

# IEEE WORKSHOP ON DESIGN OF POWER ELECTRONICS PRODUCTS

**Date** : September 21, 2019(Saturday)

**Venue** : EC PG Seminar Hall

**Organizers** :

- IEEE EA section Kerala
- IEEE IA/IE/PELS Jt. Chapter Kerala
- Life Members Affinity Group
- IEEE IAS SB CET

**Time** : 10am-4pm

**No. of attendees** : 30

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

The session was handled by Dr.Madhu Mangal, vice chair, LMAG Kerala Section. He has over 40 years of experience in R&D and Engineering in the field of Power Electronics, as Head of R&D of Industry and as Head of Government R&D Institutions.



Presently he is Chief Consultant in Power Electronics for Advanced Rail Controls Bangalore. He is Life Senior Member, IEEE and Fellow, Institution of Engineers (India).

The function began with a welcome speech by Akshay PL, Chairperson, IAS IEEE SB CET. He welcomed Dr.Madhu Mangal, vice chair, LMAG Kerala Section, Prof. Biju K, Secretary IEEE IAS Kerala Section, Dr.Bijuna Kunju, vice chair, IA/IE/PELS Jt. chapter Kerala section, and participants to the session.

Then Dr Bijuna Kunju, Professor, vice chair, IA/IE/PELS Jt. chapter Kerala section delivered the inaugural address. Dr Bijujna took pride in being associated with IEEE and extended her support to IEEE IAS activities. She encouraged the students to utilize the workshop to the most and make innovations using it.

It was followed by program overview by Dr.Madhu Mangal, vice chair, LMAG Kerala Section. Sir briefed about power electronics, its applications and its future scope.

The workshop started with an introduction to power electronics and power electronics products.A lecture was given about what is power electronics,power electronics products and various power converters.

The second part of session was about UPS systems. It started off with an introduction to UPS systems,followed by Why UPS systems and its evolution.A lecture was given about evolution of UPS systems and UPS topologies.

The third quarter of the workshop focused on design of UPS system.Here,UPS system specification and topics related to design were covered.The topics covered included static switch devices,output filters,inverter power devices,DC link capacitor,battery bank and rectifier power devices.



The workshop session came to an end by students solving a given task.An exercise on design of power electronics products was given to the participants,which they had to do.The ideas and solution were discussed in the end.

Each quarter of the session's lecture was followed by an interactive session with Dr.Madhu Mangal, where in students could share their ideas with him as well as ask their

queries.

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



The workshop ended around 4pm. The session concluded with Mr. Adharsh, chair, IEEE SB CET extending the vote of thanks and also by presenting a memento to Dr. Madhu Mangal by Prof. Dinesh.

