

The IEEE Student Branch College of Engineering Karunagappally in association with Industry Applications society aims at uplifting the students by organising a number of technical events .

The following are the Reports of the events organised by the Industry Applications Society student chapter of IEEE SB CEK in 2021.

Event 1

IEEE Report of Approachable Diagnosis Methods and Tools for critical diseases:rural & urban areas

IEEE Student Branch College of Engineering Karunagappally in association with the IAS Chapter conducted a virtual meet on **“Approachable Diagnosis methods and Tools for Critical Diseases: rural & urban areas”**, which was held under the guidance of Dr. Kalpana Chauhan, Assistant. Professor, Central University of Haryana. The symposium was organized on 20th of June 2021 at 6 PM.

Dr. Kalpana kick-started the meeting by introducing herself, and by defining the importance of technology in the health sector. She added that the current situation and dreary face of the pandemic is demanding radical renovations in technology, which is now greatly substantial in healthcare. She also mentioned several techniques applicable in pathology such as necroscopy, radiography, urinalysis, microscopic examination of tissues, haematological tests and anatomical pathology.

The participants were very enthusiastic throughout the session. Dr. Kalpana’s way of presenting the topics engrossed all our attention. It was an amazing session which included significant topics that must be discussed; absolutely beneficial.

Around 40 participants attended the session which was winding up by 7pm. We got a lot of positive feedback. Looking forward to organizing much more worthwhile sessions.



IAS Chapter Virtual Meet

Approachable Diagnosis methods and tools for critical diseases:rural and urban areas




Dr. Kalpana Chauhan

*Assistant Professor
Central University of Haryana
Mahendragarh*

 **Date:** 20/06/2021

 **Time:** 6:00 PM

Register at: [bitly/.ws/eg4Z](https://bitly.ws/eg4Z)

Contact 

Niyas: 7510758989

Varun: 6282808828

IEEE STUDENT BRANCH
COLLEGE OF ENGINEERING KARUNAGAPPALLY

Event 2

“WEBINAR ON COULD WOMEN SAVE THE WORLD?”

SUSTAINABLE DEVELOPMENT AND GENDER EQUALITY “

Gender equality and relevance of women in society are nowadays one of the burning topics for discussions. Earlier, women had no right for education, earn or even a life of their own, they were designed for someone else. But now things have slightly changed, a few of them raised their voice against this injustice and demanded gender equality. Most of the people have some misconceptions that women are mild and weak and they couldn't resist in a high pressure state. To clear up all these meaningless concepts and to give the idea of the actual power and potential of women **IEEE COLLEGE OF ENGINEERING KARUNAGAPPALLY** in

association with **IAS STUDENT CHAPTER** and **WIE** has conducted a webinar on the topic: **"COULD WOMEN SAVE THE WORLD ? SUSTAINABLE DEVELOPMENT & GENDER EQUALITY"**. The session was handled by **ENG. PIA TORRES**, TUCUMAN NATIONAL UNIVERSITY, ARGENTINA and also she is the IEEE IAS DIVERSITY & INCLUSION COMMITTEE CHAIR.

The session started at 7:00pm. At the beginning she introduced herself and also her activities, contributions etc. to IEEE, it took around 10 minutes. The actual session started at 7.10pm, it was about sustainable development, its principles, importance and goals. She elucidated each point briefly with her exceptional skill of creating the students' interest in the topic. After a 20 min discussion, she focused on the 5th goal of sustainable development that is gender equality.

She gave a brief introduction on the importance of equality of both men & women in our society. She emphasized on the point that both men & women are equally able to dedicate their valuable contributions. She inspired everyone who attended the meeting with her phenomenal ability of speaking. It was also a 20 min session.

The next 10 min was for a question answer session, where students asked their queries about the discussed topic and they were satisfied with appropriate answers by Pia. She interacted in a friendly manner with the students. The attendees were around 60 . The overall duration of the meeting was 1 hr. It was an astounding session which added more thoughts and ideas in our brimming brains.

CEK IAS Society of Engineers Women in Power IEEE

Talk on
"Could women save the world? - Sustainable Development and Gender Equality"

29
MAY 2021
7 PM IST

bit.ly/Talk_women_equality

Varun- +91 62828 08828
Niyaz- +91 75107 58989

Speaker
Eng. Pía Torres

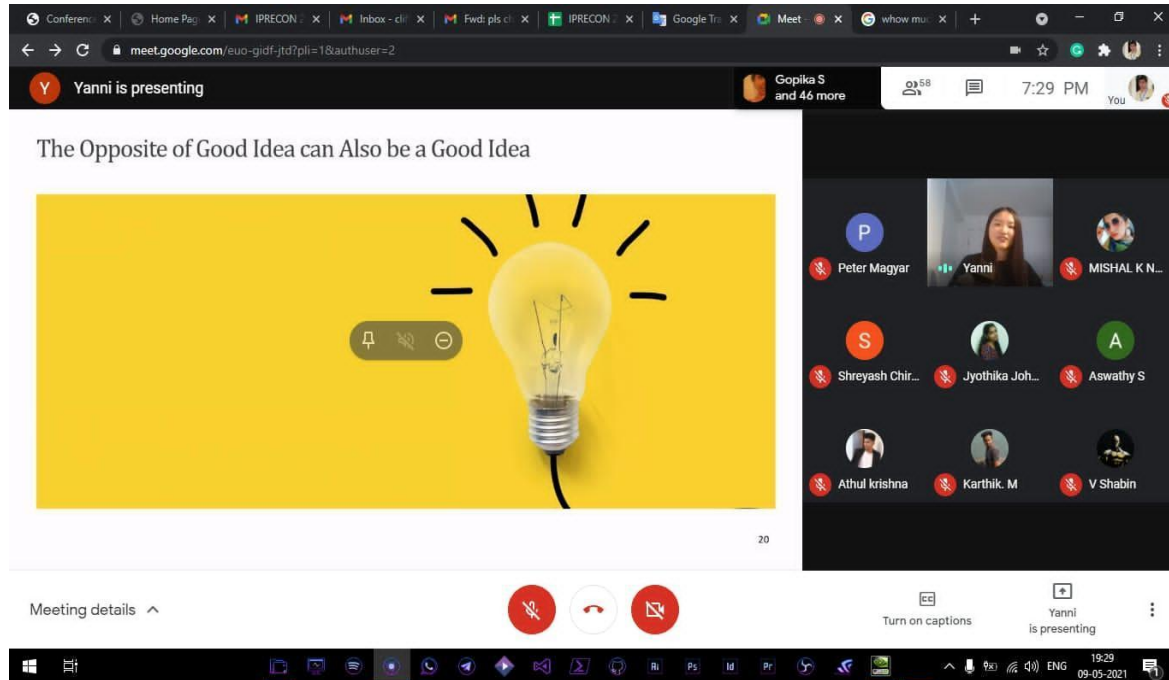
Electronics Engineer, from Exact Sciences & Technology Faculty, Tucumán National University, Argentina
IEEE IAS Diversity & Inclusion Committee Chair

IEEE Student Branch College of Engineering Karunagappally

Event 3

Webinar on "How to Practice Engineering Thinking".

IEEE Student Branch College of Engineering Karunagappally in association with Industry Applications Society conducted a webinar on How to Practice Engineering Thinking by Dr. Yanni Zhong, Advanced Engineer, Siemens Gamesa Renewable Energy on 09th May 2021 at 07:00 pm (+IST). She is dedicated to developing engineering solutions that will increase the efficiency and reliability of power converters, in particular for wind energy application and is specialized in capacitors, converter design, and thermal modeling.



The webinar started with an affiliation by Mohammed Niyaz , Vice-Chair IEEE IAS SBC CEK and then the session turned over to our guest. The session initiated with the basics of the forerunner of most engineering practices, having lots of knowledge of how different mechanisms work concerning one another makes it easier to think about things in engineering terms which made it more attractive. The session continued with the description of critical thinking and ideas. She explained critical thinking should be intrinsic to an engineer’s mental faculty as it complements the other attributes needed for the role and is a crucial factor for exceptional outcomes which supported attendees to understand the main objectives to one primary goal of higher education has always been to inculcate the habit of critical thinking among students, to raise them as responsible, evaluative human beings. While talking about the ability to remain analytical and forming a connection between ideas which was the subject of much debate advocated by some of the earliest philosophers like Socrates, Chanakya, and Plato, its basic importance was also explained to the students. After that Dr. Yanni Zhong focussed on engineers who are one of the most sought-after professionals for job security and remuneration, engineers themselves seem to have fallen deep into the rabbit hole of technical knowledge. They sit in front of their computer screens, coding their way through life with blinkers on, shutting off every bit of analytical

contemplation. The need of the hour is critical thinking, a process of rationalizing, which is self-directed, self-disciplined, self-monitored, and self-corrective.

One of the most astonishing and breathtaking parts of the session was the discussion where many attendees were involved. The overall session can be marked as an impressive one and was a great success as the number of attendees was around 60, apparent from the fact that the session was able to reflect different perspectives in the student's mind. The attendees gave an enormous positive number of feedback , encouraging us to organize more of such psychologicistic seminars.

Event 4

Technical Writing Competition on "IMPACT OF AI AND ROBOTICS IN HUMAN LIFE"

A triumphant Technical Writing Competition on "**IMPACT OF AI AND ROBOTICS IN HUMAN LIFE**" in connection with **science week celebrations 2021** was organized for the students by **IEEE Student Branch College of Engineering Karunagappally**. Abundant participants attempted the technical writing competition. Entries were received from 23rd Feb - 26th Feb 2021 through Google doc form. Google form was available.

CEK

IAS
THE INDIAN ASSOCIATION OF SCIENTISTS

IEEE

Technical Writing Competition on

IMPACT OF AI AND ROBOTICS IN HUMAN LIFE

Science Week Celebration
2021

23-26 Feb 2021

Submit at:
shorturl.at/iDEP8

CONTACT
VARUN - 6282808828
ALISTER - 9074572015

IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPPALLY

Event 5

IDEA PITCHING COMPETITION



IEEE Student Branch College of Engineering Karunagappally conducted an idea pitching competition as part of the Science week celebration 2021. Several students from various colleges participated in the competition. Registrations commenced from 24th Feb till 26th February 2021. A lot of enthusiastic students were involved in the competition by presenting their remarkable ideas on the topic “Electric Vehicles”. We received lots of ideas which exhibited brand new innovations and ideas.



SCIENCE WEEK CELEBRATION

IDEA

PITCHING COMPETITION
ON **ELECTRIC VEHICLES**



24-26 feb 2021

Submit at:
cutt.ly/LlugvqC

CONTACT
NIYAS : 7510758989
VISHNU : 8606534744

IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPPALLY

Event 6

Webinar on “How to write a Technical Paper?”

IEEE Student Branch College of Engineering Karunagappally keenly focuses on improving the technical skills of students, so as a part of it a webinar on "How to write a technical paper" by Mr. Hari Prasad, Developer at Zellab and the past PES chair, IEEE SB CEK on 28th march, 2021 at 7:00 pm. He clearly specified Technical writing as a continuous process of learning, carefully gathering, sifting, organizing, and assessing, all while trying to craft something that makes sense for a user. He also stated that Contextualization lies in bringing out the right messages from the abundant content; in sandwiching the subject between the background of

information and the foreground of its utility. As we were the hosts for IEEE International Power and Renewable Energy Conference (IPRECON) 2020, India's first IEEE IAS club of 6 Technical Paper Conference. We were also privileged to host it for the year 2021 as well, so he also talked about "How to publish your technical paper in iprecon 2021". It was a very informative session and it was also a great opportunity for those to know about iprecon 2021 who are looking for a chance to present their papers. We had about 50 attendees from different institutions and we got great feedback from them. The event was a great success as many attendees benefited from it.



How to write a Technical Paper ?

Publish Your Technical Paper In IPRECON 2021

Date: 28/03/2021

Time: 7:00 PM



Join in: <https://meet.google.com/tua-bytd-wzj>

IEEE STUDENT BRANCH
COLLEGE OF ENGINEERING KARUNAGAPPALLY

Event 7

Report of Art of Research Paper Writing

IEEE student Branch college of engineering Karunagappally in association with Women in Engineering Affinity Group and Industry Applications society organized a 2-day workshop on "Art of Research Paper Writing". The workshop was handled by "Dr. Anupma Thakur", DST-INSPIRE Senior Research Fellow, CSIR-CSIO, Chandigarh, India on 30th and 31st July 2021 under the Google Meeting platform.

Day- 1

As on the first day, the session started at 07:00 pm, and the speaker gave a brief introduction to paper writing and how to start a technical paper. A research paper is a piece of academic writing that provides analysis, interpretation, and argument based on in-depth independent research. There were attendees from all branches and from different states. Hence on the first day, the speaker just tried to provide all the basics of Research papers which are similar to academic essays, but they are usually longer and more detailed assignments, designed to assess not only your writing skills but also your skills in scholarly research. She showed a sample of various researches which demonstrated a strong knowledge of their topic, engaged with a variety of sources, and made an original contribution to the debate. She fabricated the session more interactive by doing various activities and many of them responded with different varieties of answers. After that, she explains how to narrow broad subject areas to choose a topic that interests you, meets the criteria of your assignment, and is possible to research. The session ended at 08:30 pm after discussing all the doubts.

Day- 2

On the 2nd day of the workshop (31st July 2021), the session started at sharp 07:00 pm by clearing all the queries of the previous session individually with limited time. Then the session kicked off quickly with the phenomenon of Reading to write effectively. Given all of the reading and writing that we are expected to accomplish as college/university students, it's important to be as efficient as possible when committing our time to these responsibilities. He verified the designs of some of the attendees and discussed with them and corrected all the mistakes and the group session ended by 8:25 pm. There was a doubt clearing session at the end in which the attendees were so thrilled and they interacted well

and apart from the doubts on their first draft of the research paper they were keen to know the opportunities and achievements of a research paper writing. Research writing is the process of sharing the answer to your research question along with the evidence on which your answer is based, the sources you used, and your own reasoning and explanation. In the end, everyone gathered again for discussing and clearing all the doubts individually.

The overall session can be marked as an imprinted success and the number of attendees was around 60 evident of the fact that the session was able to open a new era of the creative portal in students' minds. The attendees gave positive feedback in encouraging us to organize this type of technical workshop more and more.

How suitable your article is for publication!

Originality of Ideas
A journal article needs to be novel, based on your own ideas and research, and add to current scholarly knowledge.

Significance of Ideas
Novelty is not sufficient if there is no purpose or significance in relation to current scholarly writing. Does your work fill a gap in the current discourse?

Quality of Research Writing
Your article needs to be written in an academic style, according to what is standard for your discipline. It helps if it is also interesting and engaging. Scholarly writing is not necessarily boring.

Art of Research Paper Writing by Anupma Thakur | anupmathakur92@gmail.com

7:30 PM | Talk title: Art of Research Paper Writing

Defining the focus and contribution of Research

Advancing knowledge by promoting research by publication

Focus of your research project/contribution	What
Is already been done or is already known in this area	What
Has been done to add to what is known	What
Novelty	What
Do you see your manuscript advancing knowledge in your field	How

Art of Research Paper Writing by Anupma Thakur | anupmathakur92@gmail.com

7:27 PM | Talk title: Art of Research Paper Writing

Event 8

Virtual Laboratory Visit To Pacific Northwest National Laboratory

A Virtual Laboratory Visit to PNNL on the 25th of September, 2021 by Mr. Richard Kouzes, Laboratory Fellow at the Department of Energy's (DOE's) Pacific

Northwest National Laboratory (PNNL) working in the areas of neutrino science, homeland security, non-proliferation, and computational applications accompanied entirely. It was such a great experience to visit a leading centre for scientific discovery in chemistry, data analytics and earth science, and technological innovation in sustainable energy and national security. Scheduled from 9:00 PM – 10:00 PM IST. It was a very amazing session as we were able to visit several new gadgets and devices as well as to witness some incredible possibilities of technical advancements for the future.



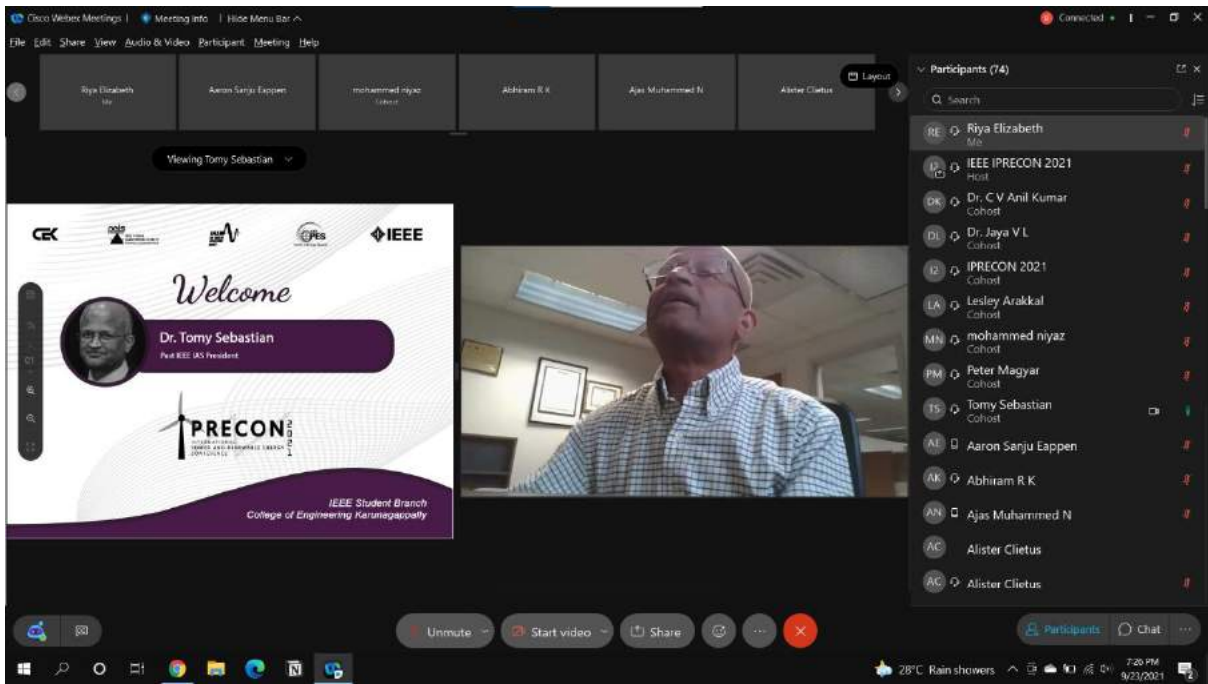
2021 IEEE International Power and Renewable Energy Conference (IPRECON) is the 2nd edition of India's first & only IEEE IAS Club of 6 Technical Paper Conference organized by IEEE Student Branch College of Engineering Karunagappally (IEEE SB CEK), technically sponsored by IEEE IAS, IEEE PES and IEEE PELS.

The inauguration of the IEEE International Power and Renewable Energy Conference 2021 organised by College of Engineering Karunagappally was held on the 23rd of September, 2021. The comparing was done by Mr.Mohammed Niyaz , IAS vice chair , IEEE SB CEK .

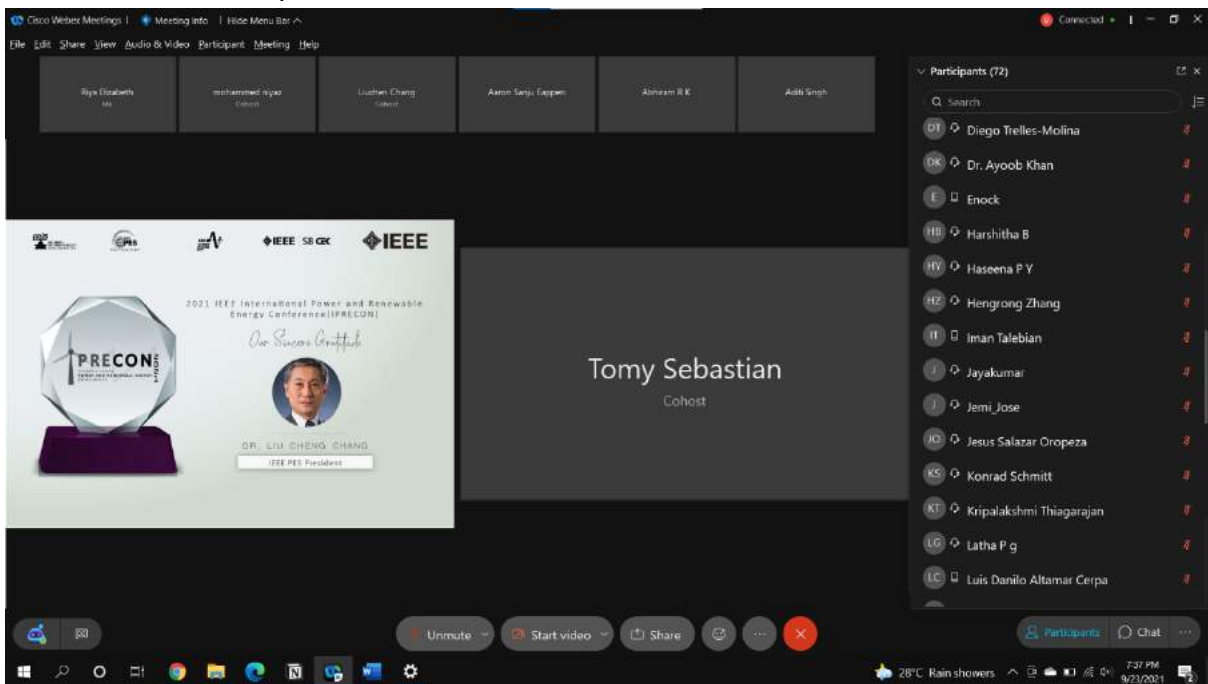
The ceremony was flagged off with the IEEE code of Ethics by Mr. Cliffin Cletus , Chair IEEE NPSS/PELS Jt. Chapter IEEE SB CEK . The IEEE code of Ethics was followed by a minute of silence for the late Dr.Frank Lambert who served as the 2020-2021 PES President who unfortunately passed on the 27th of July , 2021 . Frank had been actively involved in PES Technical Activities since 1982, serving on a variety of Working Groups in both the PES Distribution Subcommittee and PES Switchgear Committee.

The welcome Address of the inauguration was given by Ms. Riya Elizabeth, General Chair IPRECON 2021. A video presentation about IEEE Student Branch College of Engineering Karunagappally was played to showcase the student branch's achievements till date which included 60 awards and more than a 100 recognitions and multiple volunteers grabbed more than 50 travel grants and 10 travel grants abroad. After the video presentation, Ms. Amitha A Nair, General Chair, IPRECON 2021 was called upon for the Presidential Address. Ms. Deepa Girija Pillai, Technical Chair, IPRECON 2021 was invited to present the speak about the conference IPRECON 2021 , Through IPRECON we were able to provide a platform for students and professionals from all around the world to share their findings in the fields of Power, Renewable Energy and Computing Technologies. With the theme "Engineering the sustainable world with Renewable Energy Resources through ingenious computing technologies"

The inauguration and the inaugural address was done by Dr. Tomy Sebastian, Past IEEE IAS President. His opening remarks were noticeable and encouraging and congratulated IEEE Student Branch College of Engineering Karunagappally for organizing the Club of 6 Student Led Technical Paper Conference in India.



The felicitations were done by, Dr. Liuchen Chang, IEEE PELS President, opened up his views on the amazing step put forward by IEEE SB CEK and wished for the successful completion of the conference. He also drew our attention to PES (POWER ELECTRONICS SOCIETY), then he mentioned about EBL-II, a global competition aimed at fostering innovation to develop solutions to electricity access.

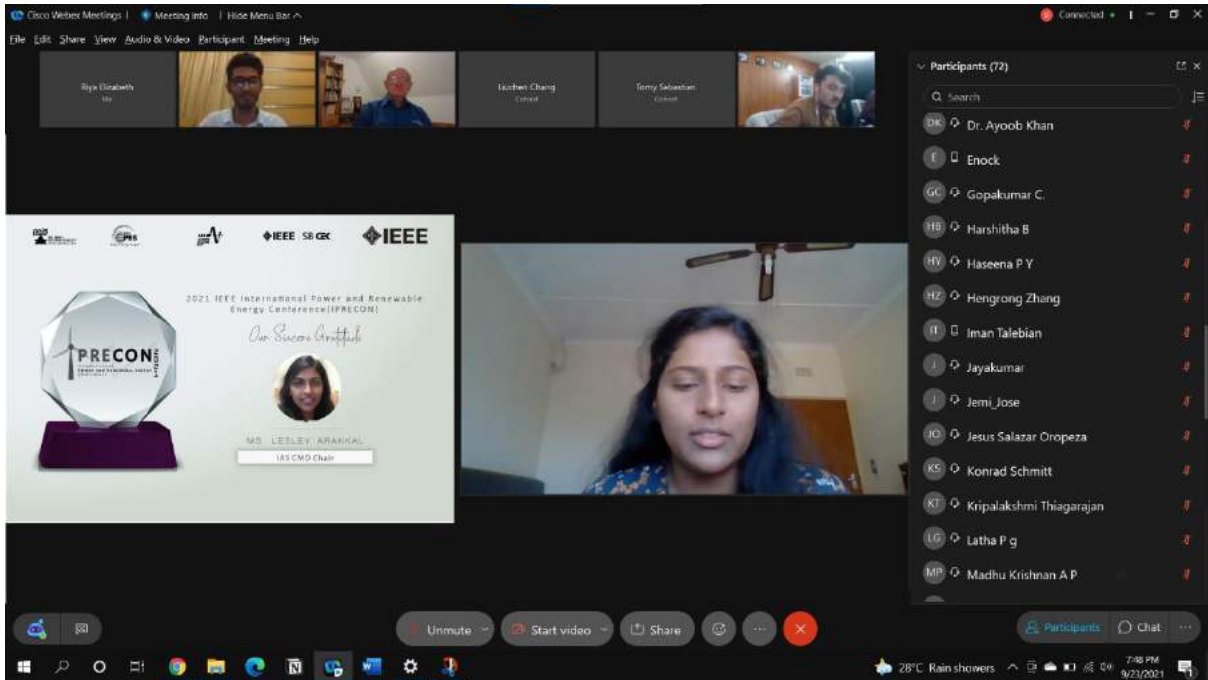


Dr. Ing Peter Magyar, Past IAS CMD Chair, expressed his dynamic views on the potential of the student branch as he also mentioned about his previous experience with its members . His support to the student branch has been so massive and he promised to provide additional support in the upcoming events organised by the SB .

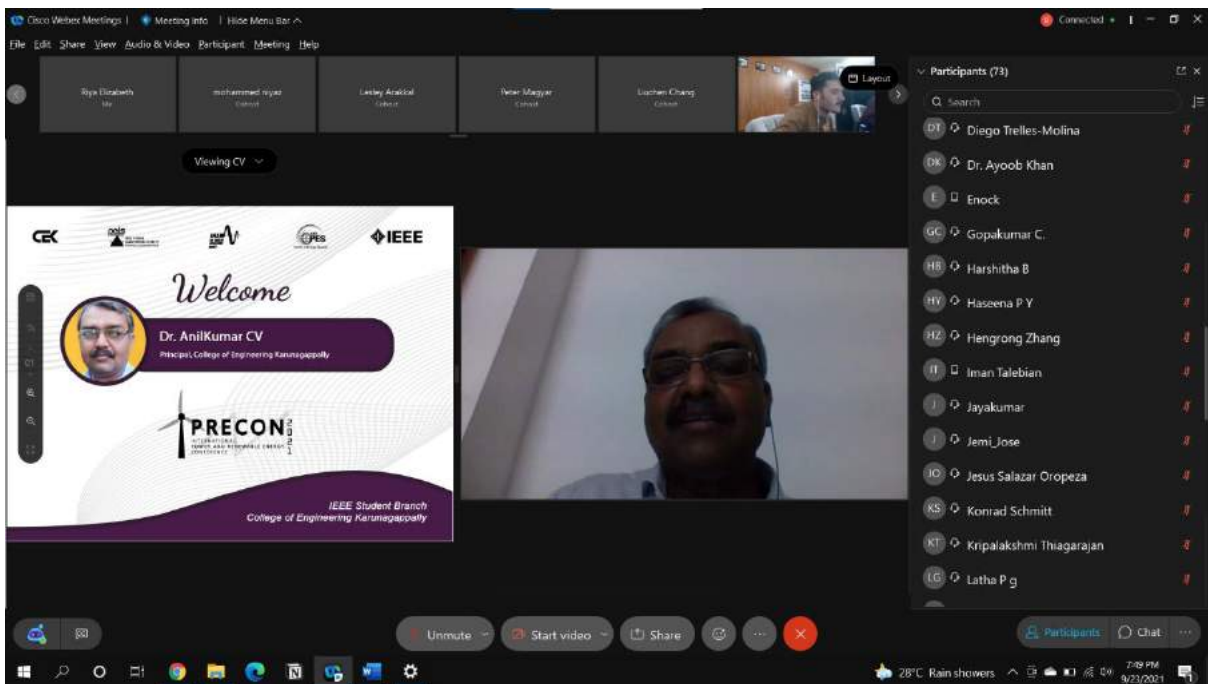
The image shows two screenshots from a Zoom meeting. The top screenshot displays a welcome slide for Dr. Ing Peter Magyar, Past IAS CMD Chair, with logos for CEK, IEEE, and PRECON 2021. The bottom screenshot shows a shared slide titled "Plug-in hybrids - a comparison" with the subtitle "FAZ „Technik & Motor“, Apr 28, 2020". The slide contains a table comparing five different plug-in hybrid vehicle models.

Type / Basic price	Engine power, gasoline / electro	Battery, kW	Electrical distance Nominal / Best test Charging time, 220V
Opel Grandland X Hybrid 4 51,105 EUR	149 kW / 82 kW+84 kW	13.2	59 km / 42 km 8 h
Volvo XC40RS Twin Engine 50,000 EUR	134 kW / 61 kW	10.7	45 km / 36 km 5 h
Peugeot 508 SW H 225E AETS 49,450 EUR	134 kW / 82 kW	11.5	52 km / 38 km 6.5 h
Passat Variant GTE TSI 4x4 65,635 EUR	139 kW / 86 kW	13	55 km / 38km 6.5 h

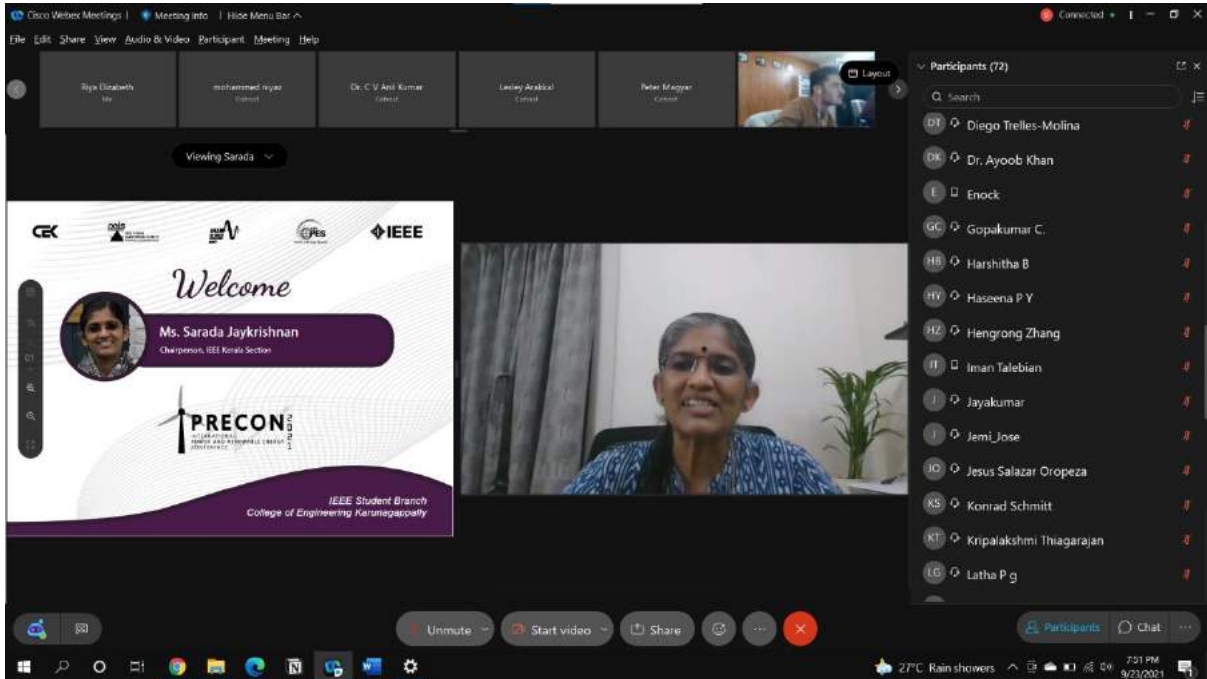
Ms. Lesley Arakkal, IAS CMD Chair, Congratulated the entire organizing committee for the amount of work the student branch has put forward to a conference of this scale.



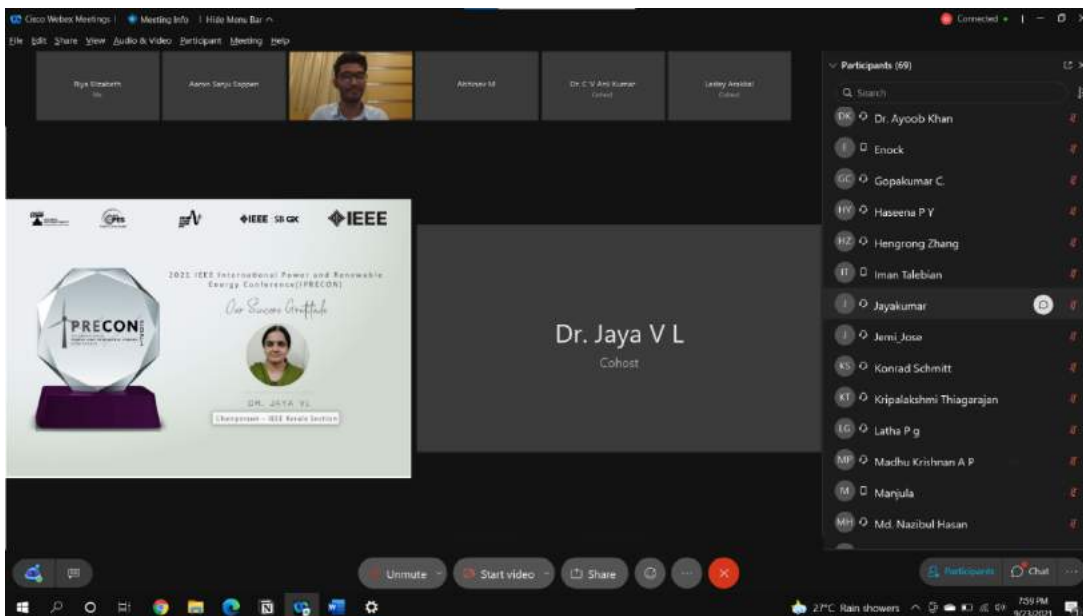
Dr. AnilKumar CV, Principal, College of Engineering Karunagappally , showed his valuable presence in the ceremony wishing the student branch for a successful completion and promised all means of support.



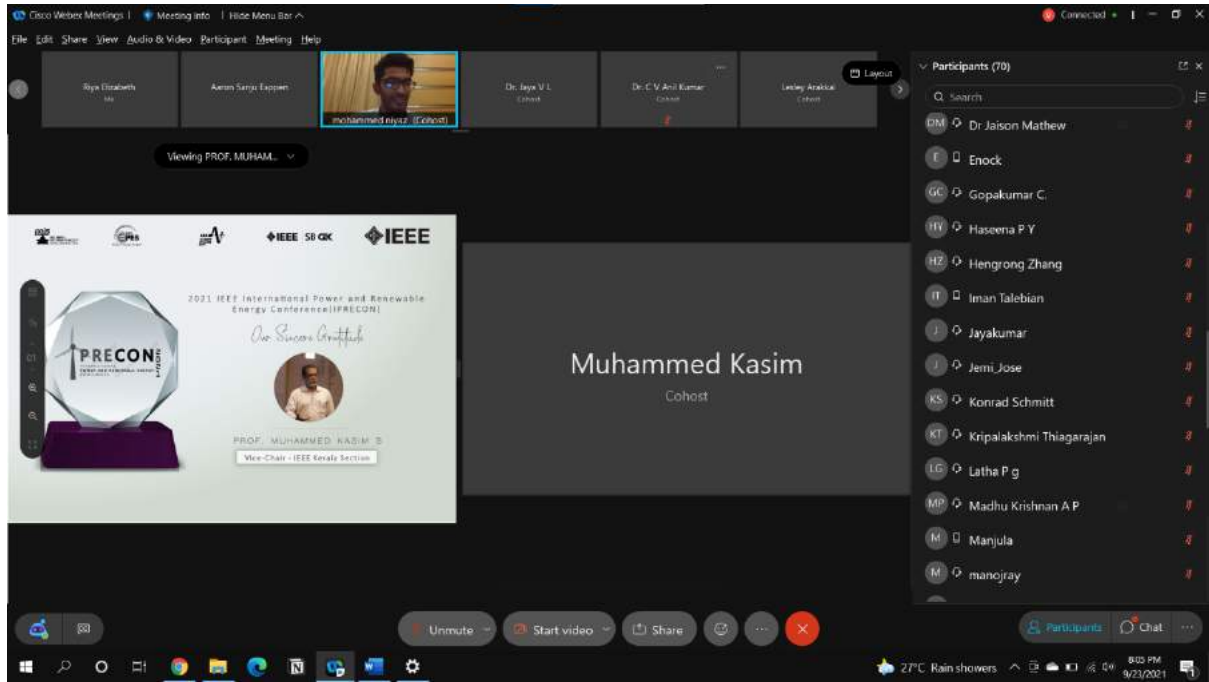
Ms Sarada Jaykrishnan, Chairperson IEEE Kerala Section , expressed her views on the prestigious student led international paper conference organised by IEEE SB CEK under Kerala section for the second year in a row .She congratulated the entire team for this event she was very much excited on this student led conference, she also took time to mention about the humanitarian activities from the humanitarian track from the schedule which she says it is always welcoming for a session of IEEE.



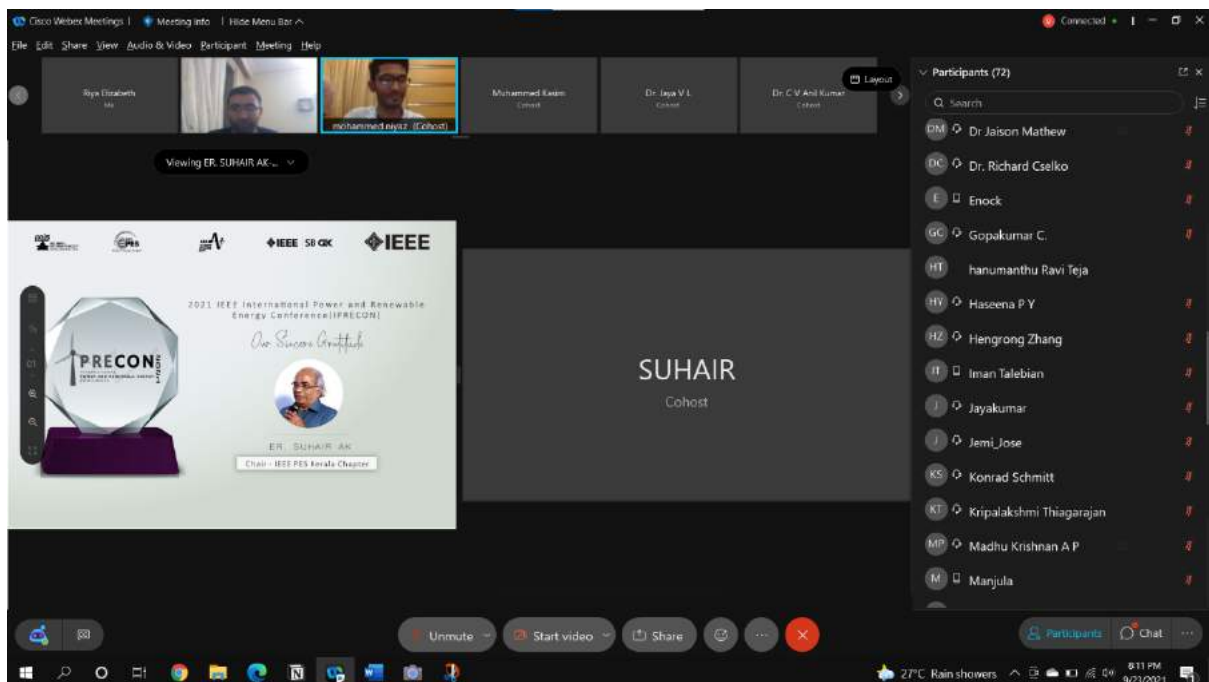
Dr. Jaya VL, Former Principal, College of engineering Karunagappally , conveyed her best regards for the successful completion of the event and wished all the authors and organisers the best of luck throughout the event .



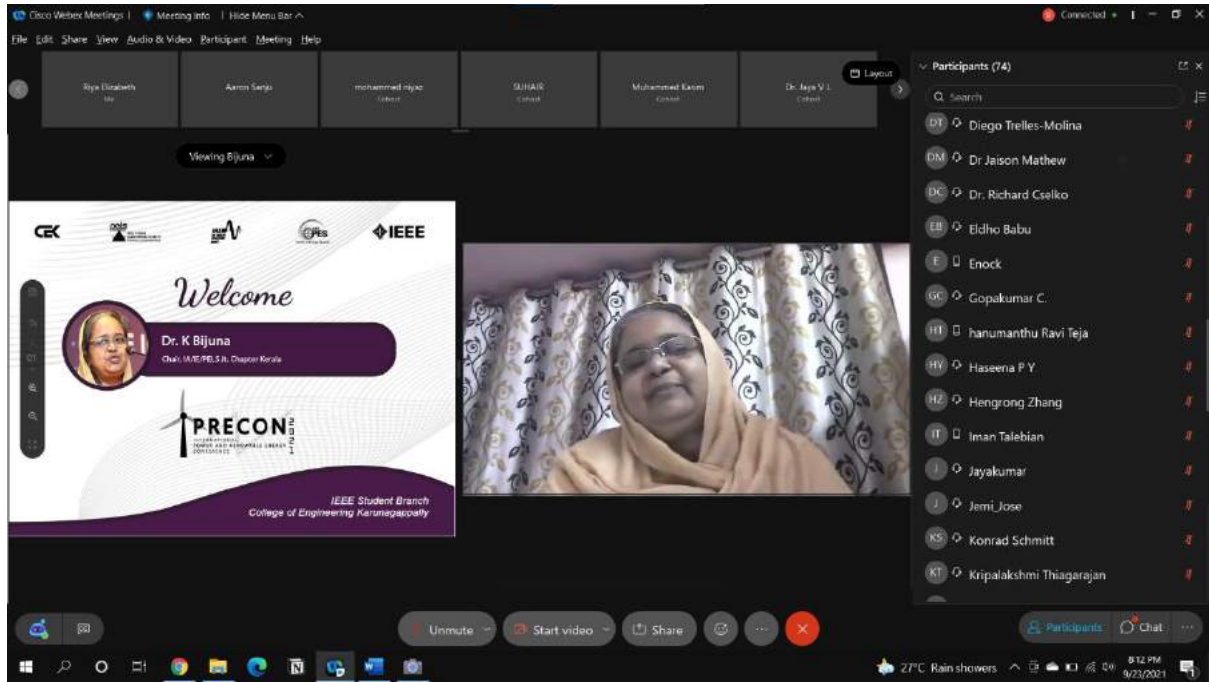
Prof Mohammad Kasim S, Vice Chair, IEEE KERALA Section, shared his views on the student led platform set up by the Student Branch for various authors across the world and country to present their respective papers .



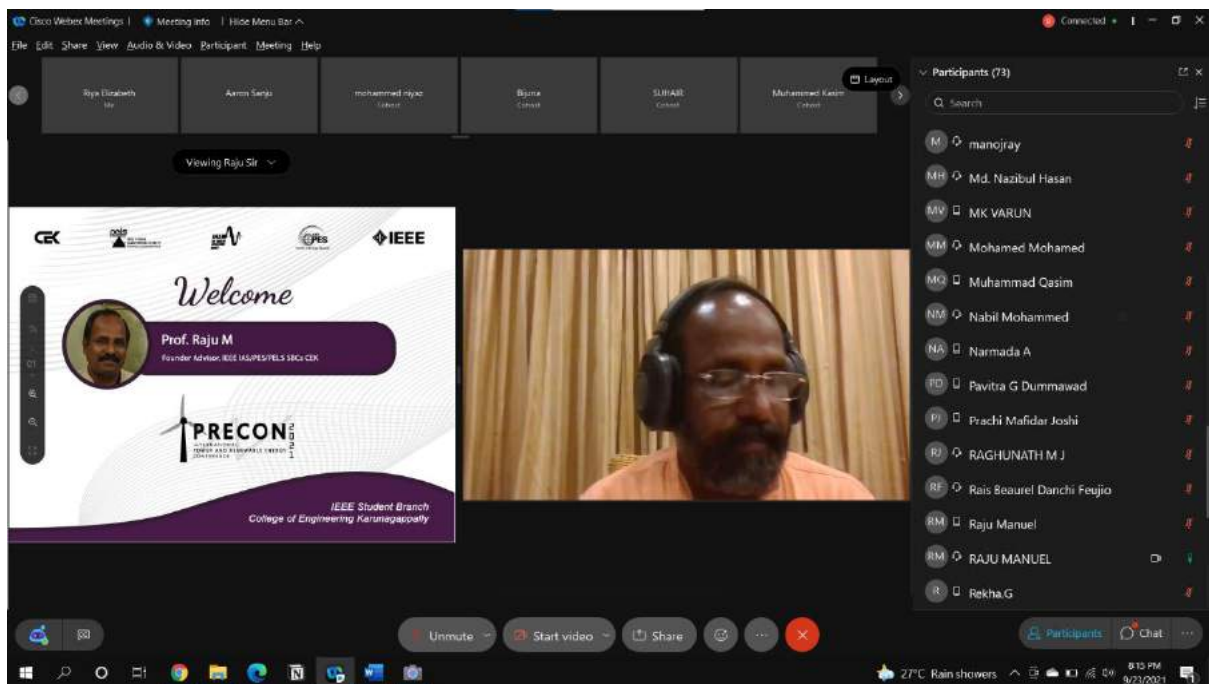
Er. Suhair AK, Chair IEEE PES Kerala Chapter, opened up about the consistent performance of the student branch and wished the best for the event to turn out successful.



Dr. K Bijuna, Chair IA/IE/PELS Jt. Chapter Kerala, congratulated the student branch for organizing the CLUB of 6 Technical Paper Conference in India under Kerala Section for the second year in a row.

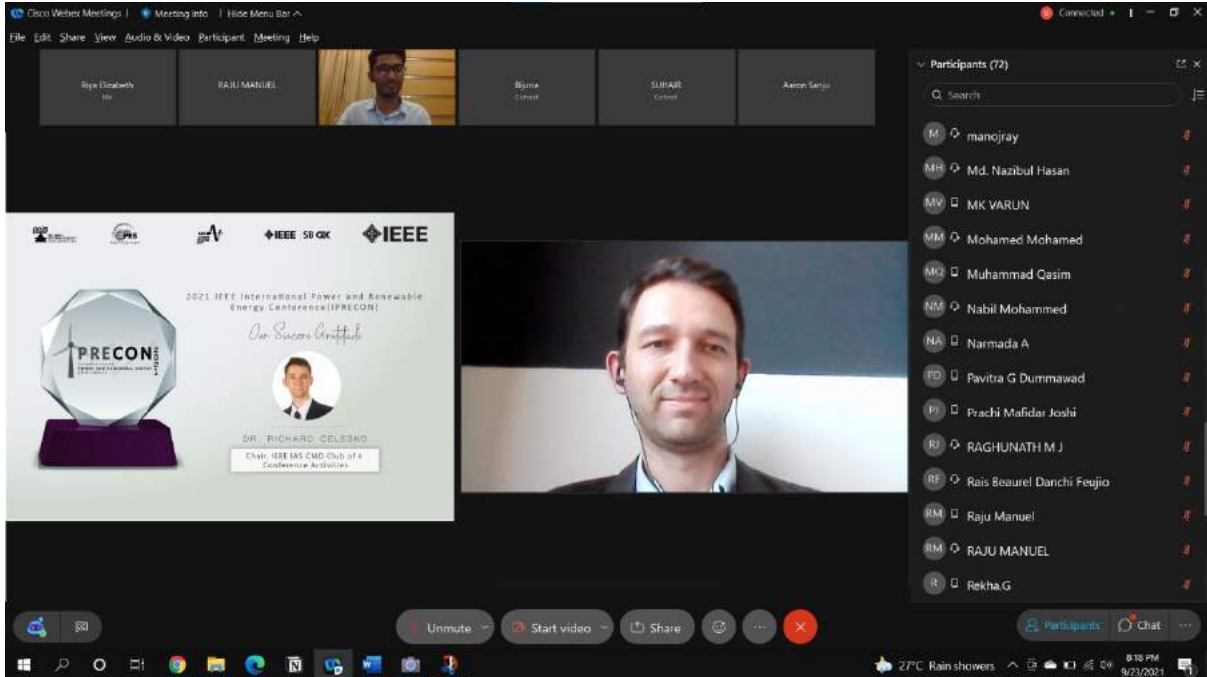


Prof Raju M, Founder Advisor IEEE IAS/PES/PELS Student Branch Chapters, expressed his complete support and guidance to the student branch and gave about positive remarks and pointers for an enhanced performance throughout the event

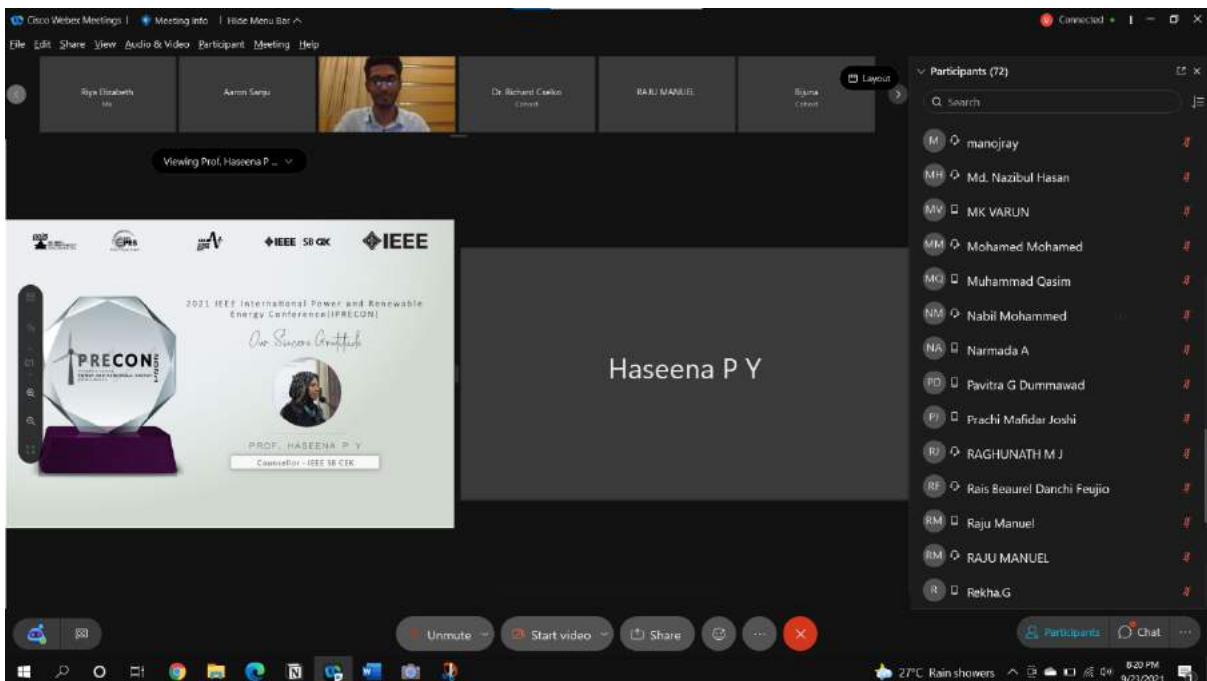




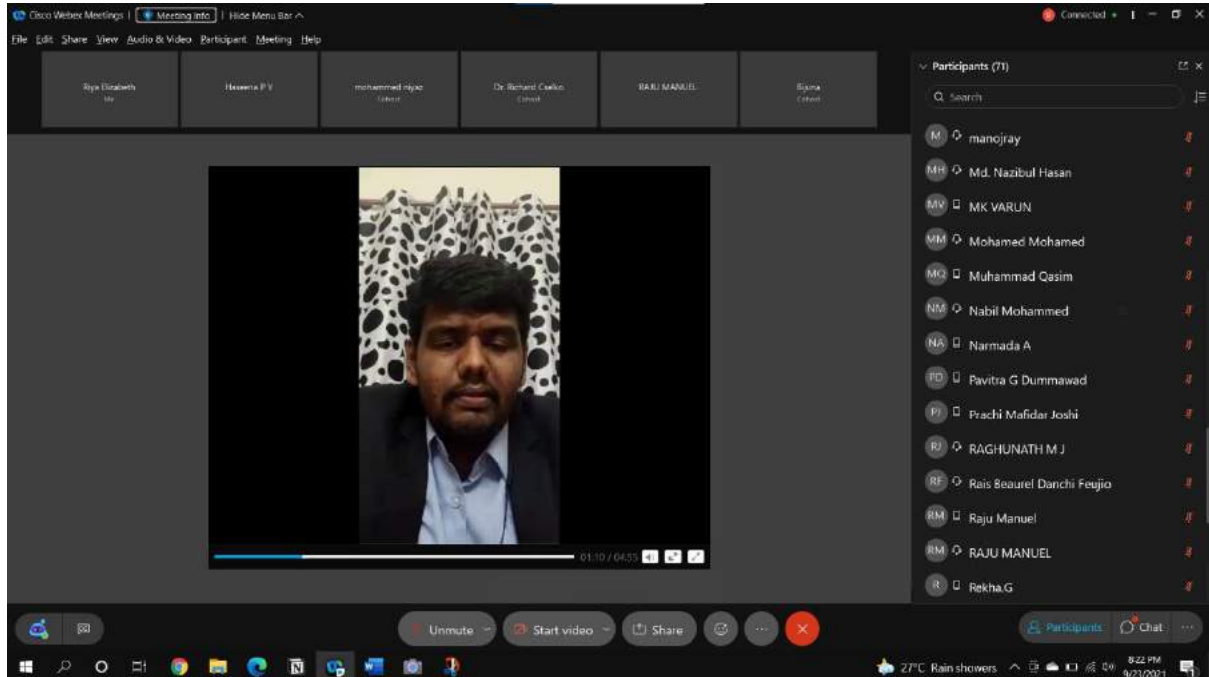
Dr. Richad Cselko, Chair IEEE IAS CMD CLUB OF 6 conference activities, showed his active presence throughout the ceremony and congratulated the student branch in organising IPRECON for a second year in a row and wished the student branch the best regards to have a successful event



Prof. Haseena PY, Counsellor, IEEE Student Branch College of Engineering Karunagappally, congratulated the whole organising team and thanked all the guests for attending the ceremony. She also promised her entire support and guidance for the future events.



Finally, the vote of thanks was given by Mr. Hari Krishnan A, Publication Chair, IPRECON 2021. IPRECON 2021 was successfully able to exceed everyone's expectations. Everyone involved in the conference had quite an exhilarating time as were evident by their reviews. It was indeed the beginning of the CLUB OF 6 Conferences in India and IEEE SB CEK takes immense pride to be the one to come up with such an endeavour. IPRECON 2021 enlightened not only the youth, but even the professionals into a path of diverse technical advancements and was indeed a full-fledged conference



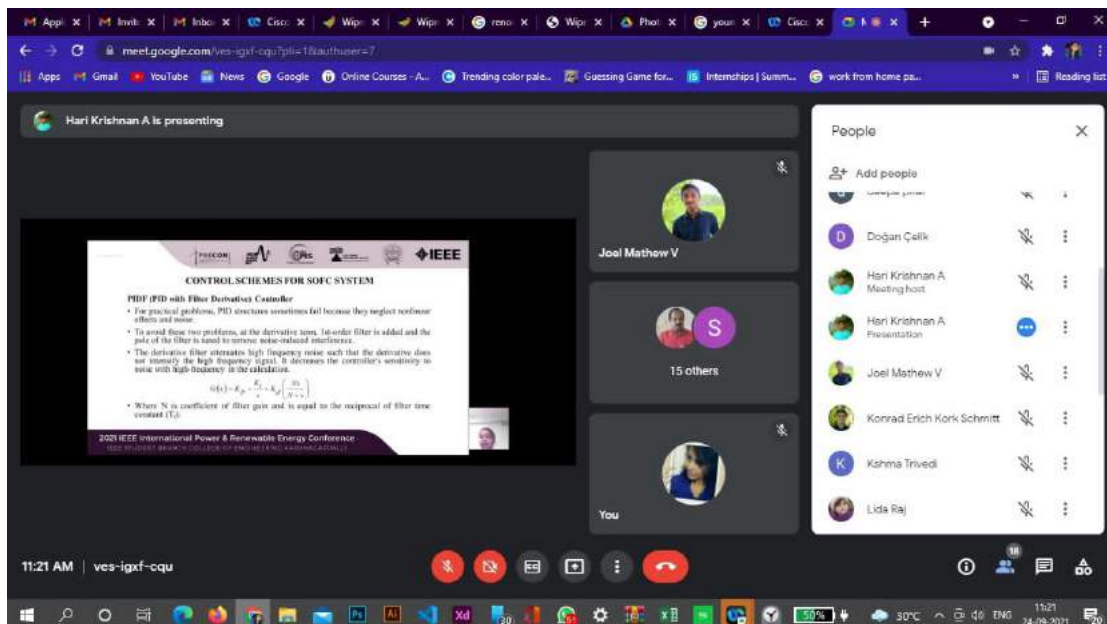
With that, the opening ceremony of IPRECON 2021 came to an end.

Day 1

IEEE International Power and Renewable Energy Conference organized by IEEE Student Branch College of Engineering Karunagappally in association with IEEE Industry Applications Society came to end on 26th September after three days of incessant Activities and prolific deliberations of interesting as well as informative ideas. Due to the pandemic the virtual platform has been opted for the conference.

The day 1 of IPRECON 2021 mainly consisted of technical paper presentations which were carried out in 2 sessions with 3 parallel tracks on both sessions. At sharp 9:30 am IST the curtain for the first session "**Power electronic converters and control system**" was raised. The session chair was Nabil Mohammad, Ph.D. Scholar, Monash University, Australia.

Then the most awaited presentation session started with the first track of presentations with the paper “Review and comparative study of Bi-Directional DC-DC Converters” by Mr. Gottapu Lithesh Kumar and his team. There were also several more presentations in the session from various classes of division, which all are much informative, interesting, and highly vibrant with the interaction of presenters, students, research scholars, and professionals. It concluded with the SB offering a token of praise to the session chair through a memento.



The second track of the paper presentation was on “**Electric Machines and Drives and Power Quality Issues**”. The session chair was Mr. Antony Peter, Ph.D. Scholar, Electrical engineering, Government engineering College Thrissur. The session concluded at 12.30 PM IST by appreciating all the authors and presenters for their hard work and research and the session chairs were rendered a memento each for their cooperation and support.

Paper 110

Ciffin Cletus is presenting

Optimization

- Objective Function**
 $\max(TF_{avg}, TFD) \text{ and } \min(F_p, TF_{rp}, THD)$
- Constraints:**
 $TF_{avg} \geq 15221 \text{ N.TFD} \geq 263 \text{ kN/m}^2$
 and $TF_{rp} \leq 50.36 \text{ N}$
 $Split \text{ Ratio: } 0.1828 \leq S.R. \leq 0.2903$
 $PM \text{ width: } 3.25 \leq w_{pm} \leq 5.1$
 $PM \text{ height: } 17.80 \leq h_{pm} \leq 26.60$
 $Flux \text{ bridge width: } 0.5 \leq w_{fb} \leq 1.5$
 $Stator \text{ pole width: } 3.0 \leq w_{sp} \leq 10.0$

2021 IEEE International Power & Renewable Energy Conference
IEEE STUDENT BRANCH COLLEGE OF ENGINEERING, KARUNAGAPPALLY

11:39 | uov-dpag-dif

You

Antony Peter

Iman talebian

18 others

Paper 65

Ciffin Cletus is presenting

Electric Vehicle Integration Block Diagram

2021 IEEE International Power & Renewable Energy Conference
IEEE STUDENT BRANCH COLLEGE OF ENGINEERING, KARUNAGAPPALLY

10:56 | uov-dpag-dif

You

Raja Ram Research Scholar...

Antony Peter

21 others

Paper 101

Finite Element Model

Main Characteristics of the Motor				
Number of	Phases	3	Stator Resistance(Ω)	1.176
	Pole Pairs	2	Stator Inductance(H)	31e-5
Stator Slots	Winding Configuration	24	Winding	Concentric Winding
	Airgap (mm)	0.503	Core type	Silicon Steel
Rotor Outer Diameter (mm)	70	Magnet Type	NdFeB	
Stack Length (mm)	50-308	Frequency (Hz)	50	

Geometry design of the surface permanent magnet synchronous motor

2021 IEEE International Power & Renewable Energy Conference
IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPPALLY

Paper 30

in-call messages

wasiq ulah 10:10
Sir, there is no voice of the presentation

Cliffin Cletus 10:11
Are you able to hear audio now?

You 10:11
yes

wasiq ulah 10:11
no sir

You 10:12
Guidelines:
- A total of 15 minutes will be assigned for each team. Out of which, 12 mins is for the presentation and 3 for discussions.
- If the attendees have any question regarding the paper, you may use the chat box to post your questions.

Sidhi Ashasthaji 10:12
Sir, please check your connection. It's audible

[Send a message to everyone]

Paper 84

Cliffin Cletus is presenting

2021 IEEE International Power & Renewable Energy Conference
IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPALLY

Literature review

- **Rotor tooth pairing** with alternately two different tooth widths are proposed for cogging torque reduction in [3].
- A new technique in **tooth pairing** is proposed in [4] by connecting **two rotors at axial direction** and considered as more feasible rotor teeth pairing.
- In **notching techniques**, the flow of magnetic flux is altered, investigated in [5] utilizing notching techniques for cogging torque reduction.
- In **notching technique**, influence of slot depth, slot width, shape are investigated in [6].

11:07 | uov-dpag-dif

Paper 53

Cliffin Cletus is presenting

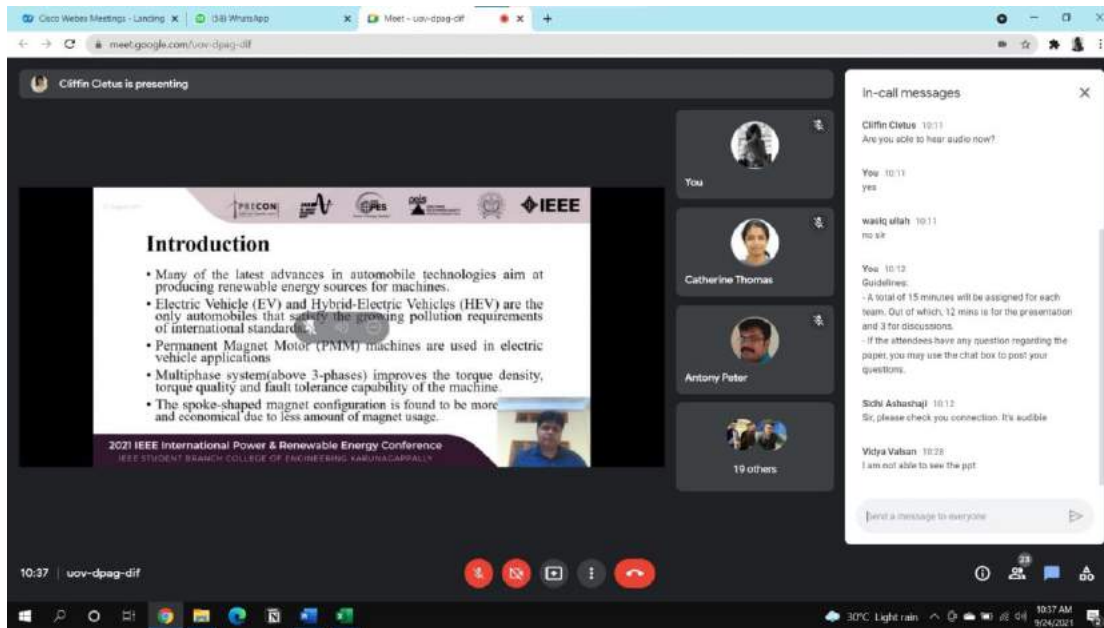
2021 IEEE International Power & Renewable Energy Conference
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Complex Independent Component Analysis

- Blind Source Separation Technique.
- Based on Central Limit Theorem, returns least Gaussian sources.
- Estimates accurate values for Z_u and Z_c .
- Computationally expensive.

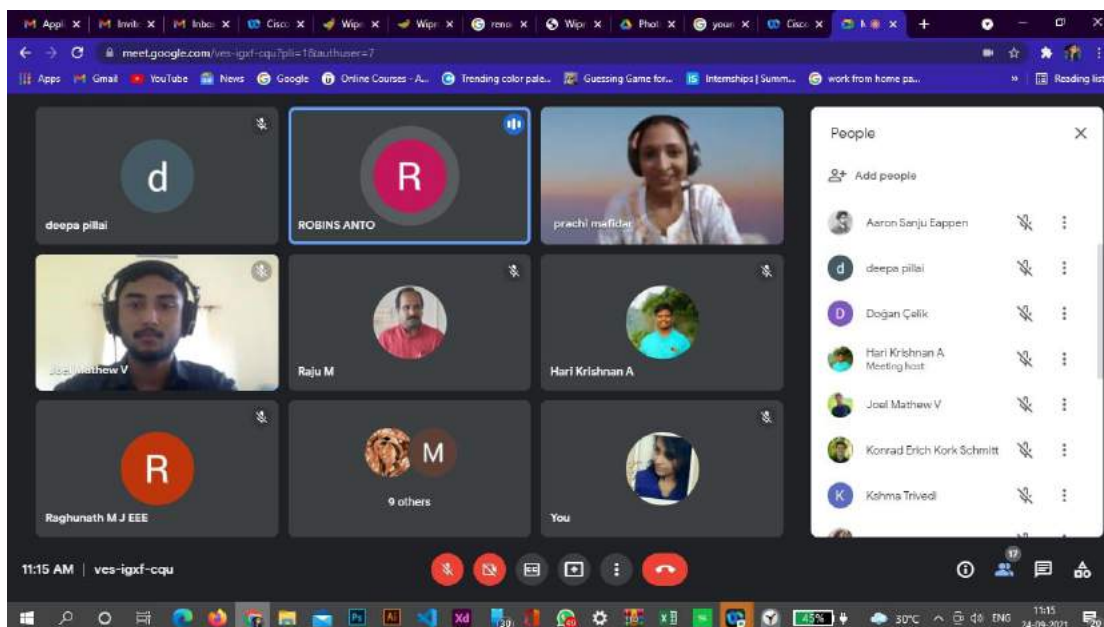
11:52 | uov-dpag-dif

Paper 51



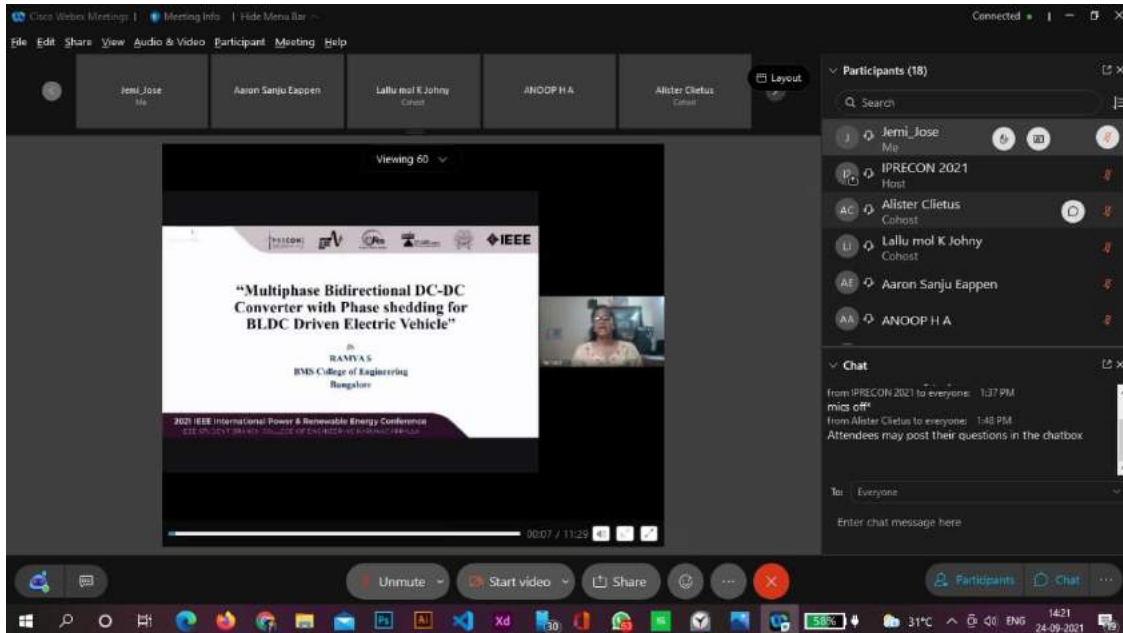
The third track of the paper presentation was on "**Renewable Energy Resources**". The session chairs were Mr. Raju Manuel, Ph.D. candidate with, Department of Electrical and Electronics Engineering, Karpagam Academy of Higher Education, and Mr. Robins Anto, research scholar with the Department of Hydro and renewable energy, IIT Roorkee. The session concluded at

12.30 PM IST by appreciating all the authors and presenters for their hard work and research and the session chairs were rendered a memento each for their cooperation and support.



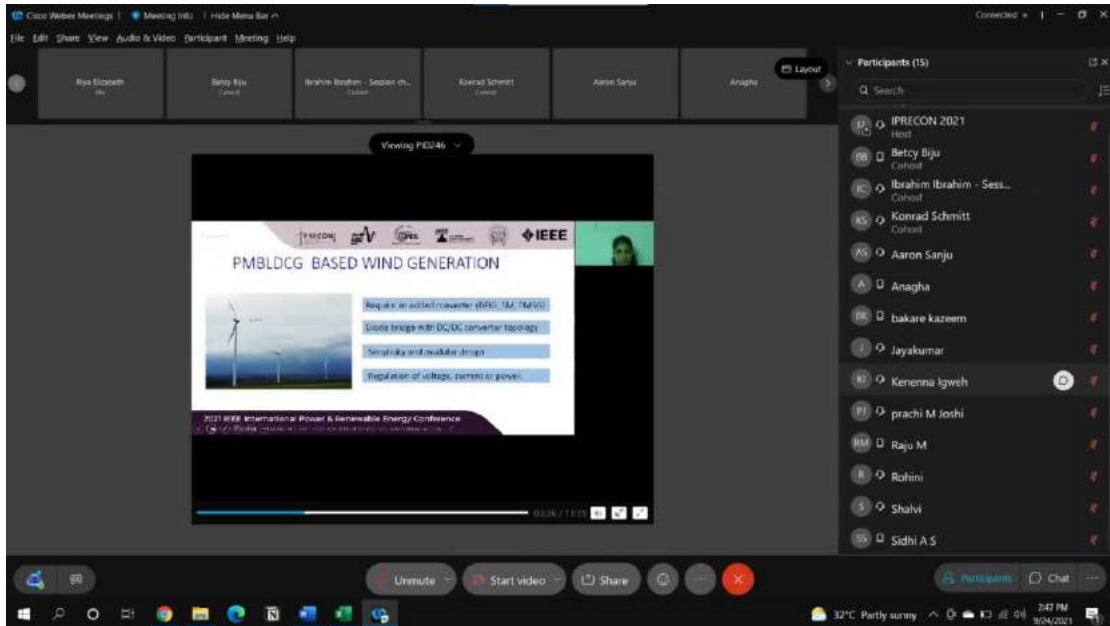
The next session was started at 1.30 PM IST with three tracks of papers and was concluded at 4.30 PM IST.

The fourth track consisted of papers on "**Electric Vehicles**". The session chairs were Ms.Lallu Mol K Johny, Ph.D. Scholar, APJ Abdul Kalam Technological University, and Mr. Sanoop P S, Ph.D. Scholar, National Institute Of Technology, Calicut. The track was concluded at 4.30 PM IST, appreciating all the authors and presenters for their hard work and research, and the session chairs were rendered a memento each for their cooperation and support.

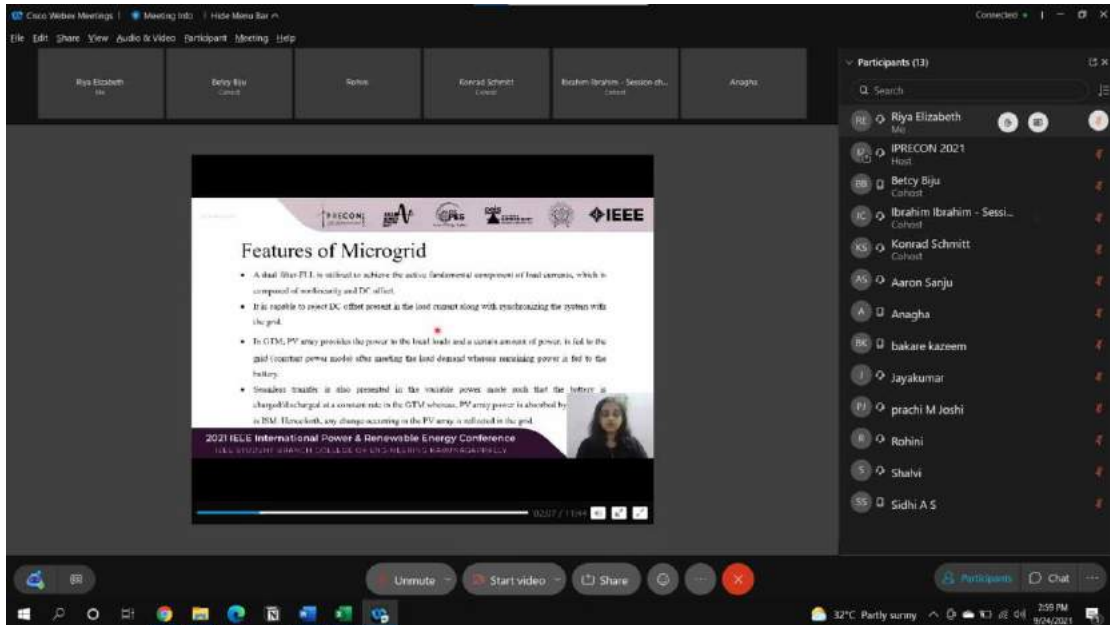


The fifth track was on "**Distributed Generation and Grid Interconnection**". The session chairs were Mr. Konrad, Ph.D. scholar, Texas Technical University, and Mr. Ibrahim A Ibrahim, Electrical Engineering Ph.D. Student at Texas Tech University. The track was concluded at 4.30 PM IST, appreciating all the authors and presenters for their hard work and research, and the session chairs were rendered a memento each for their cooperation and support.

Paper 246



Paper 261



Paper 222

The screenshot shows a Cisco Webex meeting interface. The main content is a slide titled "ENERGY MANAGEMENT TECHNIQUE" from the 2021 IEEE International Power & Renewable Energy Conference (IPRECON). The slide includes a flowchart diagram and logos for PRECON, IEEE, and other organizations. The meeting interface shows 17 participants in the top right corner and various controls like Unmute, Start video, and Share at the bottom.

Paper 243

The screenshot shows a Cisco Webex meeting interface. The main content is a slide titled "PROPOSED ISLANDING DETECTION TECHNIQUE" from the 2021 IEEE International Power & Renewable Energy Conference (IPRECON). The slide contains text describing an adaptive neuro-fuzzy inference system (ANFIS) for DG islanding detection. The meeting interface shows 15 participants in the top right corner and various controls like Unmute, Start video, and Share at the bottom.

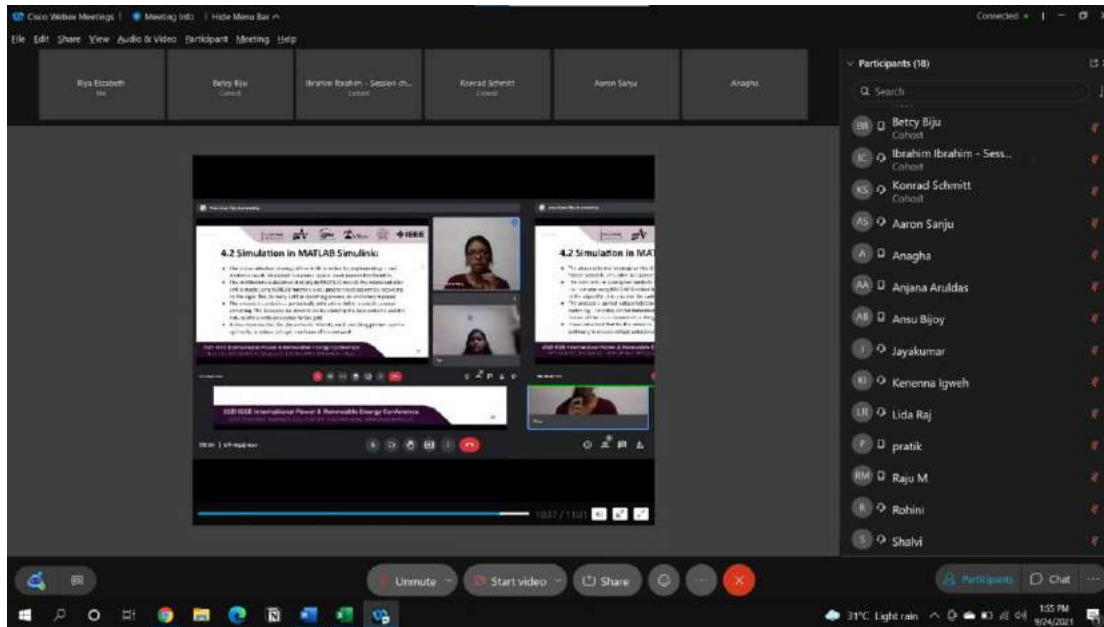
Paper 113

The screenshot shows a Zoom meeting interface. At the top, there are participant names: Riya Elizabeth, Betsy Biju, Ibrahim Ibrahim - Sess..., Aaron Sanju, Konrad Schmitt, and Anagha. The main content is a presentation slide titled "Hysteresis current control" with a subtitle "The hysteresis current control implementation procedure in a grid connected PV system". The slide features a block diagram of a PV system with a PV array, MPPT, Boost Converter, and a Voltage Inverter (Grid Power Control) connected to a Grid. A graph shows the current control hysteresis band. The footer of the slide reads "2021 IEEE International Power and Renewable Energy Conference (IPRECON)". The Zoom control bar at the bottom shows "Unmute", "Start video", and "Share" buttons. The system tray at the bottom right shows "31°C, Light rain" and the time "2:06 PM 8/24/2021".

Paper 49

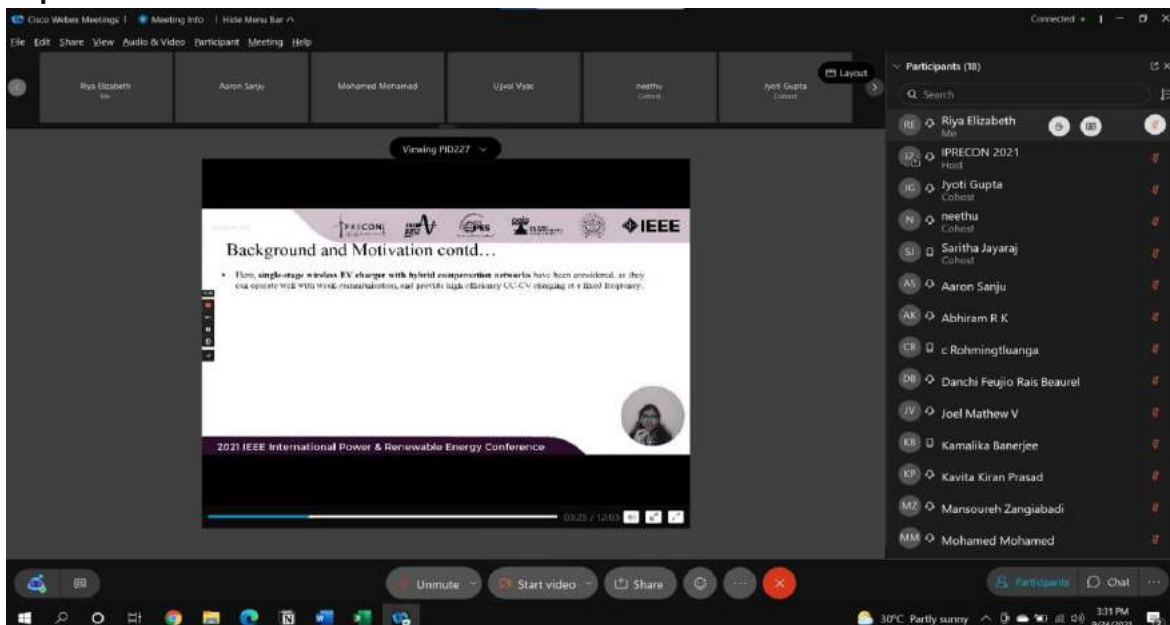
The screenshot shows a Zoom meeting interface. At the top, there are participant names: Riya Elizabeth, Betsy Biju, Aaron Sanju, Anagha, Anjana Analdas, and Ansu Bijoy. The main content is a presentation slide titled "ANALYSED SYSTEM" with a subtitle "Fig. 1. Grid connected PV system". The slide features a block diagram of a grid-connected PV system including a PV array, MPPT, Boost Converter, and Voltage Inverter (Grid Power Control) connected to a Grid. The footer of the slide reads "2021 IEEE International Power and Renewable Energy Conference (IPRECON)". The Zoom control bar at the bottom shows "Unmute", "Start video", and "Share" buttons. The system tray at the bottom right shows "31°C, Light rain" and the time "1:36 PM 8/24/2021".

Paper 58



The sixth track was on " **Energy Storage and Battery Charging Techniques**". The session chairs were Mrs. Jyoti Gupta, Ph.D. student, Ms. Saritha Jayaraj Assistant Professor, Department of EEE, Providence College of Engineering, and Mr. Ujjval B Vyas, research scholar. The track was concluded at 4.30 PM IST, appreciating all the authors and presenters for their hard work and research, and the session chairs were rendered a memento each for their cooperation and support.

Paper 227



Paper 131

The screenshot shows a Cisco Webex meeting interface. The main content is a presentation slide titled "Proposed Battery Control Design (Controllers Gains Calculation)". The slide includes the following text:

Choosing the normal operating point $\delta = 1000A$ (maximum discharging current of batteries $1000A$, $V_{bat275C}$ and $I_{bat275C}$), then the steady state values are derived to be $\delta = 0.8, 1.17, 99.8 = 951.6V, V_{bat110.4}$ and $I_{bat} = 311.7 A$.

Equations shown on the slide:

$$P_{12} = 2.246e - 11.7^2 + 2.230e - 90.2^2 + 6.1771e + 381.2$$

$$P_{13} = -17.2^2 + 2e - 11.7^2 + 3e - 90.2^2 + 9880e + 4.28$$

$$P_{14} = 8.25e - 11.7^2 + 9.64e - 90.2^2 + 0.2786e - 1.299$$

$$P_{15} = 8e - 12.7^2 + 5e - 11.7^2 + 2e - 90.2^2 + 0.1031e + 0.028$$

$$P_{16} = -2.471e - 90.2^2 - 0.2137e + 8.8404$$

$$P_{17} = 2.421e - 87e + 0.2137$$

$$P_{18} = 0.18236$$

$$P_{19} = 1.156e - 3e + 1$$

Table 8: System under study parameters value

Parameter	Value
V_{bat}	120 V
V_{bat1}	110 V
V_{bat2}	200 V
V_{bat3}	30 V
C_{bat}	7 mF
L_{bat}	1 mH
R_{bat}	24 mΩ
R_{bat1}	18 mΩ
R_{bat2}	4 mΩ
R_{bat3}	3 mΩ

Table 9: Desired specification of controllers and corresponding gain value.

Controller	η
Controlled	0.01
Bandwidth	43
Flux margin degree	45
K_p	8.615
K_i	11.5

2021 IEEE International Power & Renewable Energy Conference
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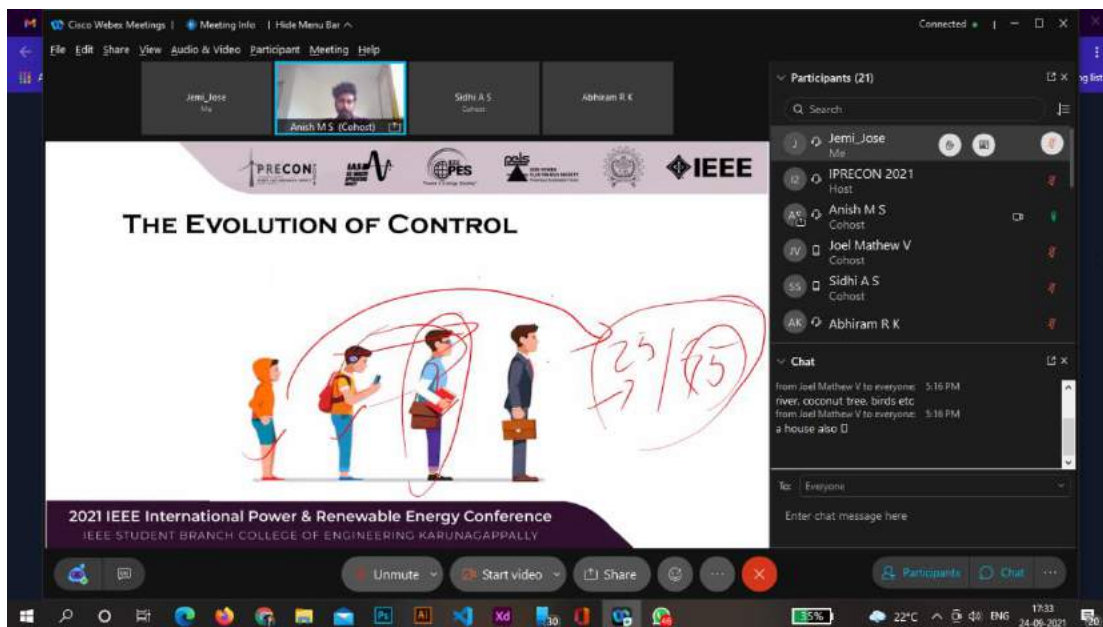
Paper 241

The screenshot shows a Cisco Webex meeting interface. The main content is a presentation slide titled "Microgrid Integrated Charging Infrastructure". The slide features a complex block diagram of a microgrid system with various components like solar panels, wind turbines, batteries, and charging stations. Below the diagram, it says "Fig. 1 Hybrid V-amp microgrid integrated charging infrastructure".

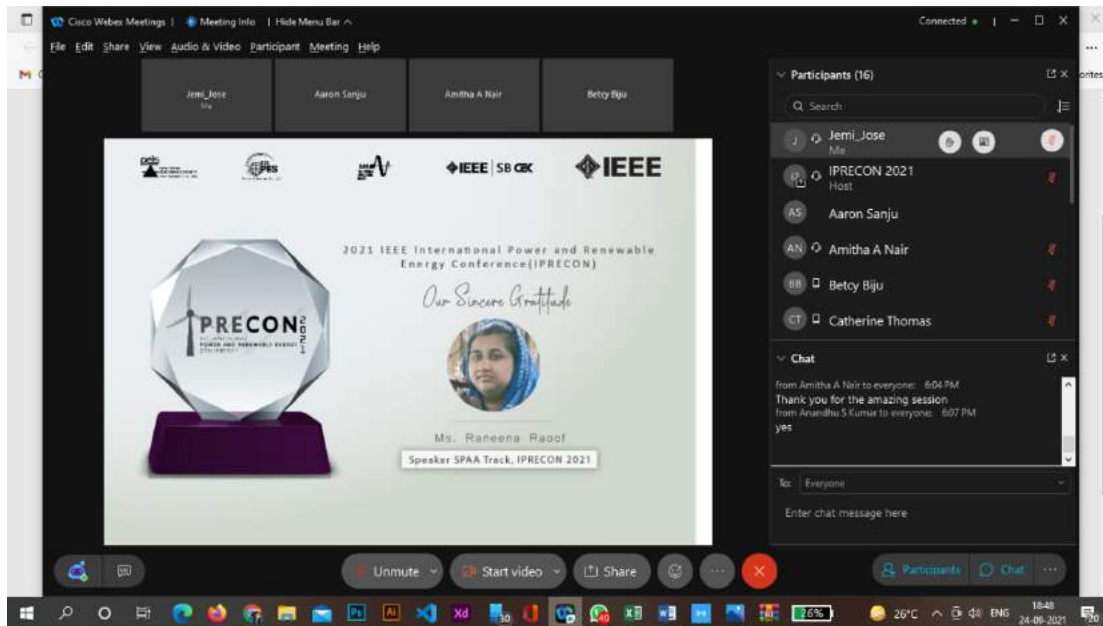
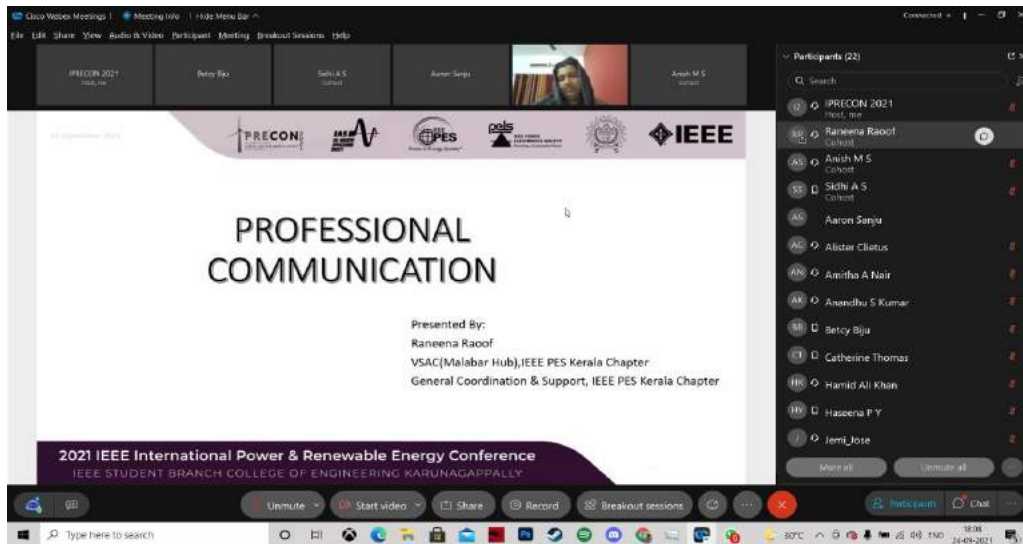
2021 IEEE International Power & Renewable Energy Conference
 (IAE) STUDENT TRAINING COLLEGE OF ENGINEERING KAPPAKANGARALE

The meeting interface also shows a list of participants on the right side, including Rlys Elizabeth, IPRECON 2021, Jyoti Gupta, neethu, Saritha Jayaraj, Aaron Sanju, Abhiram R K, c Rohmingtuanga, Danchi Feujio Rais Beurel, Joel Mathew V, Mansoureh Zanglabadi, Mohamed Mohamed, prachi M Joshi, and Shailendra.

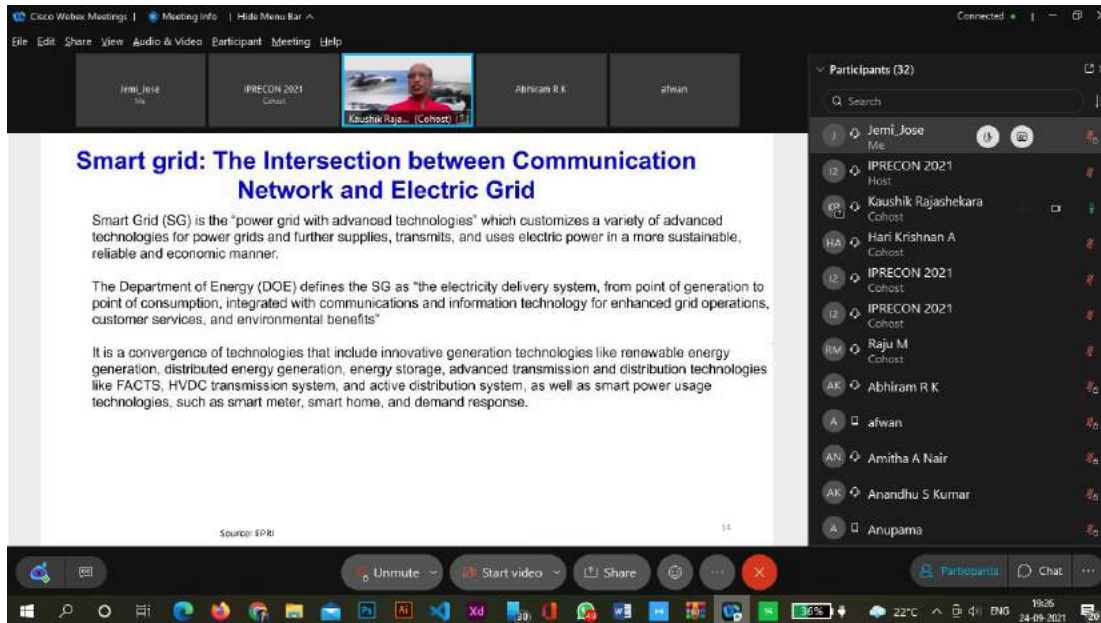
After finishing off all the tracks of the day, the event continued with our first **Student Professional Awareness Track** which was primed on “The Bridge Between Student and Professional Life” by Anish M S, Public Relations Coordinator, IEEE Germany Section Coordinator, New Initiatives & Projects Subcommittee, IEEE PES YP. The event started sharp at 05:00 pm (IST) and continued till 06:15 pm (IST). One of Life’s most confusing moments comes when a student has to leap from school to work. Crossing the bridge from your education life to your work life is a pivotal juncture that sets the stage for the rest of your life He pointed out some enlightening entities in the field which were appreciated by the attendees and was offered a memento as a token of appreciation for his incredible efforts and support for the event.



The second session of **Student Professional Awareness Track** was prepared on “Professional Communication” by Raneena Raof, New Initiatives & Project Subcommittee Member, IEEE PES YP, Content Team Coordinator, IEEE PES YP Kerala, and Vice Student Activities Coordinator, IEEE PES Kerala Chapter. The event started sharp at 06:15 pm (IST) and continued till 07:15 pm (IST). Professional communication is a specialty sub-field of communication that pays close attention to the theories and practice of communication within professional contexts. They encompass written, oral, visual, and digital communication within a workplace context. She specified out some intellectual entities in the field which were appreciated by the attendees and was offered a memento as a token of appreciation for her incredible efforts and support for the event.



Our first **Keynote Session** on "Convergence of Enabling Technologies for Smart Grid" by "Dr. Kaushik Rajashekara", Distinguished Professor of Engineering, University of Houston. The event started sharp at 07:15 pm (IST) and continued till 08:30 pm (IST). He addressed the smart grid concept which is transforming utility operations at an unprecedented rate and is probably the most significant consideration in bringing IT into the operational environment. She specified out some mind-broadening entities in the field which were appreciated by the attendees and was offered a memento as a token of appreciation for her incredible efforts and support for the event.



The screenshot shows a Cisco Webex meeting interface. The main content is a slide with the following text:

Smart grid: The Intersection between Communication Network and Electric Grid

Smart Grid (SG) is the "power grid with advanced technologies" which customizes a variety of advanced technologies for power grids and further supplies, transmits, and uses electric power in a more sustainable, reliable and economic manner.

The Department of Energy (DOE) defines the SG as "the electricity delivery system, from point of generation to point of consumption, integrated with communications and information technology for enhanced grid operations, customer services, and environmental benefits"

It is a convergence of technologies that include innovative generation technologies like renewable energy generation, distributed energy generation, energy storage, advanced transmission and distribution technologies like FACTS, HVDC transmission system, and active distribution system, as well as smart power usage technologies, such as smart meter, smart home, and demand response.

Source: EPRI

The meeting interface also shows a list of participants on the right, including Jemi Jose, IPRECON 2021, Kaushik Rajashekara, Hari Krishnan A, IPRECON 2021, IPRECON 2021, Raju M, Abhiram R K, afwan, Amitha A Nair, Anandhu S Kumar, and Anupama.

IPRECON 2021 was successfully able to exceed everyone's expectations. Everyone Involved in the conference had quite an exhilarating time as were evident by their reviews. It was indeed the beginning of the CLUB OF 6 Conferences in India and IEEE SB CEK Takes immense pride to be the one to come up with such an endeavour. IPRECON 2020 Enlightened not only the youth, but even the professionals into a path of diverse technical Advancements and was indeed a full-fledged conference.

Day 2

The second day of IPRECON 2021 went well on 25th September 2021, one of the most remarkable paper presentations, special sessions, keynote addresses and an astounding humanitarian track orchestrated for the attendees. It started with 3 parallel tracks through webex, from 9.30 -12.30PM IST, both the authors as well as the presenters came up with works and presented brilliantly and the coordination and management of the organizers elevated the quality of the conference to a higher level worth experiencing.

Track 7 was **Power Electronic Converters & Control Systems**. Session Chairs for the track were Mrs. Jyothi Gupta, PhD Scholar, SVNIT and Mrs. S Vimala Gayathri, Research Scholar, VIT University, Chennai. Track 8 was on **Electric machines & devices and Power quality issues**, Session chairs were Mr. Antony Peter, PhD Scholar, APJ KTU and Ms. Ruby Vincy, PhD Scholar VIT University, Chennai. This track contained seven papers, under the paper titles.

Paper 196

The screenshot shows a Cisco Webex meeting interface. The top navigation bar includes 'File', 'Edit', 'Share', 'View', 'Audio & Video', 'Participant', 'Meeting', and 'Help'. The meeting title is 'IPRECON 2021'. The main content area displays a slide titled 'Introduction' with a block diagram of an electrical vehicle (EV) showing a Bidirectional DC-DC Converter, Bidirectional Inverter, and Motor. The slide is from the 2021 IEEE International Power & Renewable Energy Conference. The bottom control bar shows 'Unmute', 'Start video', 'Share', and 'Participants' (11).

Paper 213

The screenshot shows a Cisco Webex meeting interface. The top navigation bar includes 'File', 'Edit', 'Share', 'View', 'Audio & Video', 'Participant', 'Meeting', and 'Help'. The meeting title is 'IPRECON 2021'. The main content area displays a slide titled 'Z-source Inverter' with the following text:

- It overcomes the disadvantage of traditional inverters
 - Limited obtainable output voltage range
 - Vulnerable to EMI noise
 - Combined system has lower reliability
- Works as a buck-boost inverter
- Offers novel power conversion concept.
- Both switches from the same leg trigger at the same time do not cause any failure.

The slide is from the 2021 IEEE International Power & Renewable Energy Conference. The bottom control bar shows 'Unmute', 'Start video', 'Share', and 'Participants' (15).

Paper 255

Viewing T255

...duction (contd.)

Mode Dependent Model

1. Cumbersome model since there are 12 modes of operation.
2. Optimization process needs to be run for each mode.

Unified Fourier Model

1. Unified expression for all modes of operation.
2. Model becomes accurate with introduction of more number of harmonics, but model order increases.

2021 IEEE International Power & Renewable Energy Conference
 BEL SITHI, JERAMBAH COLLEGE OF ENG, BELARUNG, KARUNAGARIPALY

Participants (16): Jemi Jose, IPRECON 2021, jyoti gupta, Vimala Gayathri S, BIJU K, Dharavath Kishan, Doğan Çelik, Doğan ÇELİK, Enock, hanumanthu ravi teja, Prachi Mafidar Joshi.

Paper 262

Viewing T266

A Single Stage Three Phase Bidirectional Rectifier With Power Electronic Star-Star Connection Transformer

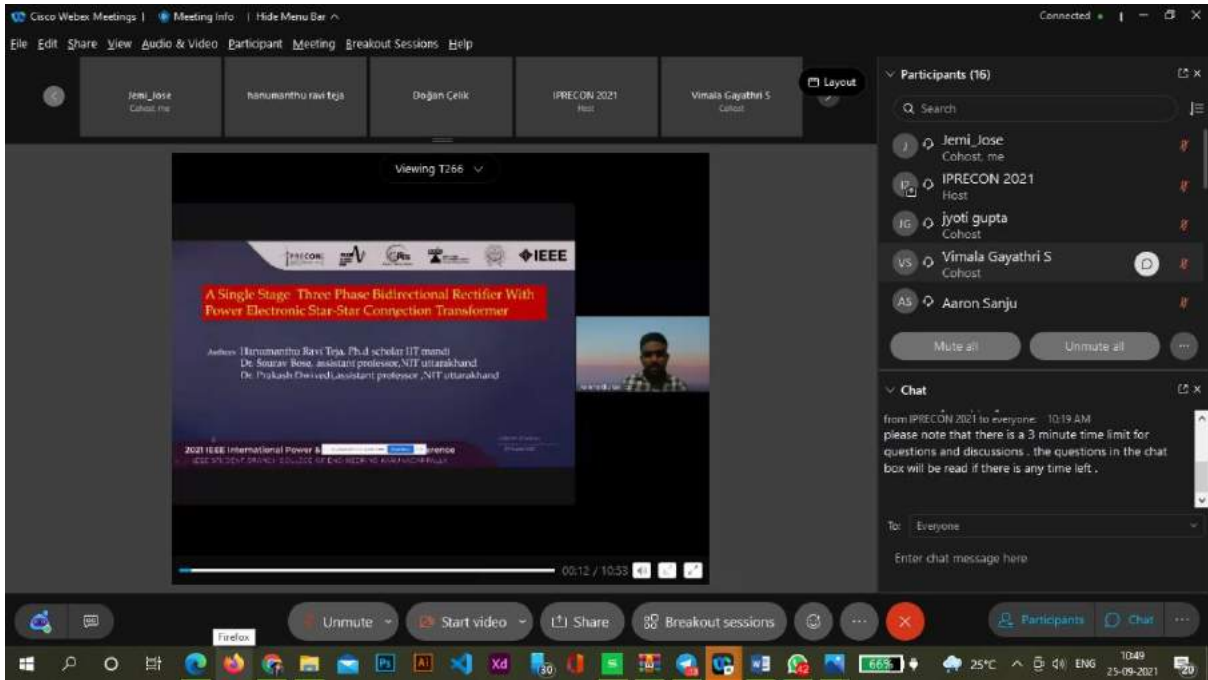
Authors: Hanumanthu Ravi Teja, Ph.D scholar, IIT Mandi
 Dr. Binay Bose, Assistant professor, NIT Uttarakhand
 Dr. Prakash Das, Assistant professor, NIT Uttarakhand

2021 IEEE International Power & Renewable Energy Conference
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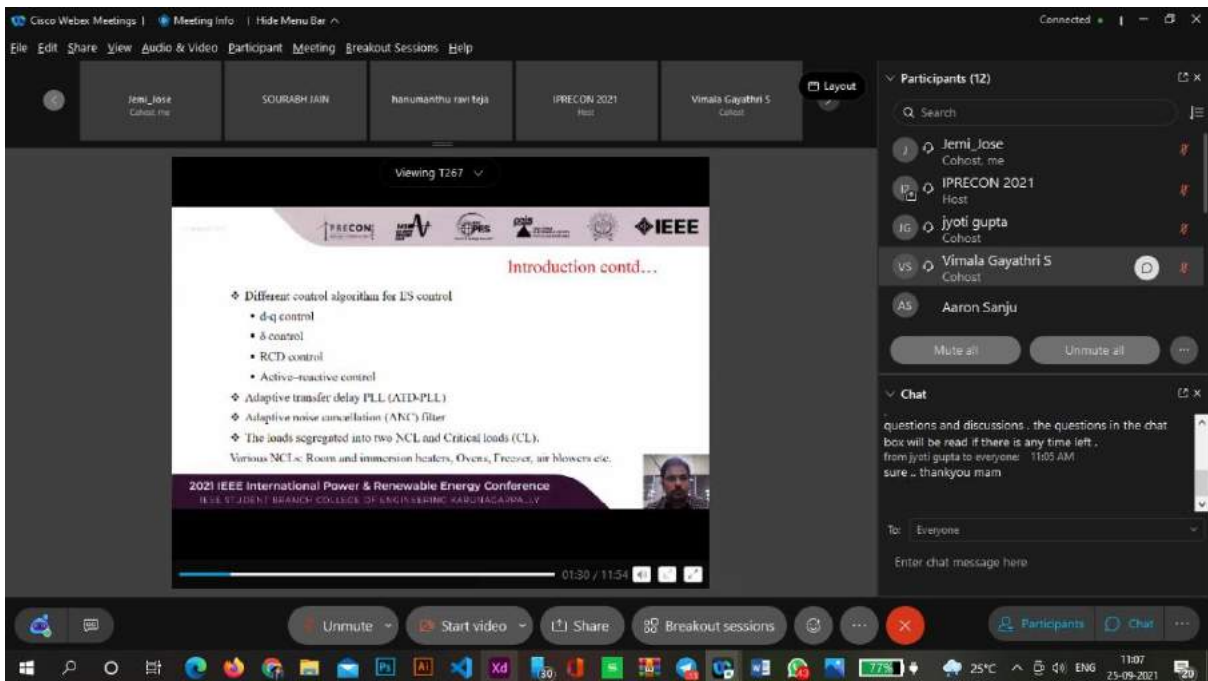
Participants (16): Jemi Jose, IPRECON 2021, jyoti gupta, Vimala Gayathri S, Aaron Sanju.

Chat: from IPRECON 2021 to everyone: 10:19 AM please note that there is a 3 minute time limit for questions and discussions. the questions in the chat box will be read if there is any time left.

Paper 266



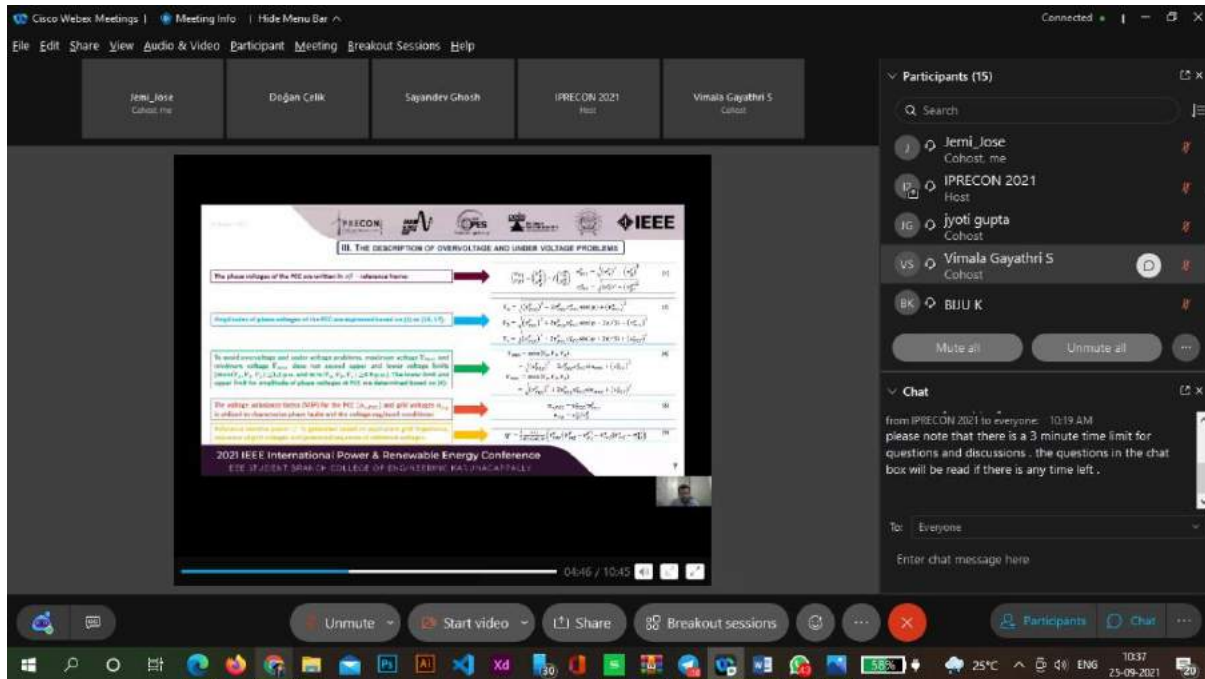
Paper 267



We concluded this track by presenting a token of love to our session chairs.

Track 8 was on **Electric machines & devices and Power quality issues**, Session chairs were Mr. Antony Peter, PhD Scholar, APJ KTU and Ms. Ruby Vincy, PhD Scholar VIT University, Chennai. This track contained seven papers, under the paper titles

Paper 112



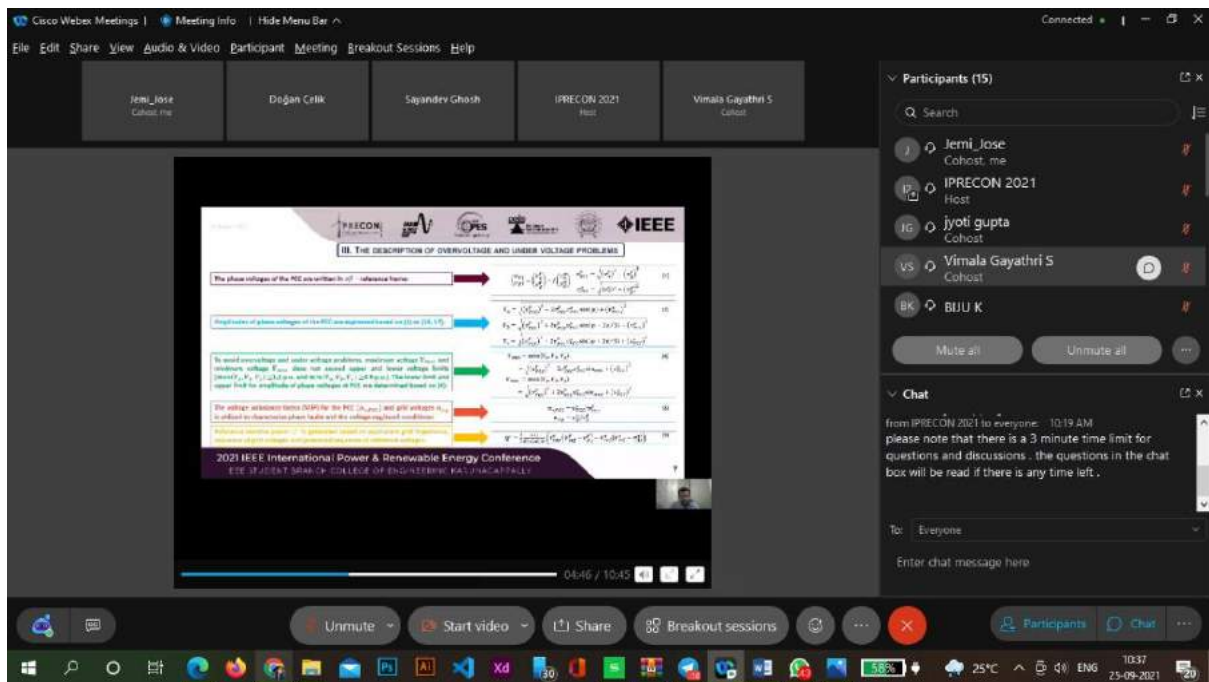
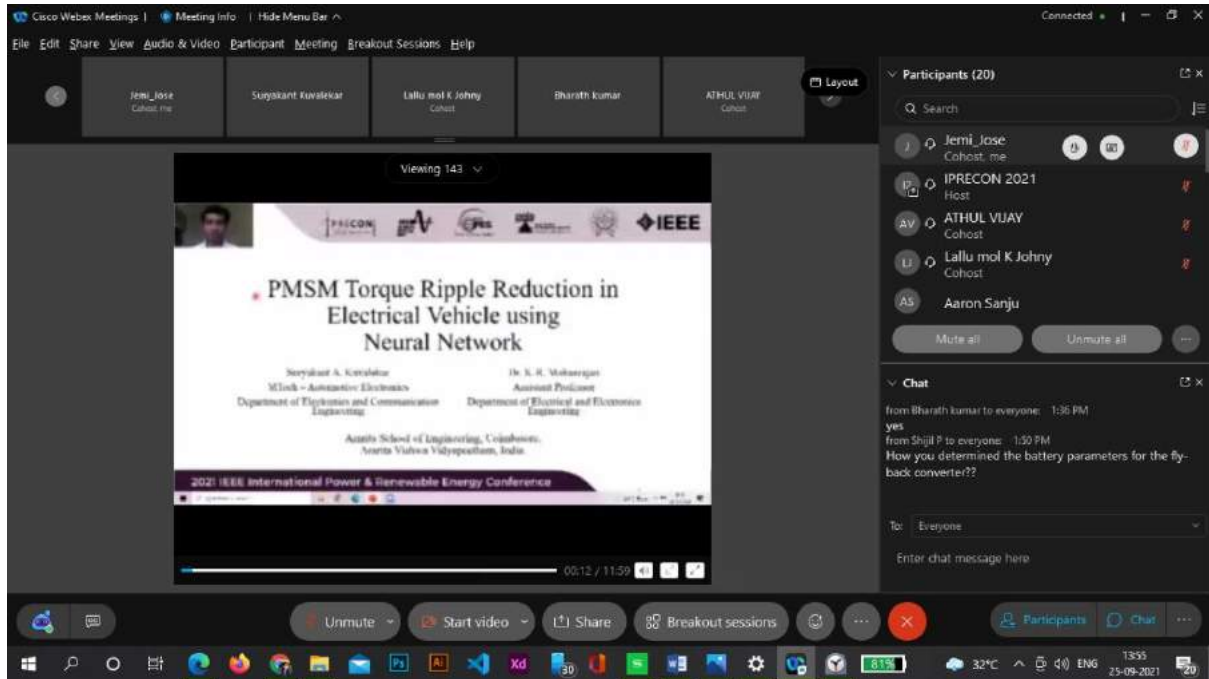
Several more papers were presented in this session.

Track 9 was on **Renewable Energy Resources**, Session Chairs were Mr. Raju Manuel, PhD Scholar, Korpagam University, Coimbatore, Ms Soniya Vijayakumar PhD Scholar, German Research Center of AI and Mr. Robin Anto, PhD Scholar, Dept of HRED. With attendees including presenters, students, research scholars and professionals, the session turned interactive with post-presentation discussions. There were several presentations from each tracks, which all were very informative, interesting and highly vibrant with the interaction of presenters, students, research scholars and professionals.

Several paper ids 123, 124, 132, 138, 149, 150, 151, 155 presented after that. All the presenters were able to provide a clear and concise presentation on their respective work.

The 3 parallel tracks were concluded by giving a token of appreciation from SB to all the respective session chairs for their efforts and support. And by that first session of day 2 of IPRECON 2021 was concluded.

The second session Was having Tracks 10, 11 and 12 parallelly from 1:30 PM – 4:30 PM IST. Track 10 was on **Electric Vehicles**, the session Chairs being Mr. Lallu Mol K Johny, PhD Scholar, APJ AKTU and Mr. Athul Vijay, PhD Scholar, NIT Surat. The paper title of this track is as follows.





The screenshot shows a Cisco Webex meeting interface. The main content is a presentation slide titled "Electric Powertrain Performance, Mileage And Drive Cycle Analyzer For Electric 2 & 3-wheelers". The slide includes the following text:

- Paper ID: 183
- Author: Praveen, Bhaik Mohd Muneer (Department of Electrical Engineering, COEP)
- Co-Author: Dr. Muneer Mohd. (Department of Electrical Engineering, COEP)
- Dr. Muneer Mohd. (MBA, India Automation Pvt. Ltd.)
- 2021 IEEE International Power & Renewable Energy Conference
- 1433 STREET, PRAJNAN COLLEGE OF ENGINEERING, KARANJAKHURJAT

The meeting interface shows a list of participants: Jemi Jose (Cohost), afwan, wind, Lallu mol K Johny (Cohost), and ATHUL VIJAY (Cohost). The chat window on the right shows a conversation:

- from Bharath kumar to everyone: 1:36 PM
- yes
- from Shijil P to everyone: 1:30 PM
- How you determined the battery parameters for the fly-back converter??

The bottom of the screen shows the Windows taskbar with various application icons and system tray information including the date 25-09-2021 and time 14:24.

The screenshot shows a Cisco Webex meeting interface. The main content is a presentation slide titled "Motivation" with a list of four points:

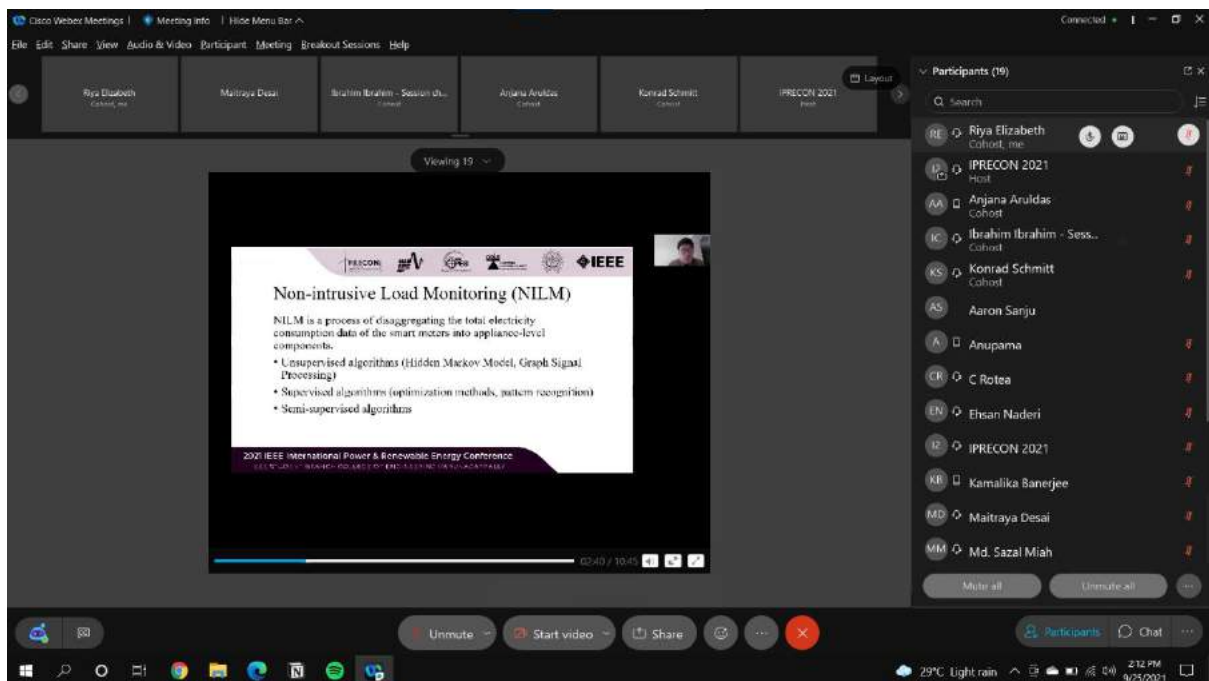
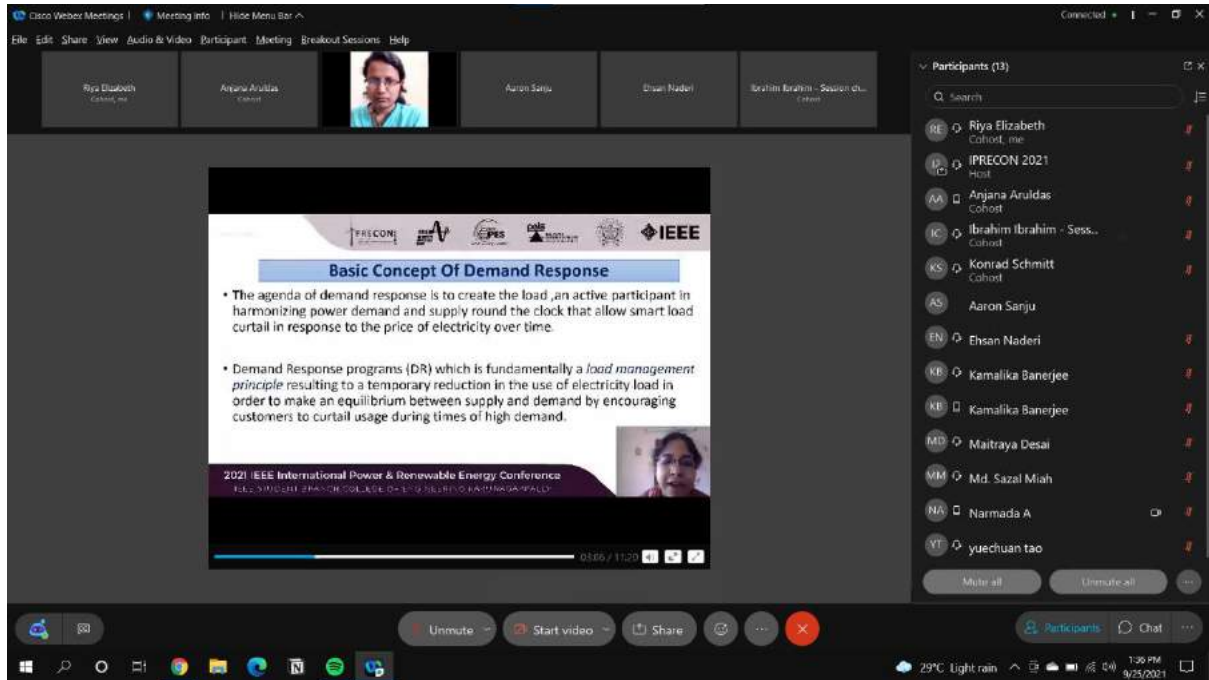
1. In urban conditions, more than 20% of vehicle kinetic energy can be recycled as per the research details and survey. Most of the kinetic energy is getting wasted as heat to the atmosphere due lack of effective and efficient braking control strategies.
2. Studying and understanding the working and outcome of one such control strategy and an algorithm is carried out and a detailed explanation is provided.
3. Research indicates that almost 50% of energy in a pure electric vehicle driving system is discarded into the atmosphere in the form of heat by a conventional braking system during deceleration. Even in suburban circumstances, the quantity of discarded energy is as high as 24%.
4. Therefore, to solve the shortage of fuel as well as that of the endurance mileage, it is crucial to identify methods for enhancing the regenerative braking technology of the pure electric vehicle.

The meeting interface shows a list of participants: Jemi Jose (Cohost), Shijil P, afwan, Lallu mol K Johny (Cohost), and ATHUL VIJAY (Cohost). The chat window on the right shows a list of participants: Jemi Jose (Cohost), IPRECON 2021 (Host), ATHUL VIJAY (Cohost), Lallu mol K Johny (Cohost), Aaron Sanju, afwan, Bharath kumar, Shijil P, and Suryakant Kuvalekar.

The bottom of the screen shows the Windows taskbar with various application icons and system tray information including the date 25-09-2021 and time 14:37.



Track 11 was on **Micro Grid and Smart Grid**, the session chairs were Mr. Konrad, PhD Scholar, Texas University and Mr. Ibrahim A Ibrahim, PhD Scholar, Macquarie university, Australia



Cisco Webex Meetings | Meeting Info | Hide Menu Bar

File Edit Share View Audio & Video Participant Meeting Breakout Sessions Help

Riya Elizabeth (Host) | IPRECON 2021 (Host) | Yudhan Fatmahaningrum (Participant) | Anjana Aruldas (Participant) | Konrad Schmitt (Participant) | Kamalika Banerjee (Participant)

Methodology

- This research uses an entire year's accumulation of energy data from a large hypermarket via smart meters that record temperature and energy consumption data.
- Ordinal binning is then performed on this dataset to create three separate datasets of consisting of 3, 5 and 7 classes of energy each.

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05:02 / 11:51

Unmute Start video Share

29°C Light rain 1:07 PM 9/25/2021

Participants (19)

- Riya Elizabeth (Host)
- IPRECON 2021 (Host)
- Anjana Aruldas (Participant)
- Ibrahim Ibrahim - Sess... (Participant)
- Konrad Schmitt (Participant)
- Aaron Sanju (Participant)
- Anupama (Participant)

Chat

from Anjana Aruldas to everyone: 1:00 PM
sorry for the delay.

from Ibrahim Ibrahim to everyone: 1:50 PM
That is alright. Such things happen.

To: Everyone

Enter chat message here

Cisco Webex Meetings | Meeting Info | Hide Menu Bar

File Edit Share View Audio & Video Participant Meeting Breakout Sessions Help

Riya Elizabeth (Host) | Ibrahim Ibrahim - Session Dis... (Participant) | Konrad Schmitt (Participant) | Anjana Aruldas (Participant) | Yudhan Fatmahaningrum (Participant) | Mubaya Doss (Participant)

Developed Microgrid

Diagram of the developed MEG

$$P_{DG} = \frac{1}{2} \rho v^3 C_p C_{tmax} C_{tmin}$$

$$P_{PV} = A_p \times I_p \times \eta_p$$

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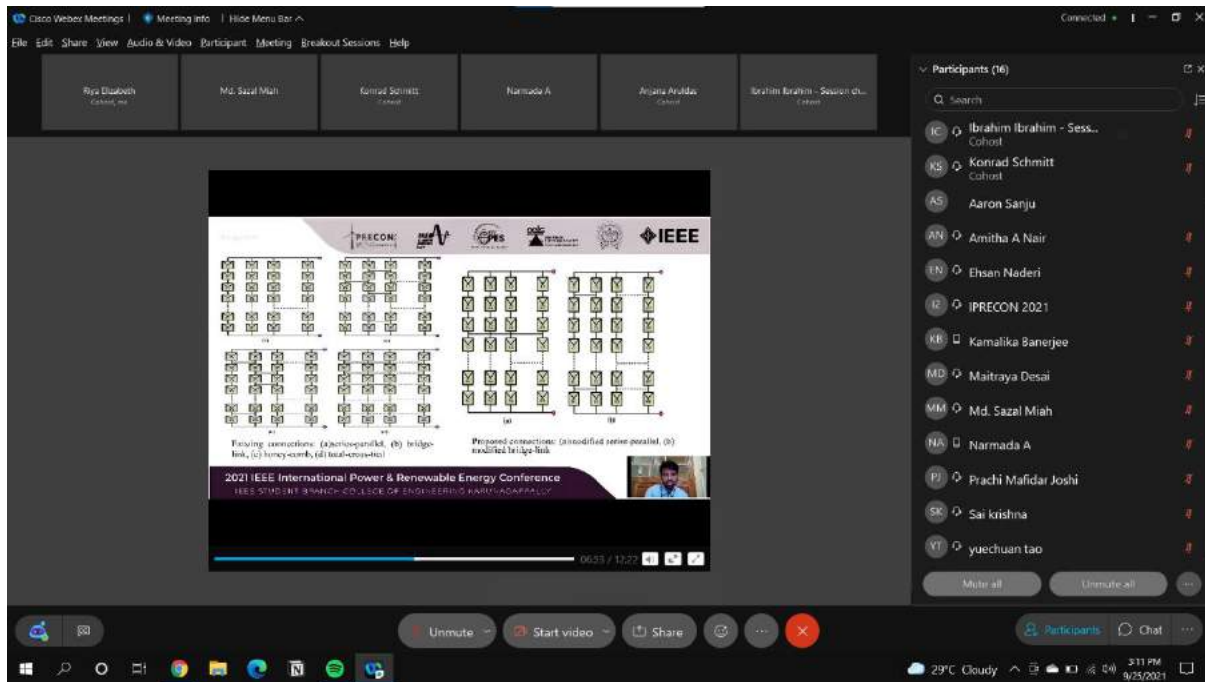
01:35 / 10:32

Unmute Start video Share

29°C Cloudy 2:24 PM 9/25/2021

Participants (19)

- Konrad Schmitt (Participant)
- Abhiram R K (Participant)
- Anupama (Participant)
- C Roitea (Participant)
- Ehsan Naderi (Participant)
- IPRECON 2021 (Participant)
- Jayakumar (Participant)
- Kamalika Banerjee (Participant)
- Maitraya Desai (Participant)
- Mid. Sazal Miah (Participant)
- Narmada A (Participant)
- Pavitra G Dummawad (Participant)
- Prachi Mafidar Joshi (Participant)

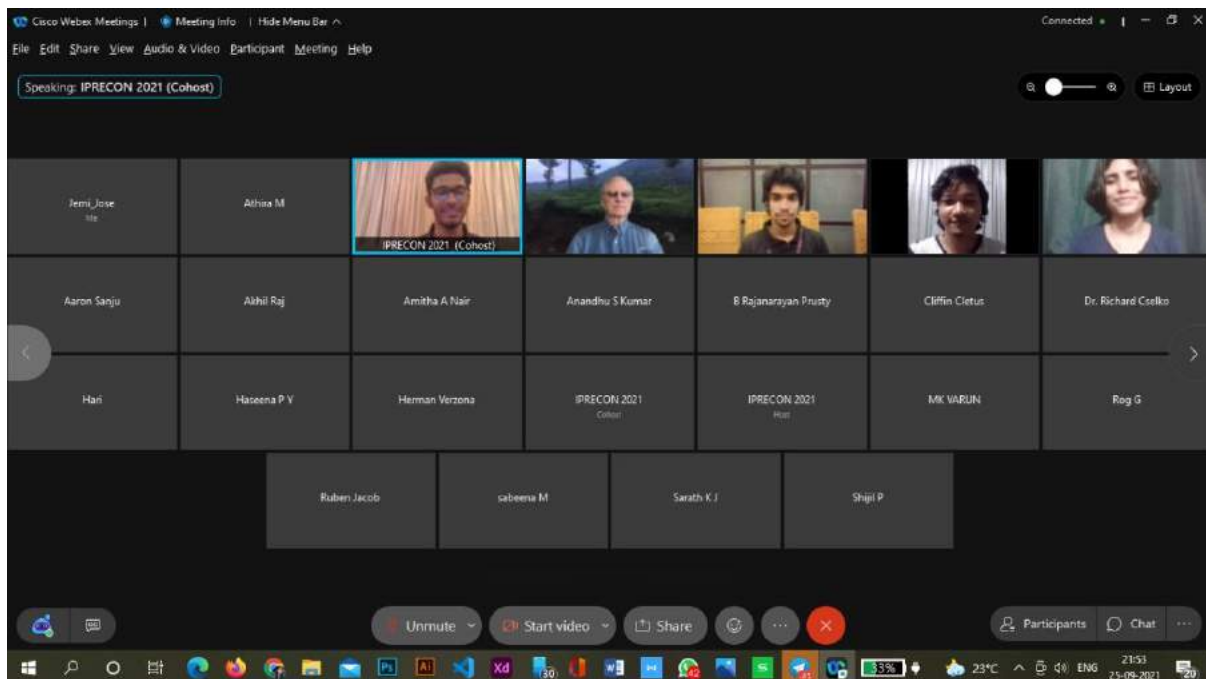


Track 12 was on **Artificial Intelligence Techniques & Deep Learning**, the session chairs for the track were Ms. Amina Beevi, PhD Scholar APJ AKTU and Mr. Chempak Kumar A, PhD Scholar, University of Kerala. The session concluded by thanking and appreciating all the authors and presenters for their hard work and research. It was a very informative session and all the attendees were very pleased with what they have learned and experienced. The session chairs were rendered a memento each for their support and cooperation. The time management and session coordination of the team were also well commendable. The paper title and paper id are as follows:

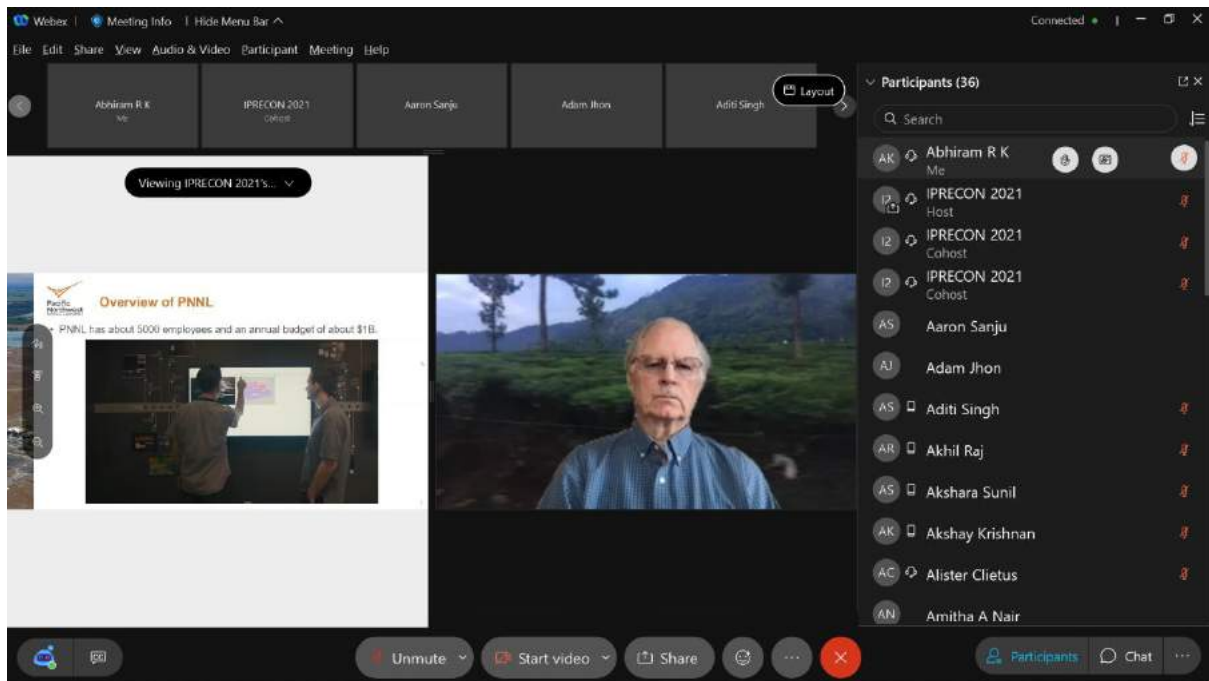
The afternoon session of the second day of IPRECON 2021 was eventful with a special session, key note session and an industrial visit. A special session on **The Potential of Electricity Based Fuels for Low Emission Personal Cars** by Dr. Peter Magyar, Past IEEE IAS CMD chair from 5:30 PM – 6:30 PM IST. It addressed the rising potential and market of renewable and electricity-based fuels in transportation. It was a very interesting session attendees ask their queries and had discussions on their opinions. It was followed by the Key note address by Mr Brad Lehman, Prof. Department of Electrical & Computer Engineering, Northeastern University, Boston on **The Future Influence of Artificial Intelligence & Renewable Energy** from 7:30 PM – 8:30 PM IST. The session focused on the relevance of artificial intelligence & renewable energy in the current as well as future world, sharing some of his experience and developments in the fields. The session was very interactive as well as informative, the attendees were so eager to know more about the field and were asked to share their queries on the topic.

The concluding session of the second day of IPRECON 2021 was a **Virtual Laboratory Visit to PNNL** by Mr. Richard Kouzes, Laboratory Fellow at the Department of Energy's (DOE's) Pacific Northwest National Laboratory (PNNL) working in the areas of neutrino science, homeland security, non-proliferation, and computational applications accompanied entirely.

It was such a great experience to visit a leading centre for scientific discovery in chemistry, data analytics and earth science, and technological innovation in sustainable energy and national security, scheduled from 9:00 PM - 10:00 PM IST. It was a very amazing session as we were able to visit several new gadgets and devices as well as to witness some incredible possibilities of technical advancements for the future.

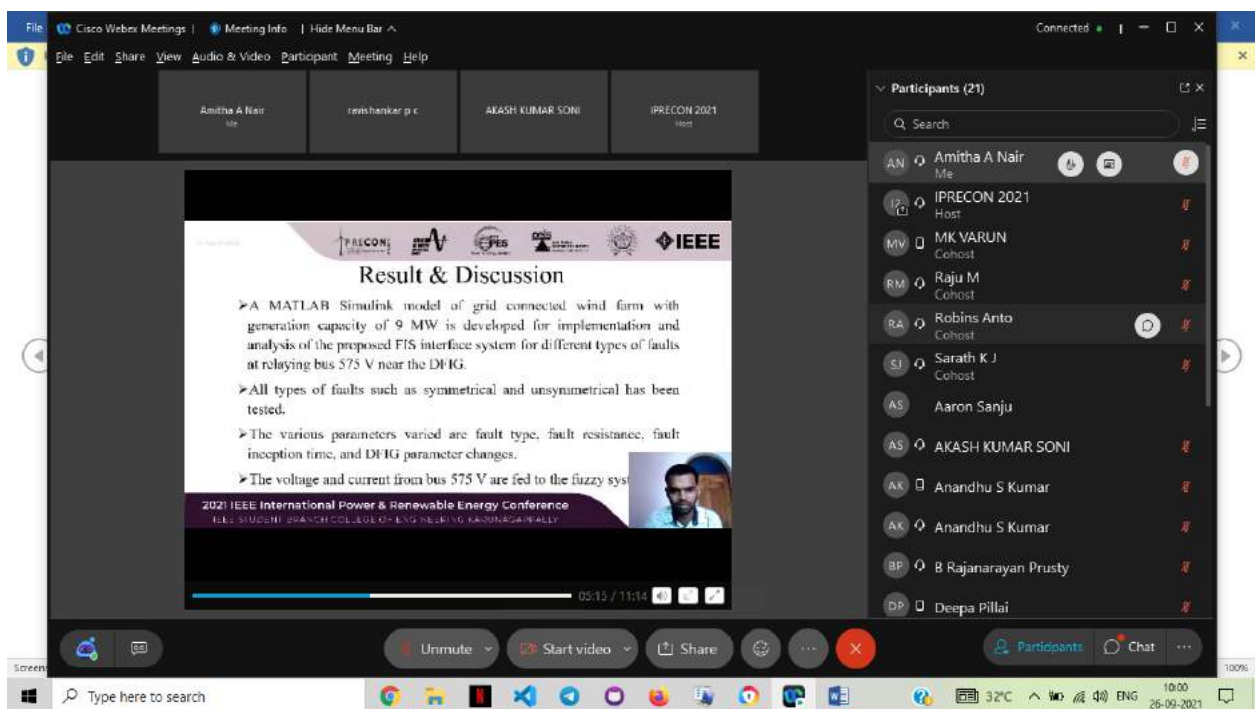


The second day thus turned eventful as it witnessed some of the remarkable paper presentations, special sessions, keynote address and an astounding industrial visit. The coordination and management of the organizers elevated the quality of the conference to a higher level.

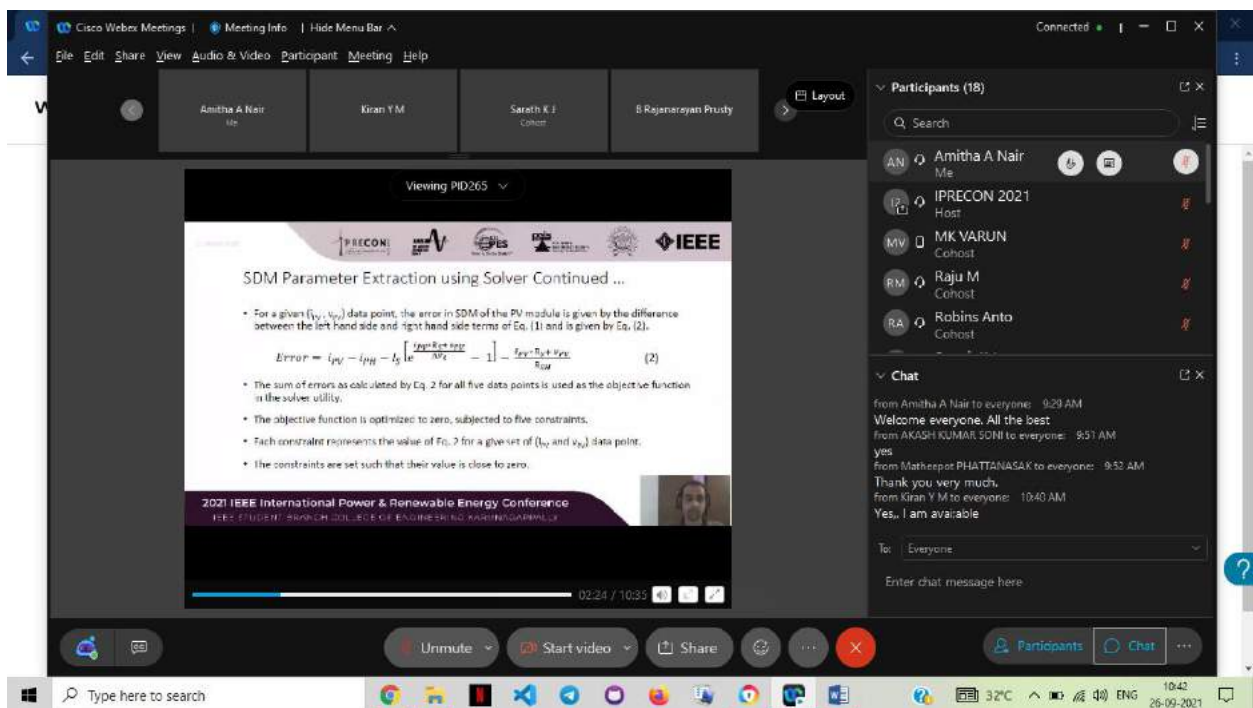


Day 3

IEEE International Power and Renewable Energy Conference organized by IEEE Student Branch College of Engineering Karunagappally in association with IEEE Industry Applications Society came to end on 26th September after three days of incessant Activities and prolific deliberations of interesting as well as informative ideas. Due to the pandemic the virtual platform has been opted for the conference.

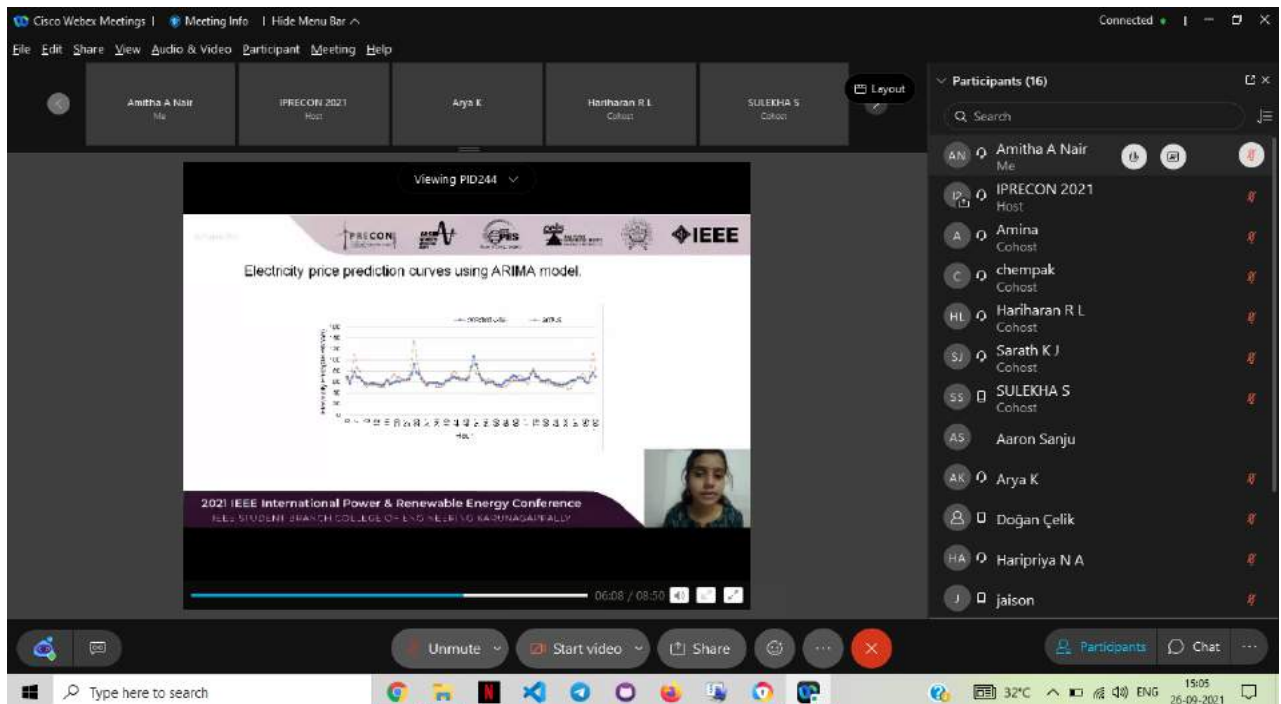
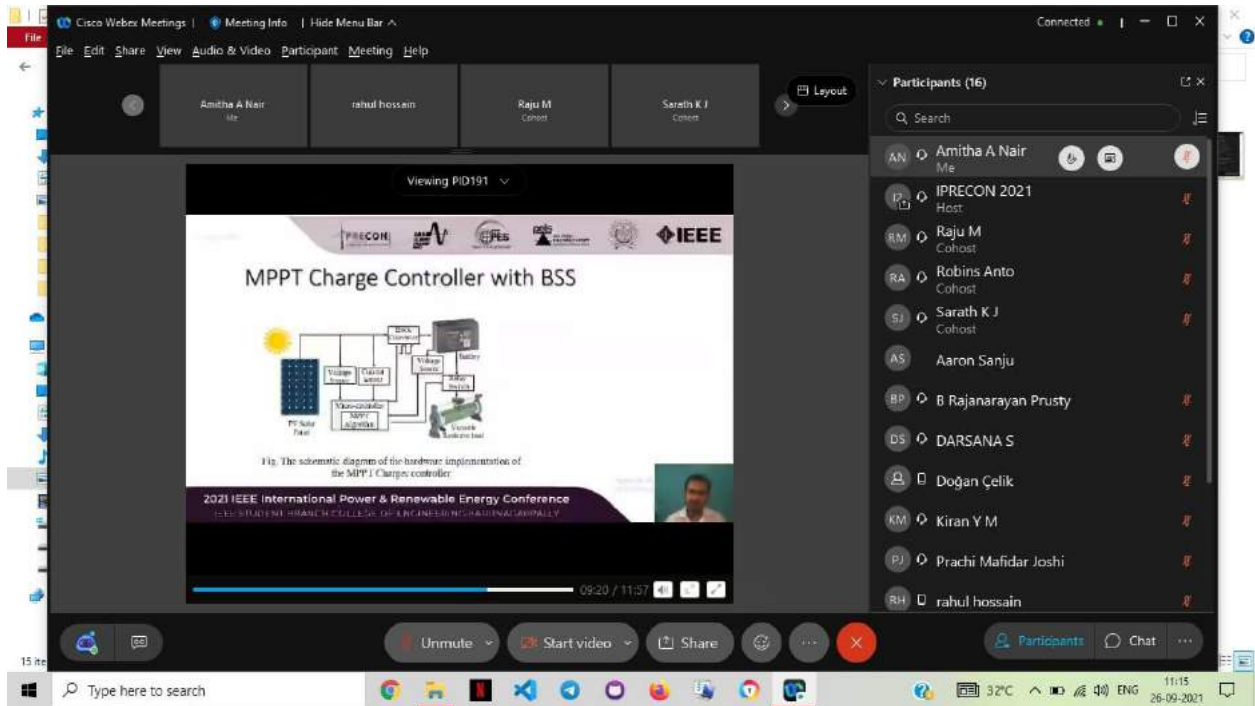


The final day of IPRECON 2021 dated 26th September Sunday consisted of 6 Tracks, Tracks 13 through 18, a Humanitarian Track and the Closing Ceremony. The first session consisted of Tracks 13 through 15 running parallelly from 9: 30 AM to 12: 30 PM IST. Track 13 was on the Topic Renewable Energy Resources consisting of 7 paper presentations. The Session Chairs were Mr. Raju Manuel, a PhD Scholar from the Karpagam Academy of Higher Education, Coimbatore and Mr. Robins Anto, a Research Scholar at the Department of Hydro and Renewable Energy at IIE Roorkee. Track 14 was on the topic Electric Vehicles consisting of 6 paper presentations. The Session Chair were Mrs. Lallumol K Johny a Research Scholar affiliated with APJ Abdul Kalam University, Kerala and Mrs. Kripalakshmi Thiagarjan , Research Scholar from Vellore Institute of Technology, Chennai.



Track 15 was on the Topic Microgrid, Smartgrid and Power Quality Issues consisting of 8 paper presentations. The Session Chairs were Mr. Konrad Erich Kork Schmitt, a PDH Scholar from the Texas Technical University and a Research Assistant at GLEAMM and Mr. Ibrahim A Ibrahim, a PHD candidate with the Macquarie University, Sydney, Australia and a Visiting PhD Scholar with the CSIRO Energy, Newcastle, Australia. All the paper presentations were followed by a Q/A session where the respective session chairs asked questions if they had any and the attendees were allowed to address any and all of their doubts. After the end of each Track the respective Session Chair were given a Memento as a token of appreciation for taking the time out of their busy schedules to attend the conference whilst addressing the

responsibilities of being a Session Chair. All the tracks in the First Session ended at and around 12: 30 IST.



The Second Session consisting of Tracks 16 through 18 started simultaneously at 1: 30 PM IST and ended at 3: 30PM IST. Track 16 was on the Topic Artificial Intelligence Techniques & Deep Learning consisting of 6 Paper Presentations. The Session Chairs were Mrs. Ameena Beevi PhD

Scholar at APJ Abdul Kalam Technical University and the Assistant Professor at the Sree Buddha College of Engineering Elavumthitta, Mr Chempak Kumar A, PhD Scholar in Computer Science and Engineering at the University of Kerala and an Assistant Professor at the College of Engineering Muttathara and Mr Hariharan L, Research Scholar at the National Institute of Technology Karnataka in Information Technology.

Track 17 was on the topic Communication & Allied consisting of 6 paper presentations. The Session Chair was Mr. Jihās Khan a PhD Scholar from the National Institute of Technology, Calicut.

The screenshot shows a Cisco Webex Meeting interface. The main content is a presentation slide titled "Discussions" and "Comparison of Metrics for QR₁ and QR₂ for the Three PV Arrays". The slide contains the following text:

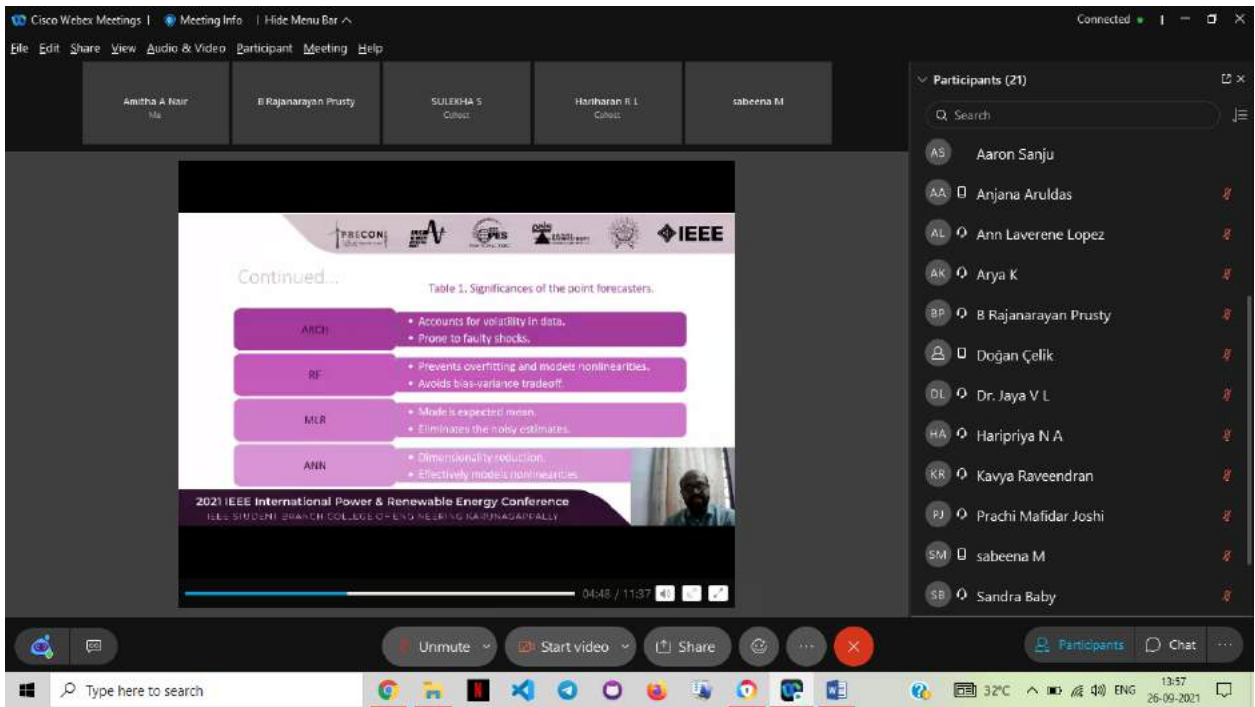
- A lower error or score is preferable as it indicates a comparatively better model.
- From the table, it is seen that QR₁ has the lowest metrics for almost all the cases as compared to QR₂.
- Lower values of MAE and RMSE indicate forecasts closer to actual observations.

The table on the slide is as follows:

Array	Model	MAE	RMSE	QS	WS (50%)	WS (90%)
PV ₁	QR ₁	2.5850	3.2320	1.3431	5.9352	7.9690
	QR ₂	2.6536	3.3956	1.5532	6.5783	8.7655
PV ₂	QR ₁	2.0389	2.3208	1.0170	4.6264	5.9821
	QR ₂	2.2199	2.8427	1.0819	4.9542	7.1451
PV ₃	QR ₁	2.1084	2.6562	0.9551	3.3965	7.4709
	QR ₂	2.2767	2.9758	0.948		

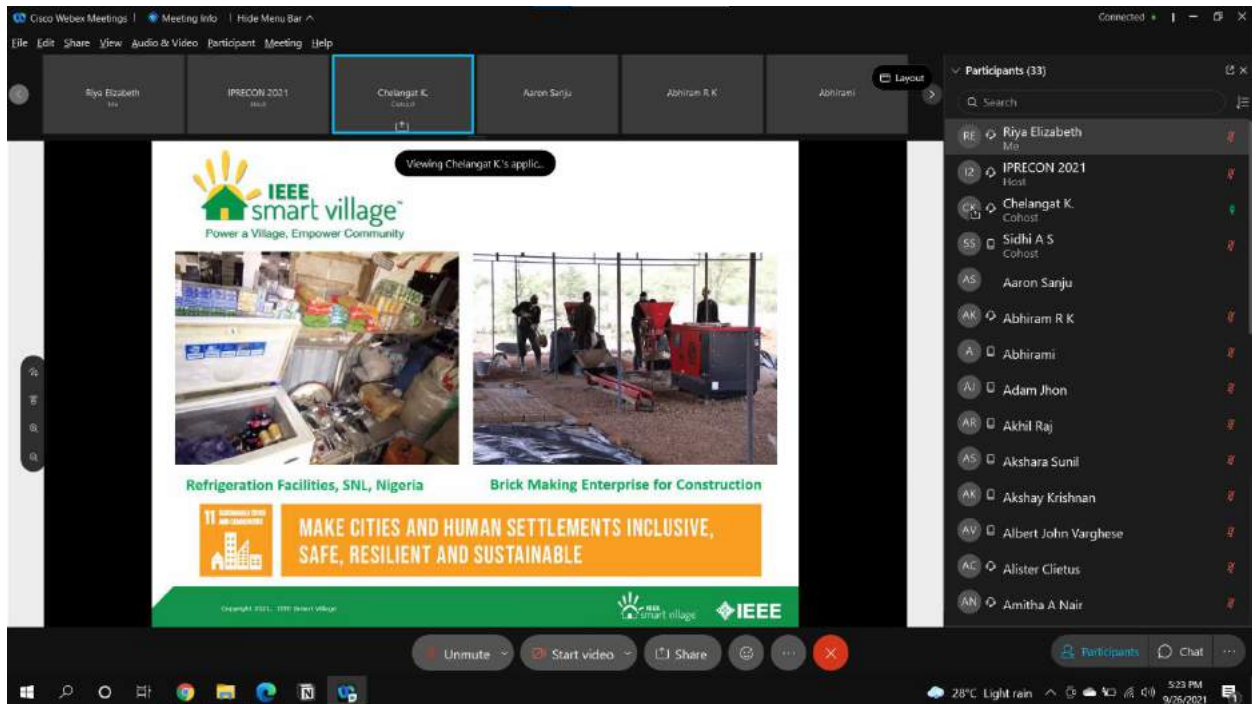
The slide footer mentions "2021 IEEE International Power & Renewable Energy Conference" and "IEEE STUDENT BRANCH COLLEGE OF ENGINEERING KARUNAGAPPALLY".

Track 18 was on the Topic Surveillance and Monitoring consisting of 4 paper presentations. The Session Chairs were Mr. Elangovan K, PhD Scholar in the Department of Avionics at the Indian Institute of Space Science and Technology, Trivandrum and Mrs. Sabeena K, advisor of IEEE Student Branch College of Engineering Karunagappally and the Assistant Professor of the Computer Science Department at the same college.



Just as in the morning session all the paper presentations were followed by a Q/A session where the respective session chairs asked questions if they had any and the attendees were allowed to address any and all of their doubts. After the end of each Track the respective Session Chair were given a Memento as a token of appreciation for taking the time out of their busy schedules to attend the conference whilst addressing the responsibilities of being a Session Chair. All the tracks in the Second Session ended at and around 03: 30 IST thus marking the end of all the paper presentations of IPRECON 2021. It was truly an extravagant journey the past 3 days filled with so much knowledge and wisdom making us even more inspired to make the next edition of IPRECON an even greater success.

HUMANITARIAN TRACK

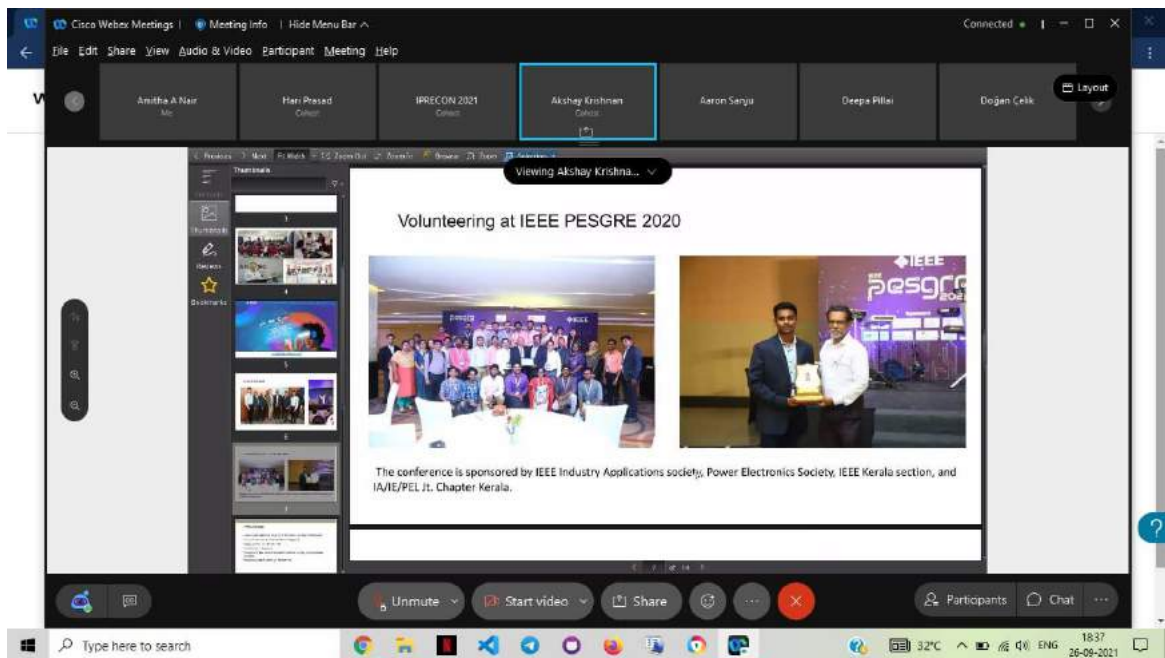
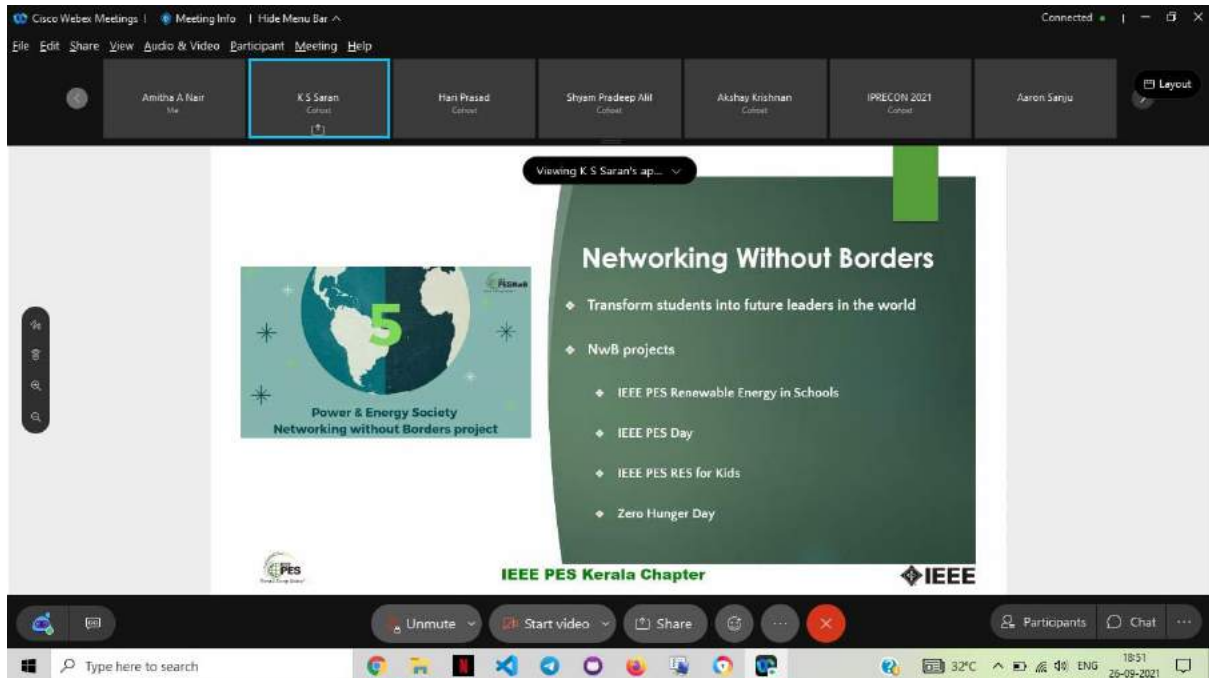


Up next was a Humanitarian Track by Ms. Mercy Chelangat K, Founder of TechGaa Hub and an Energy Access & EV Researcher on the Topic of Humanitarian Activities in the Power and Energy Sector. The session started at 5: 00 PM and concluded around 6: 00 PM IST. With this session Ms. was able to enlighten us about the several Humanitarian activities which were made possible by her involvement and what more could be done in the Power and Energy Sector to further its capabilities. It was an informative and at the same time a very interesting Session. She was kind enough to answer the doubts of the attendees and it suffices to say everyone walked away from that session with a greater mindset and motivation. For all the help and support she had provided she was given a memento as a token of appreciation.

IAS/PES YOUNG PROFESSIONALS TRACK

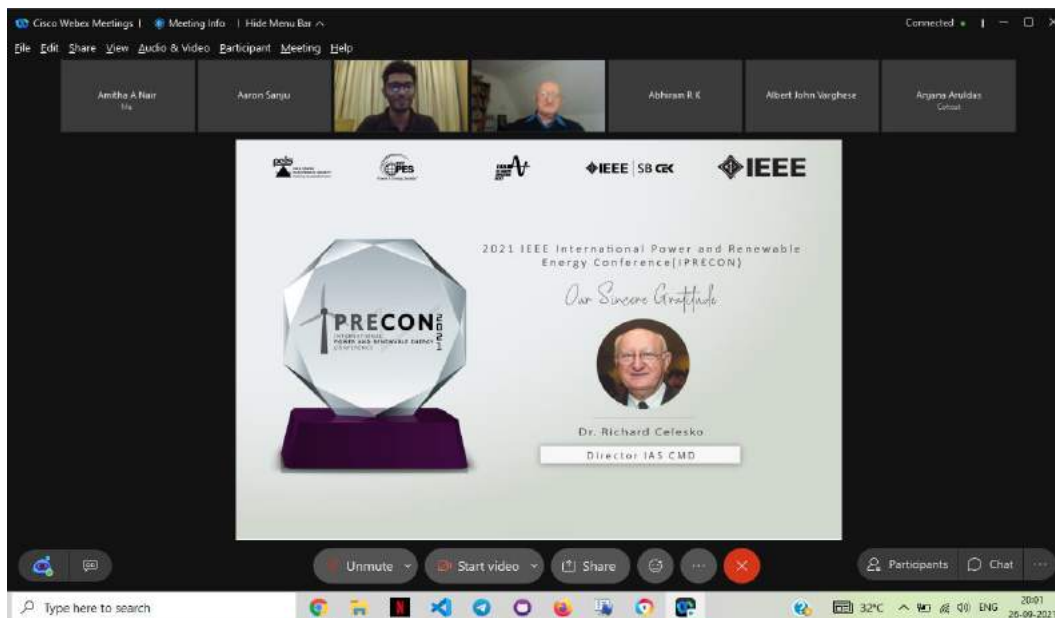
Up next was a, IAS/PES YOUNG PROFESSIONALS TRACK on Benefits of IAS/PES memberships. The session started at 6:00 PM and concluded around 7:00 PM IST. With this session Mr. K S Saran, IAS Young Professional & Junior Engineer, Indian Railways, Mr. Shyam Pradeep Alil, PES Young Professional, Co-Founder & COO, Infusory Future Tech Labs Pvt. Ltd, Mr. Sreekes E, PES Young Professional, Assistant System Engineer, Tata Consultancy Services and Mr. Akshay Krishnan, IAS Young Professional, Software Development Engineer, Carestack were able to enlighten us about the several experiences & activities which were made possible by their involvement and what all opportunities can be explored by being an active hardworking member. The moderator for panel discussion was Mr. Hari Prasad, PES Young Professional,

Co-Founder Zellab Dynamics. It was an informative and at the same time a very interesting Session. They all were kind enough to answer the doubts of the attendees and it suffices to say everyone walked away from that session with a greater mindset and motivation. For all the help and support they had provided they all were given a memento as a token of appreciation.



CLOSING CEREMONY

The Closing Ceremony was scheduled to start at 07: 30 PM IST. The Ceremony started with a Welcome Address by Ms. Jemi Jose the publicity chair of IPRECON 2021. After the Welcome Address Prof. V K Damodaranm, Advisor of IEEE Power and Energy Society Kerala Chapter and Dr. Shay Bahramirad the Founder of IEEE Power and Energy Society WiP and finally Dr. Peter Magyar, Industry Applications Society Chapters and Membership Department Ex-Chair were invited, respectively to share their insights and to deliver the Closing Remarks for IPRECON 2021 and were given Mementos for all their support. To be able to hear from such respected and knowledgeable people meant a lot to the IPRECON 2021 Team and having your support was the number one motivation for all of us to surpass our limits to make IPRECON 2021 to the level it is currently on.

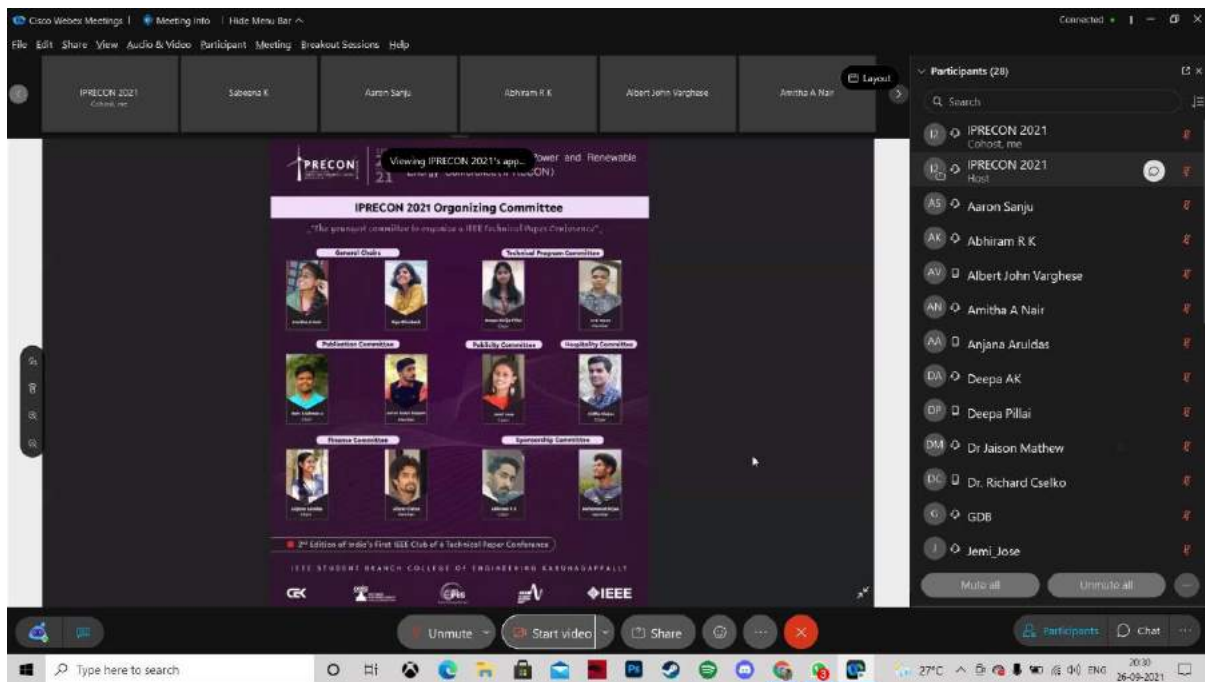


After receiving their kind words and support, Dr. Richard Cselko the Chair of IEEE Industrial Application Society Chapters and Membership Department Club of 6 Conference activities and Dr. Lillykutty Jacob the Chairperson of the Conference Activity Board IEEE Kerala Section and Dr. Jaison Mathew from the Government Engineering College, Thrissur and Dr. Biju K the Treasurer of IEEE Kerala Section and Prof. Deepa A K the vice chair of IEEE Woman in Engineering Affinity Group Kerala Section and lastly Prof. Sabeena K the advisor of IEEE Student Branch College of Engineering Karunagappally were invited respectively to provide their valuable thoughts and remarks and to give the Felicitations and were given Mementos for all that they have done for us and for their kind words. Their words of Praise and Encouragement made us feel like all the time and energy spend on planning and executing IPRECON 2021 with perfection has finally paid off there by making us feel really fulfilled and made us realize how grateful we are for their presence.

After receiving the Felicitations from the Esteemed guests, Ms. Anjana Aruldas the Financial Chair of IPRECON 2021 was invited to deliver the Vote of Thanks and with that IPRECON 2021

came to conclusion. It was truly an eye-opening Journey and since we were able to secure more than quadruple the number of papers, we got for IPRECON 2020. Even though we encountered some difficulties during these 3 days virtual conference but it is quite natural while hosting a virtual event of this scale, we were able to quickly overcome them and the experience was very valuable because now we can avoid the issue altogether in the Future. Armed with the Knowledge from our past mistakes and the tremendous amount of support we receive from the IEEE Community every day we are most certain we will be able to do many great things and make the Community Proud.

IPRECON 2021 is a fully student-led conference handled and organized by the final and pre-final year undergraduate engineering students of College of Engineering Karunagappally.



IPRECON 2021 was successfully able to exceed everyone's expectations. Everyone Involved in the conference had quite an exhilarating time as were evident by their reviews. It was indeed the beginning of the CLUB OF 6 Conferences in India and IEEE SB CEK takes immense pride to be the one to come up with such an endeavour. IPRECON 2021 enlightened not only the youth, but even the professionals into a path of diverse technical Advancements and was indeed a full-fledged conference.