based on woman empowerment, science and technology. The active participation of the SBCs under joint chapter made the event a great success.





Fig. Prize distribution

11 IEEE members and 13 non-IEEE members participated in the final programme.

### **15.PELS technical seminar at Musaliar engineering college on 18<sup>th</sup> march**

As part of Technical Festival, three Technical talks were conducted jointly with the help of IA/IE/PEL Jt.Chapter Kerala, Department of EEE, and IEEE IAS SBC Musaliar Engineering College on 18<sup>th</sup> March. The president of the meeting was Dr. C. Sam, Principal, Musaliar College. The Chief guests are Dr. Chinmoy Saha (Chair, APS Chapter IEEE Kerala Section), Dr. Apren. T. J (President R&D center NeST Group Trivandrum), and Dr. Premlet. B (Chair, Educational Activities IEEE Kerala Section). After the inauguration the talk of each guests starts. Dr. Chinmoy Saha took the talk on "Recent trends and opportunities in Antenna and EM research", it was an inspiring talk, most of the students got an idea about working of antenna and growth of antenna era. Then Dr. Apren T J took the talk on "Challenges in Space Communication", The talk was completely related on ISRO, the talk helped the students, what knowledge requires to get into the ISRO industry. The last talk was taken by Dr. Premlet. B on the topic "Quantum mechanics of Nano technology", the talk was more interactive, and the response was good. The event ended up on 3pm. 33 IEEE members and 57 non-IEEE members participated in the event.

### **16. Industrial visit to Load dispatch centre Kalamassery by IAS SBC Musaliar engineering college Chirayinkeezhu on 23<sup>rd</sup> March**

Industrial visit to Load Dispatching Center, Kalamassery was jointly organized by IEEE Student Branch and IAS SB chapter Musaliar Engineering College Chirayinkeezhu on 23<sup>rd</sup> March 2019 in association with IA/IE/PEL Jt.Chapter Kerala. The visit shows how well the power is distributed to the residence, factories, and also shows how the parameters travel around the stations and getting those values without any distortion. 25 IEEE Student members & 4 faculty members joined the trip. The visit was in the forenoon. After the visit, the students were taken to a nearby Lulu mall and marine drive. In marine drive they had a boat trip also. In the next day, the students were taken to the Ernakulam hill palace and around the Mattancheri. The students enjoyed the trip.



Fig. Group photo

## 17. ELEKTRA 2019 from 5-7 April 2019

A 3 days technical summit 'ELEKTRA 2019' was held at College of Engineering Munnar from 5-7 April 2019. The event was coordinated by Department of EEE in assn. with PES & IAS SB chapters of the College co-sponsored by IA/IE/PEL Jt. Chapter. The event was inaugurated on 5th April, by Mr Jabir Mudambra, Electrical inspector, Idukki District.

Mr Jabir Mudambra talked about the advancements in electrical engineering in modern days in his inaugural address. It was followed by a technical session by himself on the topic 'Electrical Safety'. The technical session was followed by an ice breaking session which made the delegates more comfortable and relaxed. The programmes of the first day ended up with a campfire in the evening followed by the dinner.

The proceedings of the second day started with an industrial visit to Solar Powered Microgrid, Marayoor and Hydro Electric Power Station, Mattupetty. The delegates were shown the operations of the plants and control rooms by the staff. There were 2 parallel workshops scheduled in the afternoon from 1.30 PM to 5.00 PM. The workshops were Installation of Solar PV systems and Blockchain. The workshops were handled by experts from the respective fields. It was followed by a session on the topic 'Battery Designing and Management in Industrial Area' By Er. Ani Thomas, Area Manager, Exide Industries Limited. Cultural programmes were presented by both external and internal delegates in the evening. The second day ended with a dinner thereafter.

The third day programmes started with a sunrise trekking. It was one of the major attractions of the event and made the joy of the delegates in its peak. The trekking was followed by a session on 'Entrepreneurship' by Er. Sonia Mohandas, CEO, Waferchips techno solutions. There was an another technical interacting session on the topic Artificial intelligence in IOT taken by Er. Archu S Vijay, CTO, Waferchips techno solutions. The last session was a technical talk on 'Basics of Control and Protection of Power System' by Dr Krishna Kumar, Assistant Engineer, KSEB. The delegates were given basic awareness on power system



protection during the session. It was followed by Valedictory function and feedback session. The 3 day programme ended up with a lunch and a photo session. The 3 day technology summit received appreciations from all delegates in terms of the quality of the various sessions, industrial visit, trekking, internship drive and the conduct of the event. The IEEE members and volunteers of SB Chapter were immensely satisfied in the way the event was organized, and it is decided to conduct the programme in the future also.



Fig. Group photo

24 IEEE members and 67 non-IEEE members participated in the programme.

## 18. PELS Day celebrations on 20<sup>th</sup> June 2019

IA/IE/PELS Jt. Chapter Kerala organized an industrial visit to KELTRON, Karakulam, Trivandrum on 20<sup>th</sup> June 2019 as part of PELS day celebrations. 28 IEEE IA/PELS/IES members from different engineering Colleges participated in the visit. A vehicle was arranged from Kollam for the purpose. Few students from far away places came by train and joined the I V team. The trip started from Kollam at 8.15 am and reached Karakulam by 10.00am. After the visit, a cake cutting ceremony was also done as part of the PELS day celebrations all over the world.



Fig. Group photo of participants

## **19. Organizing committee meeting of PESGRE2020 on 28<sup>th</sup> June at Trivandrum**

The meeting was organized by IA/IE/PELS Jt.Chapter Kerala.

The meeting started at 11 am. The decisions are:

1. It is decided to open the bank account with internet banking facility as soon as possible at IOB Trivandrum. It is decided to get the duly signed MOU amendment from IEEE Kerala Section office bearers during TENCON committee meeting at Cochin for this which is to be submitted to the bank as early as possible. Mr. Biju, the financial chair of PESGRE2020 has agreed to complete this by the first week of July 2019.
2. It has been decided to use a professional registration cum payment gateway for PESGRE. As there is already existing an MOU between YEPDESK and IEEE Kerala Setion, it has been decided to use the same system for PESGRE also.
3. It is expected that PESGRE2020 is expected to have around 600 papers for review. So far, we has received 11 papers only. It is decided to send email blast to all IAS society members and members under India council. Dr. Suresh Nair is to be contacted for sending e-notice to all IEEE members in India. Mr. Biju has been entrusted with this.
4. It has been decided to expand the technical program committee by including more members as technical program chairs. In the paper management site, all the technical program chairs will in fact be acting as meta reviewers. Dr. Sudharshan Kaarthik has been entrusted to coordinate the technical program.
5. The budget of PESGRE is estimated as Rs. 30 Lakh, targeting 250 registrations. It is decided that every accepted paper requires one full registration for publication. However, in the case of a second paper by the same author, the committee decided to offer 50% discount in the registration fees for the second paper. In this case, one of the co-authors may be offered free registration to attend the conference. The same kind of discount will be offered for more number of papers by the same author. It is also decided that for conference +tutorial, the amount will be conference Regn. fee+Rs.500 only. For tutorial alone, the registration fees will be Rs.1000/-.
6. The committee estimated that a sponsorship amount of Rs.15 Lakh may be needed to have a very good conference programme and the committee requested the sponsorship team to start their activities as soon as possible. The sponsorship committee is requested to approach potential industries and establishments like Kerala Technological University for sponsorship. Dr. Bobby Philip has been requested to coordinate this.
7. There are four keynote speakers so far- Dr. Tomy Sebastian (Halla Mechatronics, USA and immediate past president of IAS soiety), Prof. Wang Peng (NTU Singapore), Prof. Kashem Muttaqi (University of Wollongong, Australia), and Prof. Biplab Sikdar (NUS Singapore). We expect Prof. Frede Blaabjerg (AlborgUniversity, Denmark) also join as a keynote speaker. There are so far three tutorial speakers also- Prof. Prasad Enjeti (Texas A&M, USA), Prof. Krishna Vasudevan (IIT Madras) and Dr. Dineshkumar (Danfos, Denmark). Dr. Anad Satyan (LG, USA) may also join as a tutorial speaker/industry session speaker. For the PELS young professional programme (YPP), Prof. Sanjib Panda (NUS Singapore) will be one speaker. The committee approved the list of speakers. The IAS YPP will be decided later by the IAS CMD. Mr. Srikanth and Dr. Akshay Rathore are entrusted with the IAS YPP.

8. A four page brochure of the conference needs to be released as soon as possible. The committee entrusted Dr. Jaison Mathew and Mr. Biju to do this for the publicity committee. The ministry approval requests need to be sent once the brochure is ready.
9. Twenty rooms have already been booked for 2nd and 3rd Jan 2020 at LeMeridian Cohn for PESGRE2020. In addition to these rooms, the committee decided to block 5 rooms for PESGRE2020 for 1st and 4th Jan 2020.
10. The website needs to be updated with tourism information. Also, scrolling display of speakers on the home page is desirable. Mr. Biju is requested to take necessary steps to update the website.
- 11 IEEE members participated in the meeting.

## **20. Membership drive at College of Engineering Chengannur on 7<sup>th</sup> July**

IEEE Industry Applications Society Student Branch Chapter College of Engineering Chengannur in association with IA/IE/PEL Jt.chapter Kerala organised a membership development session on 7<sup>th</sup> July 2019, Sunday. The session was handled by Mr. Nebic J Johnson, Chairman-IEEE Industry Applications Society Student Branch Chapter College of Engineering Chengannur. Students belonging to different colleges in Kerala were present in the session. The students were given a brief introduction about IEEE Industry Applications Society and the innumerable benefits offered by IEEE for its members. The need for a student branch chapter and the corresponding activities were reviewed. He then shared his experience about various opportunities IEEE had offered him. The students were also made aware about IEEE resources like IEEE Spectrum, IEEE Xplore Digital Library, IEEE magazines etc. Mr. Nebic J Johnson then advised the students to take an initiative to start an IEEE Industry Applications Society Student Branch Chapter at their respective colleges. The session was a resounding success and has resulted in many non - IEEE members showing high interest in joining IEEE as well as IEEE Industry Applications Society. 15 IEEE members and 34 non-IEEE members participated in the programme.



Fig. Mr. Nebic Johnson taking the MD session



## **21. 5 Days Internship on Solar PV Power Plant at TKMCE Kollam from 17-23 July 2019**

The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala.

### **DAY 1 (July 17<sup>th</sup>)**

The Inauguration of the internship began auspiciously at 9:30 am with a silent prayer. IEEE Code of Ethics by Ms. Nandini J.Nair, Vice Chair IEEE IAS SB TKMCE. The welcome speech was given by Dr. Bijuna Kunju K, HOD EEE, TKMCE followed by presidential address by Prof. Imthias Ahmed T.P of EEE department. Mr. C.M. Varughese, director of IGATECH Kochi delivered the inaugural address. Mr. Hari Prasad gave a talk on the PELS membership drive and the meeting ended with a vote of thanks by Ms. Laya Raj, the WIE coordinator of Travancore Hub. After a tea break, the internship began in full swing starting with theory session on basics of solar system by Mr. C M Varughese.

In the AN, the delegates were sorted into 5 different groups, each group lead by a captain. Practical session on designing of a power plant for your home was conducted in the DC Machines Lab, TKMCE. The delegates were guided by Mr. C M Varughese. After a short break Mr. William Joseph took a theoretical class on the classification of PV power plant and block wise description.

### **DAY 2 (July 18<sup>th</sup>)**

The morning session was on the design of commercial Solar PV power plant by Mr. William Joseph. After a tea break, Mr. Sudev conducted a class on types and selection of PVs and inverter with the aid of powerpoint presentation. Afternoon session was conducted by Mr. C M Varughese on the familiarization and identification of parts of a solar plant and the evening session was on solar battery types and sizing. The last two sessions were held in the Electrical Machines Lab. The delegates were made to understand the parts and working of a solar plant using the experimental setup arranged in the lab



Fig. Live demonstration

### **DAY 3 (July 19<sup>th</sup>)**

The morning session on the civil construction, structure and tracking of Solar PV power plant

was taken by Mr. William Joseph. A brief introduction to energy auditing was also given to the delegates as it is the first step in identifying opportunities to reduce energy expense. It was followed by forenoon session on safety at sight and personal protection. Afternoon session was conducted by Mr. C M Varughese on the simulation of Solar PV Software PVSyst which enables quick estimation of production at project planning stage, detailed study, sizing, hourly estimation and report generation. The evening session was on solar inverters – types and selection by Mr. Sudev. The delegates used their laptops for the simulation of Solar PV Software. All the sessions were conducted in the Electrical Seminar Hall. Day 4 & 5 (July 22 & 23) were conducted at EGET Kochi.



Fig. Group photo

19 IEEE members and 14 non-IEEE members participated in the programme.

## 22. 5 Days Internship programme at Kochi from 24-28 July

The internship programme was of 5 days, conducted on a topic “Solar PV Power Plant” from 24<sup>th</sup> July to 28<sup>th</sup> July, 2019 at Ever Green Energy Technologies(EGET), Kochi. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. Theoretical sessions, Practical sessions, Simulation sessions, Designing sessions, Energy Auditing and other sessions were conducted along with Industrial Visits to Cochin International Airport Limited, Kochi and IGA Tech Industries, Kochi. It was organised by IEEE IA/IE/PELS Jt. Chapter Kerala in association with IGA Tech Industries and EGET, Kochi. The inauguration began auspiciously at 4.30 pm with a silent prayer lasting for a minute. It was followed by reading out IEEE Code of Ethics by Mr. Sarath Chandran (Electronics Communication Coordinator, IEEE IA/IE/PELS Jt. Chapter Kerala). The welcome speech was delivered by Er. C M Varghese (Chair- Industry Relations Director, IEEE IA/IE/PELS Jt. Chapter Kerala). He had mentioned about the future of solar energy and the course details. The inauguration was done by Dr. Suresh Nair (Immediate Past Chair, IEEE Kerala Section), followed by lighting up the lamp. He explained about the importance of IEEE in the society and internship programmes. Mrs. Alice Antony (Managing Director, EGET) and Er. Anandhu S Kumar (Student Branch Chapter Coordinator, IEEE IA/IE/PELS Jt. Chapter Kerala) did the felicitation. Followed by that, Mr. Nebic J Johnson(Student Coordinator, IEEE IA/IE/PELS Jt. Chapter Kerala) led a membership development session on IEEE PELS, explaining member benefits, formation, activities and other details of IEEE and IEEE PELS. Non-IEEE delegates from Providence College of Engineering Chengannur have decided to form a Student Branch and a PELS Student Branch Chapter in their institution.



The registration was started at 9.30am and lasted for 1 hour. The event started with a session by Er. C M Varghese (CEO, EGET) on the basics of solar system and PV Power Plant as the morning session with having a tea break in between. After 1.15pm, lunch was given to delegates. The afternoon session was led by C M Varughese wherein the delegates were familiarised with the different instruments used in a Solar PV Power Plant. The delegates were taught to measure the specified quantities and the calculations based on it. The inauguration of the event was done at the evening by Dr Suresh R Nair.

The day 2 started with a session led by Dr. Nikhil P G (Former Scientist, National Institute of Solar Energy). He explained various aspects used in Solar PV Power Plant and did some group activities. The delegates were divided into 5 groups having 5 people as strength. They were given tasks to study a given case study happened once in the world and asked to make a chat presentation on that. Groups were restructured in such a way that each person in each group understood the problem and solution in each case. They were taught to calculate the profit they would gain after installing plant at the house. Commercial designing was also done. After designing, a theoretical session on Types and Selection of PVs and Inverter is led by Sudev D. After leaving for lunch, practical session on types and Selection of PVs and Inverter was done. The day was ended up with simulation session, conducted using PVsyst software.

The day 3 started with the familiarisation of parts of Solar PV Power Plant by Sudev D. The delegates were divided into several groups for the familiarisation sessions. A session on safety and precaution measures to be undertaken at site while working in a Solar PV Power Plant personally as well as on dealing with the equipments were taken by Annie James. The afternoon session was handled by C M Varughese wherein the delegates were asked to identify the familiarised parts of a Solar PV Power Plant and arrange it in a required manner. The day 3 was ended up with a session on the various types and sizing of Solar batteries.

The day 4 started with the first phase of the Industrial Visit to Cochin International Airport Limited, the first fully solar powered airport in the world, wherein all the delegates were overwhelmed with a panoramic view of a 14.4 MW ground mounted, grid connected photovoltaic power station. An overview of the details of the project were given. The daily data estimations with the help of SCADA monitoring were clearly explained along with the total output energy, weather forecasting data, plant performance data and many more. The delegates were given a clear cut idea of the operations involved in monocrystalline modules, string inverter, SMPS and the connections of the string type photovoltaic cells installed in CIAL. They were able to observe the various pyranometers placed at different places of the plant.

After the completion of the Industrial Visit, the delegates were taken back to Ever Green Energy Technologies Ltd. Kochi for the lunch. After lunch, a practical session on Solar Installation and commissioning was led by Akhil (Solar Consultant, Kochi Metro). The day 4 ended up with a practical session by Sudev D, on the operations and maintenance of Solar PV Power Plant installed there.



Fig. Group photo near CIAL PV panel installation

The day 5 started with the session on Energy Auditing, Site study and optimisation technique by G. Krishnakumar. The different aspects involved in the various levels of energy auditing were well explained with PowerPoint presentations. The stages included in energy auditing of a site and its optimization techniques were also described in a well clearly manner. The delegates were taught to analyse the different levels of reports and costs effectiveness on Energy audits. The session was followed by a test which included general areas of interests in interviews and the topics covered in the whole internship. The day 5 got soon ended up with lunch since a majority of the delegates have to travel a long distance to reach their places. 12 IEEE members and 14 non-IEEE members participated in the programme.



Fig. Group photo inside the lab

### **23. Distinguished lecture organized by IAS SBC IIST at IIST Trivandrum on 31<sup>st</sup> July**

IEEE Student Branch IIST in association with IA/IE/PELS Jt.chapter Kerala organized an expert talk on ‘Design Steps for Power Electronic Convertors’ on the 31st of July 2019. The expert talk was given by Prof (Dr). H. M. Suryawanshi, Professor in the Department of Electrical Engineering, Visvesvaraya National Institute of Technology, Nagpur (India) and Chair Professor of Indian National Academy of Engineering (INAE). The program started around 3:00 PM. The secretary of IA/IE/PELS IEEE Kerala Section Mr. Biju K was present on the occasion. G. Srikara Reddy, Mtech Power Electronics Student, IEEE Member,

Avionics Dept. I.I.S.T welcomed the guests and participants to the program. The technical talk covered the topics such as specification of converters, selection of power semiconductor switches, selection of magnetic material, design of snubber circuit and heat sink, design of gate driver circuit, different topologies of converters and closed loop control. In addition to this Prof (Dr). H. M. Suryawanshi had described the research that is done on converters in VNIT Nagpur. The program was concluded at 4.30 p.m. Total 30 participants attended the workshop out of which 11 were IEEE members. Participation certificates were distributed at the end of the program.



Fig. Prof (Dr). H. M. Suryawanshi giving the expert talk



Fig. Audience during the technical talk

## 24. One day Workshop on at TKMCE Kollam on 5<sup>th</sup> August 2019

Continuing with the belief that technical education shouldn't be limited to classroom sessions, IEEE SB TKMCE Unit has conducted a talk on the topic - **'Health-conscious Fast Charging**

**Strategies and Battery Management Systems for Electrified Autonomous Transportation'** at TKM College of Engineering, Kollam on 5th of August 2019. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. It had been presented by Prof. Sheldon S. Williamson associated with the Ontario Tech University, Canada who holds the prestigious NSERC Canada Research Chair position in electric energy storage systems for transportation electrification. About 59 undergraduate students from various colleges took part in the workshop among which 10 of them were IAS members. The session began at 9:30 am and longed till 3:30 pm. The technical talk was split into 4 sessions as pre-planned by Prof. Sheldon.

Session 1: Smart Power Electronics Based Active Battery Energy Management Systems for Electric Transportation

Session 2: Novel Power Converters for DC Fast Charging

Session 3: Integrated PV/Smart-grid Based Charging Applications

Session 4: High-Efficiency, Wireless Fast Charging Concepts and Methodologies



Fig. Group photo

13 IEEE members and 24 non-IEEE members participated in the programme.

## **25. Industrial Applications Society (IAS) Amal Jyothi College of Engineering Student Branch Chapter Inauguration on 6<sup>th</sup> August 2019**

Amal Jyothi College of Engineering Kottayam in association with IAS/IES/PELS Joint Chapter Kerala organized the inauguration of its most recent Student's Chapter Industry Application Society (IAS) on 6th August 2019. IEEE has inveterate itself as the famous professional body for being the largest technical professional organization and Amal Jyothi has established it's own IEEE Student Branch adeptly.

Industry Application Society is an organization linked mainly with electrical and electronics engineering specialization. Bringing advancements in energy conservation, manufacturing and design of apparatus, safety and economic installations in the electrical field is what has been this organization's motive and is what it will continue doing in the years to come. The Chief Guest for the morning was Dr. Sheldon S Williamson from Ontario Tech University in Canada. Dr. Sheldon is distinguished Research Chair of NSERC and has an unbridled experience in the electric energy, transportation and power discipline.



The inauguration ceremony was followed by a keynote address by the chief guest Dr. Sheldon S Williamson who took this opportunity to take an informative and engaging session about the advancements being made in the field of fast charging strategies and battery management systems. The students from various branches of engineering attended the session and was thrilled to ask questions and further clarifications on the topics being discussed



Fig. IAS Chapter inauguration

18 IEEE members and 54 non-IEEE members participated in the programme.

## **26. EV workshop at Saintgits engineering college Kottayam from 30-31 August**

The IEEE IAS SBC Saintgits college of Engineering in association with IEEE IA/IE/PELS Jt. Chapter Kerala conducted 2 day Proficiency Programme on "ELECTRIC AND HYBRID VEHICLE ENGINEERING" on 30 and 31 of August 2019. The programme was sponsored by IEEE Industry Applications Society. Dr.Pinkymol K.P (IEEE IA/IE/PELS Jt. Chapter Kerala Excom Member) and Mr.Abraham George (Counselor- IEEE SBC Saintgits) and Mr.Aravind Anil (Chair-IEEE IAS SBC) were the coordinators. The course was aimed to enhance the academic and professional skills of students, faculty members and other professionals. This workshop contained theory modules, practical and demo sessions to understand EV design and architecture which was followed in EV industry. Mr. P Prasanthkumar from Haritha TechLogix Pvt.Ltd , Bengaluru handled the training sessions. The main objective of the workshop was to give a brief overview about the electric and hybrid vehicles design and currently used technologies in the field. Modeling and simulation studies of Electric & Hybrid vehicle were performed in MATLAB/ SIMULINK environment. Case studies on the state-of-the- art technologies used and the improvements made in the design of both electric and hybrid vehicles were studied by taking examples from Chevrolet, Tesla, Toyota etc.

The training programme was attended by 20 IEEE and 40 non-IEEE members which includes participation from 7 external colleges in Kerala. Prof.Biju K IEEE IA/IE/PELS Jt. Chapter Kerala, Secretary has also attended this two-day training programme. The participation details are given below.





Fig. Group photo

## 27. Workshop on Design of Power Electronics Products at CET on 21<sup>st</sup> September 2019

IEEE EA section Kerala, LMAG, IEEE IA/IE/PELS Jt. chapter Kerala and IEEE IAS SB chapter CET jointly organized and conducted a one day Workshop on Design of Power Electronics Products for engineering students on 21<sup>st</sup> September 2019, Saturday, at College of Engineering Trivandrum.

The session was handled by Dr. Madhu Mangal, vice chair, LMAG Kerala Section. He has over 40 years of experience in R&D and Engineering in the field of Power Electronics, as Head of R&D of Industry and as Head of Government R&D Institutions. Presently he is Chief Consultant in Power Electronics for Advanced Rail Controls Bangalore. He is Life Senior Member, IEEE and Fellow, Institution of Engineers (India). The function began with a welcome speech by Akshay PL, Chairperson, IAS IEEE SB CET. He welcomed Dr. Madhu Mangal, vice chair, LMAG Kerala Section, Prof. Biju K, Secretary IEEE IAS Kerala Section, Dr. Bijuna Kunju, vice chair, IA/IE/PELS Jt. chapter Kerala section, and participants to the session.

Then Dr. Bijuna Kunju, Professor, vice chair, IA/IE/PELS Jt. chapter Kerala section delivered the inaugural address. Dr. Bijuna took pride in being associated with IEEE and extended her support to IEEE IAS activities. She encouraged the students to utilize the workshop to the most and make innovations using it. It was followed by program overview by Dr. Madhu Mangal, vice chair, LMAG Kerala Section. Sir briefed about power electronics, its applications and its future scope. The workshop started with an introduction to power

electronics and power electronics products. A lecture was given about what is power electronics, power electronics products and various power converters.

The second part of session was about UPS systems. It started off with an introduction to UPS systems, followed by Why UPS systems and its evolution. A lecture was given about evolution of UPS systems and UPS topologies. The third quarter of the workshop focused on design of UPS system. Here, UPS system specification and topics related to design were covered. The topics covered included static switch devices,output filters,inverter power devices,DC link capacitor,battery bank and rectifier power devices.

The workshop session came to an end by students solving a given task. An exercise on design of power electronics products was given to the participants, which they had to do.The ideas and solution were discussed in the end. A great response was obtained from the participants. The participants who were final year students found the workshop very useful to do their main project. The participants shared they got a new insight about power electronics. They found the topic very interesting after attending the workshop as it focused on how power electronics can be applied for enhancing and betterment of our current technologies and as the session wasn't confined to just the theoretical concept which were obtained from books. In short, students gained a better knowledge about power electronics and its products which would help the participants in making their innovative ideas into reality. The workshop ended around 4pm.



Fig. Group photo

11 IEEE members and 17 non-IEEE members participated in the programme.

## **28. IAS ANNUAL MEETING 2019 at Baltimore USA from 29 September-03 October**

6 members from IA/IE/PELS Jt.Chapter Kerala attended IAS ANNUAL MEETING 2019. The chapter received 4 awards in the meeting. Most happening chapter award, web contest award, Design contest award, and Robotic contest award. Prof. Biju K, Mr. Akashay Krishanan, Mr. Abhay, and Ms. Meghna represented the chapter.

## **29. PESGRE2020 Conference Committee held on 19.10.2019 at Grand Hyatt Kochi**

**Date:** Oct 19, 2019 at Hotel Grand Hyatt, Cochin, during TENCON2019

**Time:** 11AM-1PM

The programme was organized by IA/IE/PELS Jt.Chapter Kerala.

The meeting started with welcome address by Mr.Biju K, Finance chair. The minutes of the previous meeting was read out and approved with minor modifications. The following decisions were taken.

1. PESGRE2020 has so far received 475 papers. Each paper needs to have minimum two reviews. All the papers were sent for review. We have already completed the review of papers by foreign authors (52 papers from 17 different countries including India) and the result was announced on the scheduled date itself (1 Oct 2019). We have selected 40 foreign papers after a rigorous review process and 12 papers got rejected. We have opened the registration link also. Considering the additional requirement of halls, we have blocked additional halls at Le Meridien.
2. It has been decided to limit the number of papers by an author that can be registered with discount rate in one buyer ticket to four papers. From fifth paper onwards by an author, the same registration process should be repeated.
3. Since "Explara" event ticketing platform offered better international payment gateway charges compared to YepDesk (3% against 3.8%-5%), Explara has been selected for registration. The committee ratified the decision. Mobile app for the conference can be decided later depending on the number of registrations.
4. It is decided to follow up with the bank to enable internet banking facility as soon as possible. Mr. Biju K, the financial chair of PESGRE2020 has agreed to complete this soon.
5. It was decided to start a sponsorship campaign soon. The target is Rs. 15 Lakhs. The committee appointed the sponsorship chairs Er. C M Varughese and Dr. Boby Philip for this. The sponsorship committee has been expanded by including Dr. Rajesh M V (Model Engg, college), Dr. Bijoy Jose and Er. Shahim Baker. It has been decided to approach major firms in Kerala in-person for sponsorships. Er. C M Varughese will lead the sponsorship activities in Cochin area.
6. It has been decided to follow up with the IAS and PELS societies for YPP events
7. The conference Kit and event management including hall arrangements will be decided in the next meeting after early bird registration deadline is over (Nov 10)
8. It has been decided to prepare book of abstracts similar to pedes2016's book of abstract. The content will be prepared by the publication team.
9. It has been decided to update the website with tourism information.
10. Fifteen student volunteers who are IAS/IELS/PELS student members are identified as student volunteers for the conference. The committee suggested to arrange accommodation for them in nearby hotels/Metro station dormitories.
11. Low cost accommodation facilities for students need to be identified soon. Similarly, different classes of hotels need to be identified and announced in the website as soon as possible. The hospitality committee has been entrusted with this.

The meeting concluded at 1 PM with vote of thanks by Dr. Jaison Mathew. 10 IEEE members attended the meeting.

### 30. TRIAC- A Two day Workshop on 26th & 27th October 2019

IEEE IA/IE/PELS Jt. Chapter, IEEE PES, & IEEE ComSoc Kerala Chapters jointly organized a 2 day workshop on relevant areas at Technical Revamping Initiative Aspired Concourse (TRIAC). The workshop was hosted by FISAT Engineering College, Angamaly on 26th & 27th October 2019. Four workshops namely

1. Prathijwa[- an illumination technology based workshop cum Hackathon
  2. Yanthra – a robotic based workshop cum Hackathon
  3. Saurorja – a solar based workshop cum Hackathon
  4. Vitantu Sanjara – a wireless SDR based workshop cum Hackathon
- were conducted.



Fig. Group photo of participants

85 IEEE members and 134 non-IEEE members participated in the programme.

### 31. Evensia 2.0 Technical symposium at CE Munnar from 26-27 October

Technology has advanced through time which has increased the need for faster updation of technology in our day to day life. As the world has been providing us with vast areas in the field of technology we are here to help you on gaining the skills required for the upcoming world. IA/IE/PEL Jt.Chapter Kerala in association with IEEE student branch College of Engineering Munnar organized 'Evensia', a technology summit from 26-27 October 2019.

#### 1. Session 1

Aathira M a person who has shown an outstanding performance in the field of volunteering in IEEE. She is the current R10 Lead for IEEE Extreme. She explained to the delegates about the importance of IEEE and Volunteering in choosing a perfect career.

No of Participants: 55

#### 2. Session 2

Mr. Mobin K Eldho an officer who has shown exemplary performance in his field working with the Kerala Cyber Cell. He had explained to the delegates about the various threats they have to face in the virtual world. He also spoke about the various defensive measures that can be taken up in order to keep our data safe.

No.of participants: 55

#### 3. Session 3

Mr. Navaneeth K Nair he works at the Bank of Ballard's. He is also an Alumni of CEM. He is also a tech enthusiast interested in the fields of Machine Learning and Block chain. He discussed with the delegates about the uprising of Block Chain technology in the world via Crypto-Currencies and other technologies.



No.of participants: 55

#### **4. Workshop 1**

Mr Alfred Aloushy a photographer took the workshop on Mobile Photography. He taught the ways of editing a photo to make it better. He also taught about the colour grading on photos. He later on took an outdoor session which involved taking photos on Mobile Phone and later on editing them.

No.of participants: 24

#### **5. Workshop 2**

Mr. Navaneeth K Nair conducted a workshop on Machine Learning .He taught the delegates about the applications and usages of the same. The workshop involved teaching machine learning from the basics in java script. The workshop taught all the delegates on how to use basic Machine Learning functions.

No.of participants: 21



Fig. Ms. Athira M during her talk

Total participants for the event:

IEEE members: 21

Non-IEEE members: 32

### **32. SDLP by IAS SBC NSSCE Palakkad on 31<sup>st</sup> October 2019**

Time: 9.00 AM - 12:30 PM

Venue: e-One Hall, NSS College of Engineering, Palakkad. IEEE

IEEE Members Attended: 43, Non- IEEE Members Attended: 22

The Section Distinguished Lecture Program was conducted by IEEE IAS Student Branch Chapter NSS College of Engineering, Palakkad in collaboration with IEEE Kerala Section and IA/IE/PELS Jt.chapter Kerala on 31st October 2019. The half-day session was handled by renowned speaker Dr. Deepak Mishra, Department of Avionics, IIST Thiruvananthapuram. The Inaugural function started with a prayer. IEEE Code Of Ethics is conveyed by Abhinav Rajeev, Chairman, IEEE SB NSSCE. Welcome address Associate Professor Dr. Vasanthi V Advisor, IAS SBC NSSCE. Presidential address by Principal, NSS College Of Engineering Palakkad. Program officiall inaugurated by Dr. Deepak Mishra. Felicitation by Assistant Professor Vijitha S Branch Councillor, IEEE SB NSSCE.



Finally inaugural function ended with Vote of Thanks Ajith M, Chairman, IAS SBC NSSCE. The distinguished lecture program was on Machine Learning, which is very prominent as far as technical education is concerned. About 65 students attended the session. Among them, there were IEEE IAS student members of NSS College of Engineering and Ammini College of Engineering. The lecture was worth attending in which topics like Neural Networks and Deep Learning were covered.



Fig. Inaugural Speech by Dr. Deepak Mishra

After attending the session we could analyse the scope of deep learning and neural networks in machine learning. The lecture started with deep learning, how the machine processes two similar images and distinguishes the two, such as a Barn owl and an apple. We could also understand that Mathematics, especially probability and statistics are indispensable in learning the concepts of deep learning.

As we all know, probability is the science of quantifying uncertain things. Most of machine learning and deep learning systems utilize a lot of data to learn about patterns in the data. Whenever data is utilized in a system rather than sole logic, uncertainty grows up and whenever uncertainty grows up, probability becomes relevant. Due to this fact, concepts like Bayes decision theory and Nearest Neighbour Classifier were discussed. Bayes decision theory mainly focuses on Posterior probability which says which class is more likely to happen. Bayes classifier minimises error. But in the case of Nearest Neighbour classifier, there is no statistical view point, hence the error in Nearest Neighbour is twice than that of Bayes classifier.

Another concept discussed was discriminant function. Professor also explained that neural network is an example for Non linear discriminant function. A simple iterative algorithm called Perceptron Learning algorithm which comes under linear classifier was discussed as well. It was also informed that the most basic principle in neural network was inspired from the working of the human brain and single neuron model in turn from Perceptron theory. At the end of the session all the participants could understand the important concepts of machine learning. The session ended with the feedback from the students. As token of appreciation Dr. Leesha Paul, Ex- Student Branch Councillor presented memento.



Fig. SDLP concluded with a Photo Session

### 33. PESGRE2020 Conference Committee held on 16<sup>th</sup> November 2019 at Board Room, Hotel Sarovaram Kochi

Time: 6.30 PM-8.30 PM

The meeting started with welcome address by the IA/IE/PELS Kerala chapter chair, Prof. Muhammed Kasim. The minutes of the previous meeting was read out by the conference general chair, Dr. Jaison Mathew and the minutes was approved by the committee. The following decisions were taken.

1. PESGRE2020 has 292 paper registrations and 265 attendee registrations after the early bird deadline (15 Nov 2019). The total revenue so far is Rs. 29.5 Lakhs (excluding GST). It is expected that the paper registrations would be crossing 300 numbers soon. There are representations from 15 countries (including India).
2. The finance chair Mr. Biju K reported that internet banking is difficult with the present type of account. Therefore, it has been decided to operate bank account based on cheque. It is decided to follow up with the bank to get cheque book as soon as possible. Also, GST payments need to be done through Kerala section. Mr. Biju has been entrusted with these activities.
3. The finance chair presented a tentative budget of the conference (attached). It was felt that sponsorships will decide the financial health of the conference and serious attempts need to be made to attract sponsorships. So far only two sponsorships have been materialized (CDAC- Rs. 1 Lakh and Opel RT- 0.5 Lakh). Therefore, it was decided to start a sponsorship campaign as soon as possible with a target amount of Rs. 15 Lakhs. It has been decided to approach major firms in India for sponsorships. Er. C M Varughese and Dr. Bobby Philip will lead the sponsorship activities from Cochin and Trivandrum respectively.

4. The visa invitation letters need to be issued as soon as possible. PESGRE2020 has received "no objection" letter from ministry of home affairs. However, "Political clearance" letter from ministry of external affairs (MEA) is still pending. Proper follow up may be needed to get clearance from MEA.
5. There will IAS/PELS YPP event and SPAA event on the sidelines of the conference organized by IAS/IES/PELS Kerala chapter for the benefit of young members. Mr. Biju K reported that there is shortage of fund for the joint YPP program. The committee sanctioned up to Rs. 20000 for expenses in connection with the joint YPP program of IAS and PELS society.
6. Suitable conference kit and mementos need to be identified. Likewise, action need to be taken for printing of badges, certificates etc. The committee recommended items like water bottle and pens instead of pen drive and plaques. The conference proceeding may be made available in 'cloud servers' rather than in USB pendrive to reduce cost.
7. The conference schedule and matter for book of abstracts need to be prepared once the registrations are over. The presenter details need to be collected also. Dr. Jaison Mathew, and Prof. Divya N A have been entrusted with these activities.
8. It has been decided to request Prof. Wang Peng to do the inauguration on 3rd Jan 2020 FN followed by his inaugural keynote. Publicity to the conference may be given through printed media by arranging a press conference.
9. The committee discussed about hospitality for delegates and speakers, accommodation and transportation. Since the hospitality to delegates will be a major factor in deciding the future of PESGRE, special care needs to be taken regarding hospitality of delegates. The hospitality committee has been urged to take necessary steps.
10. It has been decided to get quotations from different event management firms to arrange audio/projectors/backdrops etc. Further negotiations may be needed to reduce the rates.
11. Since "iTec India conference" (Dec 17-19, 2019 at Bangalore) is a major IEEE conference organized by SAE India, ARAI, and IAS society where a large number of Industries would be participating, the committee appointed the General Chair and Finance Chair to attend iTec India conference to explore the possibility of getting more sponsorships and delegate registrations for PESGRE2020. The committee sanctioned an amount of Rs 25000/- in connection with the expenses including registration, travel and accommodation.
12. Prof. Muhammed Kasim informed that free promotional code for IES membership for the year 2020 is available. Since the volunteers and organizing committee members need to be either IAS, PELS or IES members, the free promotion code will be useful for volunteers and organizing committee members. The promotion code will be announced through proper channels soon. The committee suggested that the number of volunteers used should be a minimum. Also, low cost accommodation facilities for the volunteers need to be identified soon.

The meeting was concluded at 8.45 PM with vote of thanks by Dr. Jaison Mathew. 11 IEEE members attended the meeting.

### 34. Steering Committee meeting of AKIASSC 2020 on 18th December

A meeting was held at UKF College of Engineering on 18th December with all IEEE entities. Prof Muhammed Kasim & Dr. Bijuna from Jt. Chapter attended the meeting. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. 10 IEEE members attended the meeting.



Fig. Group photo

### 35. Solar water heater installation (Humanitarian activity) at Nedumpana, Kollam on 22<sup>nd</sup> December.

A 250 L solar water heater was installed at Navajeevan Abhaya Kendram, Nedumpana, Kundara. Navajeevan Abhaya Kendram is a charity organization for old aged, mental and sick ladies for whom nobody is there to look after. There were nearly 30 such orphans. Nearly 15 are bed ridden. The programme was conducted in association with IA/IE/PELS Jt.Chapter Kerala. 4 IEEE members and 5 non-IEEE members participated in the programme.





Fig. Solar water heater installation

### 36. Expert talk by Prof. Sukumar Kamalasadan at MEC Kochi on 31<sup>st</sup> December

An expert talk was conducted by IAS SBC Model engineering college in association with IA/IE/PELS Jt.Chapter Kerala. The speaker was Prof. Sukumar Kamalsadan, Director, Power Energy and intelligent systems lab, University of North Carolina, NC, USA. The topic was 'Advances in modeling and control methods of single phase and three phase inverters'. The talk started at 10.30 am and ended by 12.30 pm. 16 IEEE members and 15 non-IEEE members attended the programme.



Fig. Prof. Sukumar during his talk



## **AWARDS RECEIVED BY THE CHAPTER IN 2019**

1. Prof Muhammed Kasim S, Chair, IA/IE/PELS Jt. Chapter was awarded with Kerala Section outstanding Volunteer Award for 2018.
2. Prof Biju K, Secretary, IA/IE/PELS Jt. Chapter was awarded with India Council Outstanding Volunteer Award for 2019.
3. Prof Biju K, Secretary, IA/IE/PELS Jt. Chapter was awarded with Kerala Section outstanding Volunteer Award for 2019.
4. IA/IE/PELS Jt. Chapter won the IAS CMD web contest Award for 2019 (1<sup>st</sup> place).
5. IA/IE/PELS Jt. Chapter won the IAS CMD most happening award (3<sup>rd</sup> place).

## **SUMMARY**

The chapter organized various kinds of activities for the benefit of its members. The major activities include student conclave, distinguished lecture programmes, technical talks, workshops, internship programmes, industrial visits, WIE programmes, technical symposiums, humanitarian activities, membership development programmes, administrative meetings etc.