

Question: Evolution of power Electronic in modern era?

INTRODUCTION: Power electronic is the application of solid-state electronics to the control and conversion of electric power.

In modern Systems, the conversion is performed with semiconductor switching devices. Such as diodes thyristors and power transistors.

One major field of application of semiconductor devices in the recent years has been to control large blocks of power flow in a system. This has led to the development of a new branch of engineering

Called power electronic:

Power electronics: The branch of electronic which deals with the control of power at 50Hz is known as power Electronics.

There are many application where it is desired to control the power fed to a load to change the speed of a fan and motor. So far we have been using electronic method to exercise such a control.

Gradually, the golden age of power electronic was ushered in by inventions of many sophisticated power semiconductor devices. power electronic systems are found in virtually every electronic device.



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Power Electronics in modern era:

Power electronics, as you know deals with the conversion and control of electrical energy with the help of power Semiconductor devices that operate in a switching mode, and therefore, efficiency of power electronic apparatus may approach as high as 98-99%. Power electronic is very important in modern high-efficiency energy processing systems, such as HVDC, SVC flexible ac transmission system for active and ~~industrial process~~ reactive power flow control.

In modern automated factories created variable-frequency drives.

- * pumps and compressor drives
- * paper and textile mill drives.
- * Subway and locomotive propulsion.
- * electric and hybrid vehicles
- * elevators
- * metal rolling and textile mills.
- * wind generation systems.
- * ship propulsion.

Power electronic plays a very important role in solving or mitigating our global warming problem. which is a very serious concern in our society.



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Some other application of power electronics:

- * Temperature and lighting control.
- * Solar power and renewable energy.
- * Medical applications.
- * Computer networks and data centers.
- * Military.
- * Electric power network.
- * Transportation.

Conclusion:

Power electronic nowadays used in generation, transmission and distribution levels of the power system. where power electronics will be a key component, it is necessary to fill the gap between power systems and power electronics engineers.