



COLLEGE OF ENGINEERING KARUNAGAPPALLY



2020 IEEE International Power and Renewable
Energy Conference

IPRECON 2020

Dates : 30th, 31st October and 1st November

iprecon2020.org





2020 IEEE International Power and Renewable Energy Conference (IPRECON)

The first imprint of India's first IEEE IAS Club of 6 Technical Paper Conference, **2020 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 1st November 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 prime focus of the conference was on the challenges, latest developments and future technologies in the field Power and Renewable Energy. IPRECON 2020 received 146 submissions from several parts of the globe, after a hard review process 36 were selected for the presentation.

The day 1 of IPRECON 2020 mainly consisted of technical paper presentations which were carried out in 2 sessions. At sharp 9:00 am IST the curtain for the first session "**Renewable Energy Resources & Energy Policies and Standards**" was raised. The session chair was Dileep Krishna Mathi, Research Scholar, Department of Electrical Engineering, National Institute of Technology, Warangal, India.

Then the most awaited presentation session started with the paper "Floating Solar Photovoltaic System: An Overview and their Feasibility at Kaptai in Rangamati" by Mr. Raihan Chowdhury 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 session of the paper presentation was on "**Electric and Hybrid Vehicles & Energy Storage & Battery Charging Techniques**", the session chairs being Prasoon Chandran Mavila, Research Scholar, Department of Avionics, Indian Institute of Space Science and Technology, Thiruvananthapuram and **Nirmal Mukundan C. M.**, Research Scholar, Dept. of Electrical and Electronics Engineering Govt. College of Engineering, Kannur. The session concluded at 2:00 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 inauguration of the much awaited event commenced with Amitha A Nair, Chair, IEEE Student Branch College of Engineering Karunagappally delivering the IEEE Code of Ethics at 4:00 PM (IST) followed by the delivery of welcome speech by Mr. Akshay Krishnan, General chair IPRECON 2020. Mr. Jayaraj N R, General chair IPRECON 2020 delivered the presidential address while Mr. Hari Prasad, Technical Program Committee Chair IPRECON expressed the gratitude for IPRECON 2020 and shared the experiences gained from the journey of IPRECON 2020. Prof. Georges Zissis, President IEEE IAS delivered the inaugural address followed by the felicitation speech by Dr. V P Jyothiraj, Principal of College of Engineering Karunagappally and Dr. Jaya VL, Former Principal of College of Engineering Karunagappally. The inaugural ceremony turned out to be bounteous with the delivery of felicitation speech from Dr. –Ing. Peter Magyar, Past IAS CMD Chair and Ms Lesley Arakkal, IAS CMD Chair. Dr. Richard Cselko, Chair, Students Technical Events Committee also shared his wise words in the inaugural ceremony of IPRECON 2020. Ms Saradha Jaykrishnan, Chairperson Kerala Section, Prof. Muhammed Kasim S, Former Chairman IA/IE/PELS JT. Chapter Kerala and Dr. K. Bijuna Kunju, Chairperson IA/IE/PELS JT. Chapter Kerala also delivered the felicitation speech in IPRECON 2020. The vote of thanks was delivered by Ms. Sherin Cherian, Publication Chair IPRECON 2020. The inaugural ceremony came to an end by 6:30 PM (IST) with an astounding hope and enthusiasm that followed the rest of the conference.

The keynote speech of IPRECON 2020 was primed on “**Future of solar PV applications: Bangladesh perspective**” by Prof. M Rezwan Khan Professor, United International University, Bangladesh. He pointed out some enlightening entities in the field which were appreciated by the attendees and hence was offered a memento as a token for his incredible efforts and support for the event.

The day 1 of IPRECON 2020 concluded with the incredible Humanitarian Track. The track comprised poster presentation on green energy, talks on sustainable development encapsulating all the core parts of sustainability. The session was also turned pretty notable through a session by Mr. Kartik Kulkarni on “**Transforming challenges into innovation through IEEE HAC.**”

In short, the day was indeed a well spent one.

The 3rd Session of the conference, **Distributed Generation and Grid Interconnection and Power Quality Issues**, scheduled on 31st November 2020 from 10:00 AM – 12:45, had Ms. Grace Sadhana Samuel, Research Scholar, dept. of Electrical Engineering, National Institute of Technology Calicut, as the session chair. With attendees including presenters, students, research scholars and professionals, the session turned interactive with the post-presentation discussions. The 4th session in IPRECON 2020 was **Electric Machines and Drives**, with Ms. Krishna Kumari K, Research Scholar, Amrita University, Coimbatore, Tamil Nadu, as the session chair. Scheduled on 31st October 2020 from 1:30 PM – 3:00 PM, the session witnessed some exceptional papers that have induced interest in the attendees. The time management and session coordination of the team were also well commendable. The afternoon session of the second day of IPRECON 2020 was eventful with a special session, keynote address and a humanitarian track. A special session on “**The Potential of Electricity- Based Fuels of low-emission Transport**” was handled by Dr. Peter Magyar, Consultant M&PP, Director of Chapter Development, Industrial Applications Society. It addressed the rising potential and market of renewable and electricity-based fuels in transportation. A much an interesting topic, it was followed by a discussion where the attendees eagerly raised their queries and shared their opinions. The special session was followed by the keynote address on “**Developments in Vehicle Electrification**”, **Dr. Tomy Sebastian**, Immediate Past President, Industry Applications Society. The session focused on the relevance of electrified vehicles in the current and future world, sharing some of the developments introduced in various emerging vehicles. Scheduled from 6:00 PM -7:00 PM IST, the session concluded with an interactive session, where the attendees were asked to share their queries on the topic.

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Speaking: Peter Magyar

Lecture outline

- Historical overview of electric cars
- Pros and Cons of electric cars
- Situation in Germany: only ~25% of the government target was fulfilled. Why?
- Are electric cars more environment friendly than gasoline powered cars ?
- Aspects of utilisation of wind and solar energy sources
- Alternatives of use the solar-wind mix
- Advantages of artifical hydrocarbon fuels
- „Quo vadis?“ - „Where are you going?“

Participants (23)

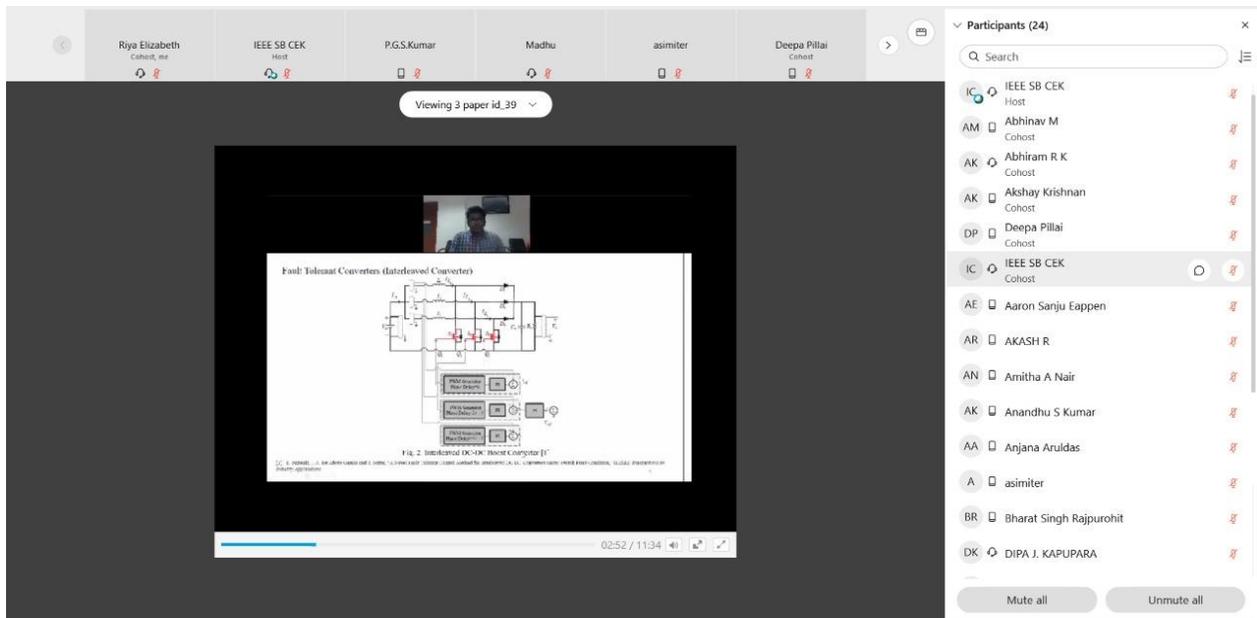
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- AK Abhiram R K Me
- IC IEEE SB CEK Host
- PM Peter Magyar
- IC IEEE SB CEK Cohost
- AE Aaron Sanju Eappen
- AM Abhinav M

Chat

The concluding session of the second day of IPRECON 2020 was a **poster presentation** under the **humanitarian track**. An opportunity to expand professional networking and master new thoughts and techniques, it exhibited the diverse events organized in different IEEE Student Branches themed under Green Energy. The four selected finalists, IEEE SB Jawaharlal College of Engineering and Technology (IEEE SB JCET), IEEE SB NSS College of Engineering, IEEE SB Vishwajyothi College of Engineering and Technology (IEEE SB VJECT) and IEEE SB Adi Shankara Institute of Engineering and Technology (IEEE SB ASIET), then presented their posters before the attendees. The posters were evaluated by Ms. Staji Wilson (Assist. Engineer trainee at TCS, IEEE PES WiP Sub Regional Representative), Mr. Anandhu S Kumar (Senior Executive -Wipro Light Designing and IEEE PES YP Student Transition and Elevation lead), Mr. Anish MS (IEEE PES YP Global Relations Coordinator) and Mr. Saran KS (Junior Engineer of Track Machines Department at Indian Railways, and Activity Coordinator at IEEE PES YP). The humanitarian poster presentations concluded with a fascinating discussion session by the Student Branch finalists and the evaluators.

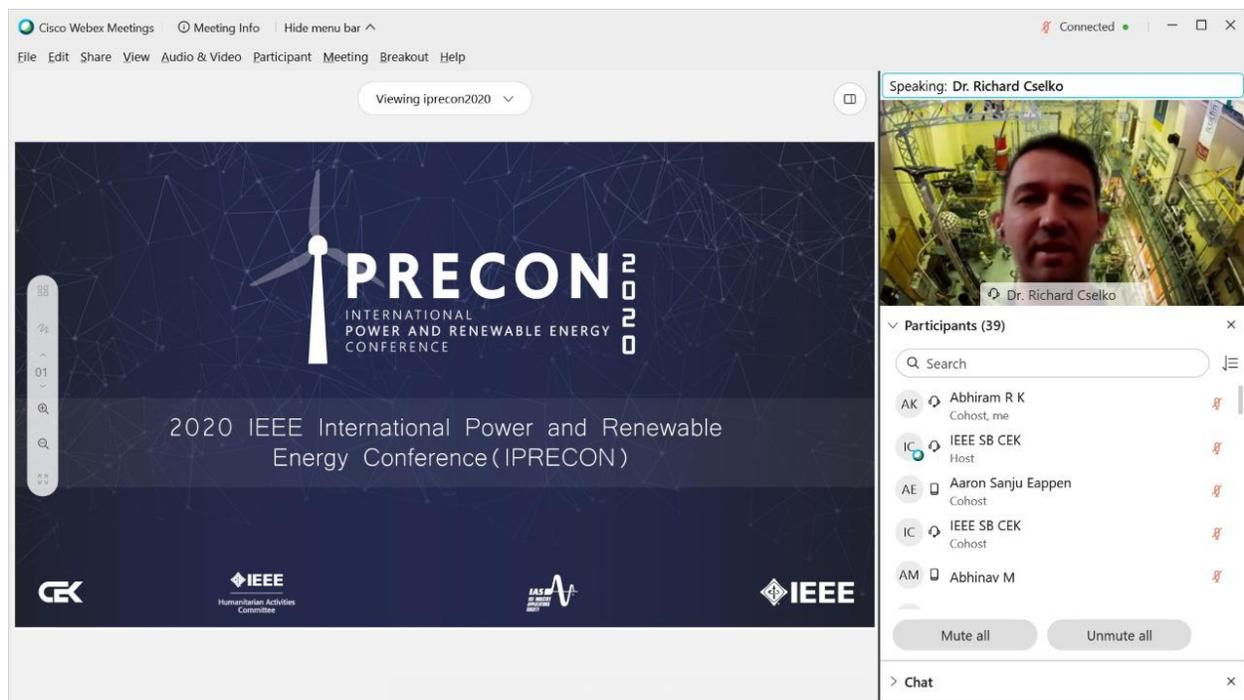
The second day, thus turned eventful as it witnessed some of the most remarkable paper presentations, special sessions, keynote addresses and an astounding humanitarian track orchestrated for the attendees. The creative ideas the authors have come up with and the coordination and management of the organizers elevated the quality of the conference to a higher level worth experiencing. The third day of IPRECON 2020 started with the paper presentation session on “**Power Electronic Converters and Control Systems**”, the session chair was S. Madhu Babu, Research Scholar, Department of Electrical Engineering, National Institute of Technology (NIT) ,Warangal. The session started at 10:00 AM IST and had a total of 7 paper presentations. Thus the whole paper presentation of IPRECON 2020 was concluded and it was a very interesting session and the paper presented a wide range of new knowledge along with appropriate indigenous or local technologies, many queries were cleared. As a token of gratitude to the session chair for his commitment and for the impulsive suggestions and opinions a memento was awarded to him. The session ended up at 12:00 PM IST.



The keynote session on **Power Electronics - The Key Technology for Grid Integration** with **Prof. Frede Blaabjerg**, President of IEEE Power Electronics Society (2019-2020) as the speaker followed from 2:00-3:00 PM IST. Within a limited amount of time, he was quite efficiently able to point out the crucial points of his sessions. The attendees seemed quite enthralled as his presentations opened up some incredible possibilities of technical advancements for the future. IEEE SB CEK offered their overwhelming gratitude to the speaker through a memento.

The closing ceremony was from 3:00-4:00 PM IST wherein Amitha A Nair, Chairperson IEEE SB CEK moderated the ceremony. Mr Jayaraj N R, General Chair IPRECON 2020 welcomed all the respectable guests and attendees and expressed how the ideology and vision of the conference proved out to be extremely in favour of the technical development. Dr. Peter Magyar, past IAS CMD Chair delivered the valedictory address followed by Dr. Richard Cselko, Chair, Student Technical Events Committee, IAS CMD, Prof. Lillykutty Jacob Chair, Conference Activity Board , IEEE Kerala Section delivering their remarks and feedback for the event . The success of the conference was measured and inferred by the feedback and remarks, and a considerable amount of advice was collected from the contributors of the event. A Presentation of another Club of 6 conference to be held in 2021 by NIT-Trichy was taken by Mr. K . Kannadasan, Chairman & Secretary, IEEE student branch, NIT-Trichy wherein he introduced his Student Branch, their ideal vision as well as how they expect to conduct the event. Mr. Akshay Krishnan, General Chair IPRECON 2020 delivered the vote of thanks, he conveyed his gratitude to all the

participants, session chairs, speakers and all other dignitaries in his capacity as general chair for the conference.



From 7:00-8:00 PM a session on “**Sustainable development goals and objectives**” by Mehak Azeem, STEM motivator speaker was held as a part of humanitarian track of IPRECON 2020. With that it came to an end to India's first IEEE IAS club of 6 technical paper conference, IPRECON. Her detailed presentations including various initiatives taken throughout the world and numerous ones that are yet to be taken in order to inflict the fact and importance of a sustainable world amidst the attendees. It was a stepping stone for the attendees to flourish in the future and was hence offered a memento as a token of appreciation from the Student Branch.

IPRECON 2020 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.