

## **“A One -Day National Level Webinar on Power Electronics for Renewable Energy Application”**

**in association with Centre for Energy-SVEC under IEEE Student Branch and ISTE Student Chapter held on 19<sup>th</sup> June 2021**

### **REPORT**

A One Day Online National Level Webinar on “**POWER ELECTRONICS FOR RENEWABLE ENERGY APPLICATIONS**” was organized in association with Centre for Energy-SVEC under IEEE Student Branch and ISTE Student Chapter by Department of Electrical and Electronics Engineering, Sree Vidyanikethan Engineering College, Tirupati for the benefit of Research scholars and students and faculties of various department and various institutions.

The 189 participants who have enrolled for this Webinar and actively participated were 154 . The speaker of the session was Dr. B Chandra Sekhar, Technical lead Automotive division, TATA Consultancy services Limited, Bangalore. Who have trained the students and faculties of the webinar on 19-06-2021 virtually through Zoom platform between 10.00 am to 12.30 pm.

The session started with the welcome note by Dr.M.S.Sujatha and Mr.G.Ravindra, Convener of the webinar.



The main motto of the conduction of this one day webinar was to impart and share the knowledge on the power electronics in the renewable energy applications to the every one through the Industrial expert and to fill the gap between academic and industrial expertise.

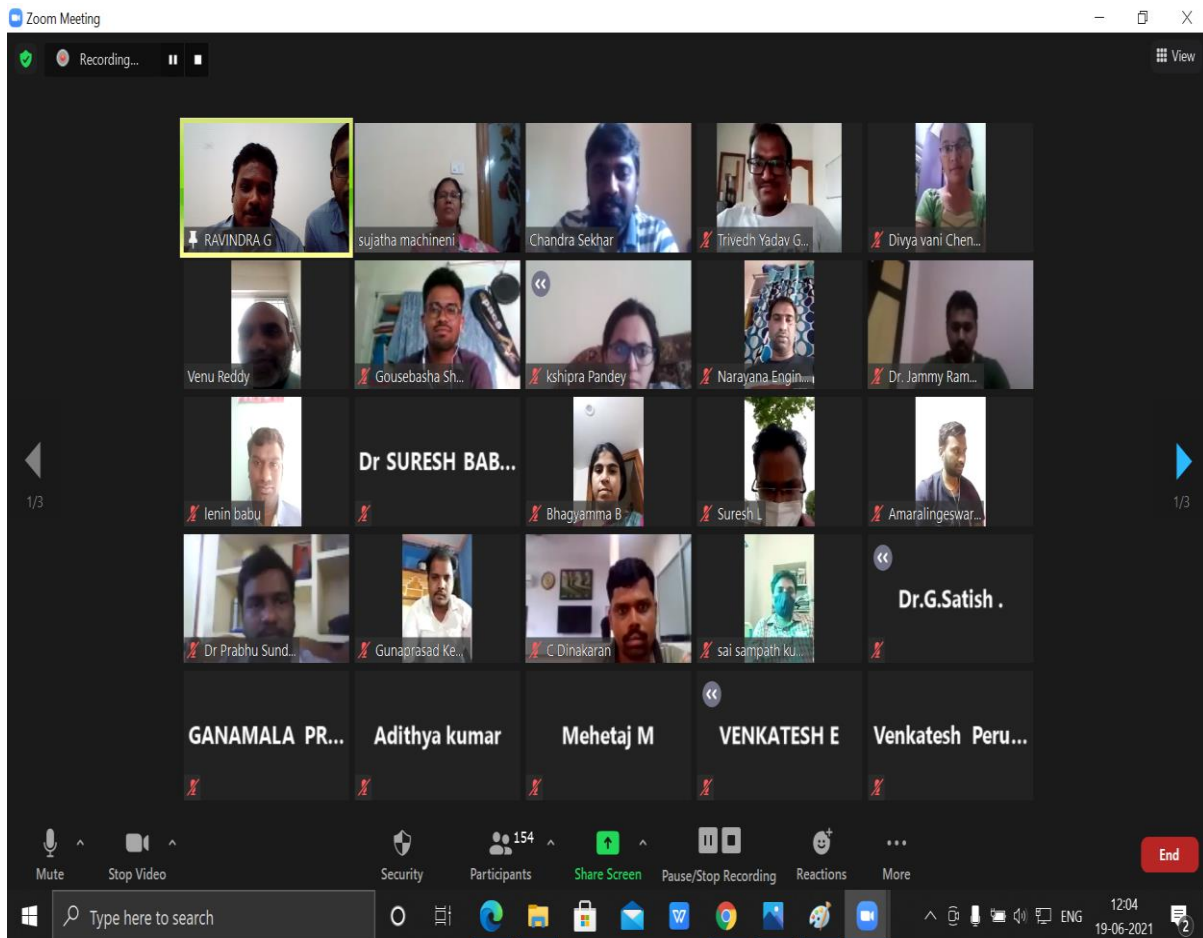
Now days the Power electronics plays a major role in achieving energy efficiency and sustainable development. Power Electronics is one of the most important components of modern grid applications and renewable energy systems. The increased efficiency and robustness of power semiconducting devices enable to improve many types of DC-DC, DC-AC, and AC-AC power conversion. The power converters and device topologies are improved in industrial, residential, commercial and many more specified areas to improve power system resiliency, flexibility, and reliability. On the other hand, electric vehicles and energy storage systems are widely integrated with renewable energy sources.

The objective of this webinar is to impart knowledge about emerging technologies and advanced design and modeling studies on the application of Power Electronics in Renewable Energy Systems and to bring together the expertise in renewable energy from industry and institutions to provide an interactive forum to discuss and exchange their visions, experiences, and solutions for up-scaling and mainstreaming renewable energy to achieve sustainable economic growth. The latest trends in power electronics technology for renewable energy systems will be dealt in depth.

The main objectives of the webinar are

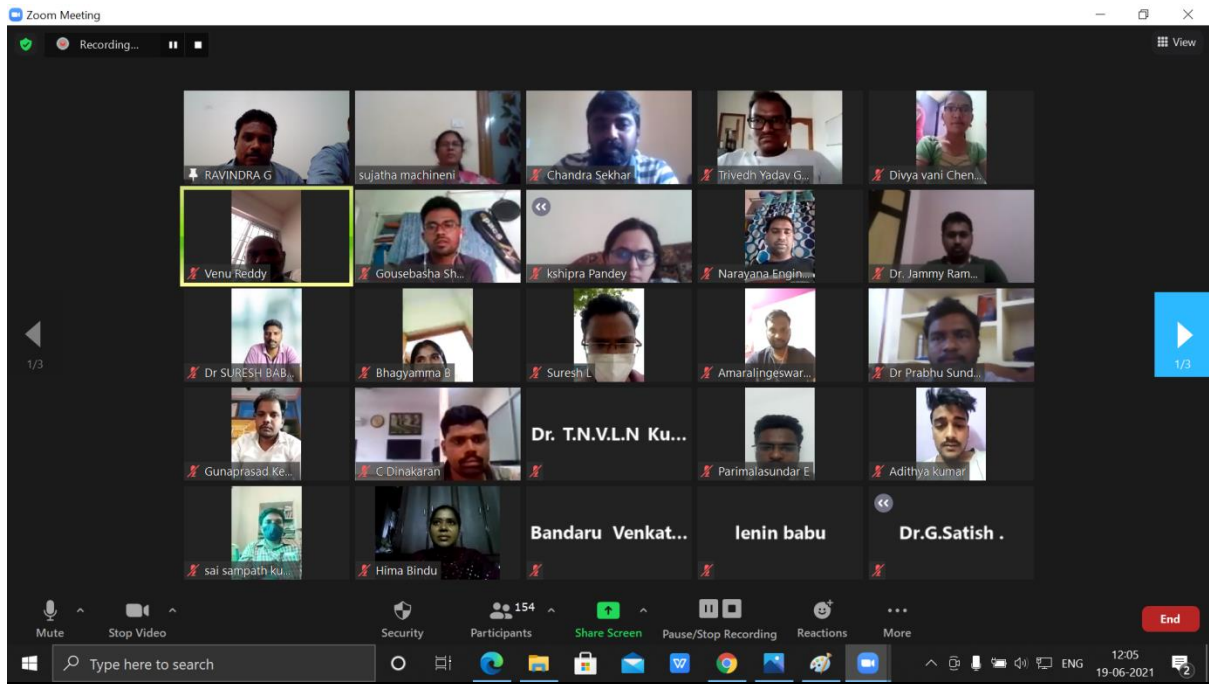
1. Power Electronics applications, for renewable energy applications
2. Solar Inverter: Design, Development, verification, and Validation
3. LED drivers: Design, Development
4. Hybrid Charger: Design, Development, verification, and Validation
5. Smart Grid applications
6. Novel challenges and Research Gaps

The speaker came from the eminent industry i.e Technical lead, Tata Consultancy services (TCS), Bangalore and he completed his Ph.D from the reputed institute CPRI, Bangalore, he has insightful knowledge on power electronics and implementation of power electronic converters in the renewable energy applications.



The resource person deliver the sequence of renewable energy applications as follows:

1. Discussed the importance of power electronics and applications of power electronics in the renewable applications.
2. Importance Inverter in the power system and explained effective the design of solar inverter, prototype development, verification and validation of the solar inverter in the real time approach.
3. Discussed the importance of LED driver in the lighting, its design, development and described the results with valid practical examples.



The resource Person also discussed

4. The importance of hybrid charger used in the electric vehicles, energy storage in the different electric power generation technologies used in the renewable applications & in hybrid energy systems. Also described the design of hybrid charger, development, verification and validation of hybrid charger with valid experimental results.
5. Now days we were using the smart technologies so the resource person also concentrated on the smart grid applications used in the present electrical engineering scenario and also the upcoming electrical grids are smart grids only.
6. Finally the speaker also concentrated on the novel challenges and the research gaps in the renewable energy applications.

### **Details of Speaker**

Dr. B Chandra Sekhar,  
Technical Lead Automotive Division,  
TATA Consultancy Services Limited(TCS), Bangalore

**HOD, EEE**