IEEE - MVSR STUDENT BRANCH
Student Branch Code: 12161, School Code: 41329276

Opportunities in Power and Energy Sector for Innovation and Technology Applications in Rural areas in India

IEEE MVSR PES Student Chapter has conducted a webinar on Opportunities in Power and Energy Sector for Innovation and Technology Applications in Rural areas in India on 22nd July, 2020. This webinar is a mere help from IEEE MVSR PES chapter to help students learn about the new technologies and encourage them to innovate new ideas in Power and Energy sector.

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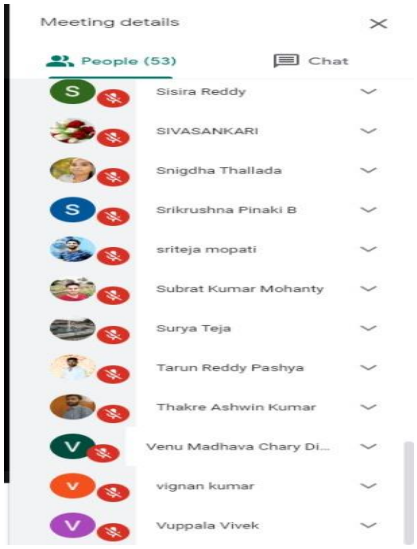
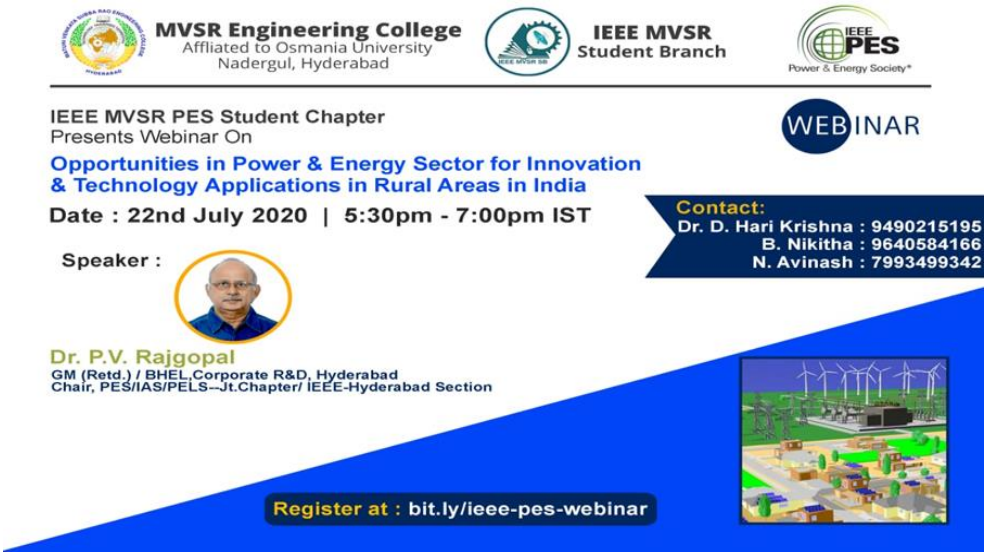
Session details:
Date: 22nd July,2020
Time: 5:30pm – 8:00pm
No. of participants: 53
Speaker for the session: Dr. P.V. Rajgopal, GM (Retd.) / BHEL, Corporate R&D, Hyderabad Chair, PES/IAS/PELS Joint Chapter, IEEE- Hyderabad Section, India.



Attendees in the session



Poster for the event

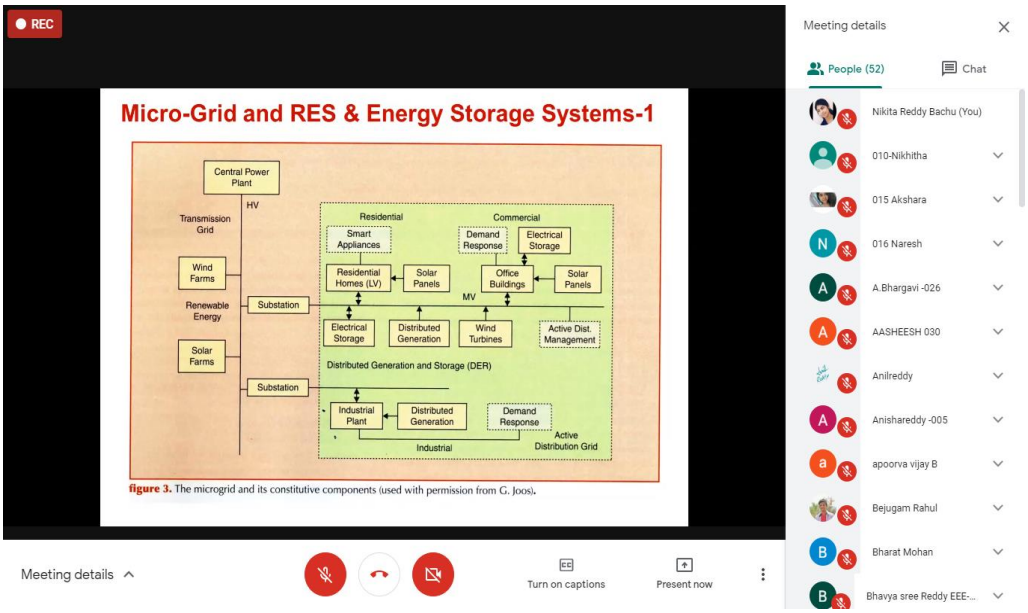
Dr. P. V. Rajgopal worked in BHEL, Corporate R&D at Hyderabad for more than 36 years and retired as Additional General Manager (Power Electronics Systems Group). He developed India's 1st EV of Mini-Bus Type in 1982 and was used for transporting employees in their Corporate R&D Complex for many years. As Project Leader / Group Head, he was involved in the successful development of various new products like Electric Vehicles/ AC Drives/ DC Drives/ Special Power Supplies for Transportation/ Power Plants/ Renewable Energy Systems & Industrial Applications.

IEEE MVSR PES Chairperson Ms. B. Nikita Reddy has initiated the session by welcoming the speaker, faculty of MVSR Engineering College and all the attendees who have attended the webinar. Later, IEEE MVSR SB Counsellor and PES advisor Dr. D. Hari Krishna, has introduced the speaker to the attendees and later handed over the session to Dr. Rajgopal.

The speaker has started the session by sharing the topics he was going to focus on the entire lecture. He has explained what Innovation means and its impact on any organisation or society.

He has shared about the skills an innovator must acquire to achieve good results in any innovation. He also stressed about the major benefits of a product innovation an individual or any organisation can get and also about the entities that an innovator must focus while doing any innovation. He told us about how product identification takes place in buisness or market.

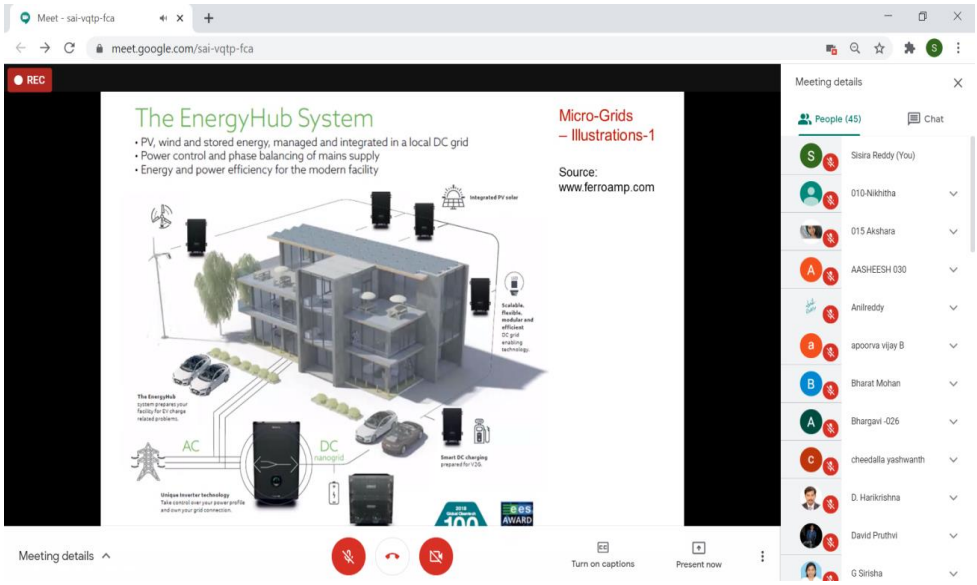
Later, he has given a brief explaination on Micro-grids, their needs and benefits. Dr. Rajgopal has illustrated inner structure and components of various microgrids. He has also explained about various operating modes of Micro-grids and then discussed about the various environmental benefits and disadvantages of Micro-grids.



Speaker describing about Micro-grid and its components.

Dr. Rajgopal has given some of the major reasons why a microgrid must be build in any area. Further, he has displayed the Energy Hub System and a Naval base at USA and explained how microgrids are deployed. He has explained how microgrids have a well planned Energy Management System and their financial benefit to the Microgrid operators.

Later the speaker has illustrated a graph and given a clear picture on how Micro-grids reduce dependency on utility grid. Then, he presented a list of areas where Micro-grids can be used with innovations.



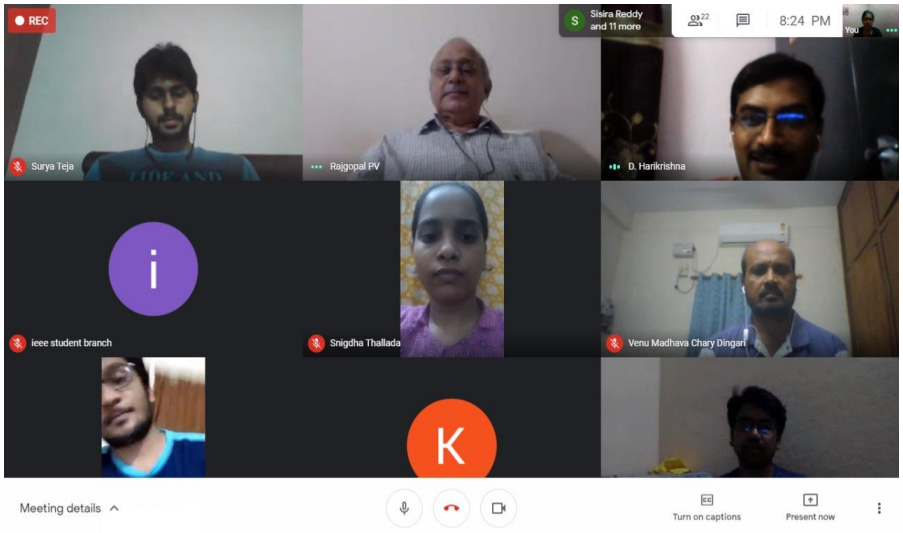
Speaker showing the Energy Hub System.

The next innovation discussed is the Solar PhotoVoltaic Power Plants. Dr. Rajgopal has explained their topologies and mentioned that PV Hybrid grid is the most used type. He has showed some of the solar power plants established at various places and explained about them. He has also illustrated some figures and graphs and told the benefits of higher output wattage panels. Dr. Rajgopal has displayed the areas where Solar PhotoVoltaic Power Plants can be used with innovations.

Followed by this, he has given a brief introduction on Energy Storage Systems, why they are needed and the classification of various ESS technologies. He has shared some applications of ESS in Micro-grids. He has expounded about Battery Energy Storage System, illustrated topologies of a typical BESS and shared few applications of BESS. He has given us a clear idea about the major attributes of few important batteries which are used. He has shared about the areas where Solar PhotoVoltaic Power Plants along with BatteryEnergy Storage System can be used with innovations.

Later, Dr. Rajgopal has explained the definition of Small Wind Turbines, their classification and showed us the schematic diagram of a typical Small Wind Turbine. He has shared about the opportunities on development of SWT and also gave some suggestions. He has dispalyed various Electrical Vehicles and explained the technical sepecifications in each EV. He has also explained about the energy efficient Air Conditioner with inverter fed varialbe speed motor.

Dr. Rajgopal has also suggested few innovations and motivated attendees to develop innovative products using advanced technologies like Data analytics, Big Data and IoT etc.



Attendees raising queries

Later, the speaker has cleared all the queries raised by the attendes.

At the end, vote of thanks is given by IEEE MVSR PES Joint Secretary Mr. G. Surya Teja and thanked Dr. Rajgopal, IEEE MVSR SBC, all the ExCom and all the attendees in the session.

REPORTED BY –

IEEE MVSR SB.