



Scholars Research Library

European Journal of Applied Engineering and
Scientific Research, 2021, Volume 9 issue 6



ISSN: 2278-0041

Various Components of Electrical Engineering

Thanaphum Osathanon

MSc, University of Belgrade, Serbia

Electrical engineering is one among the newer branches of engineering, and dates back to the late 19th century. It's the branch of engineering that deals with the technology of electricity. Electrical engineers work on a good range of components, devices and systems, from tiny microchips to large power plant generators.

Early experiments with electricity included primitive batteries and static charges. However, the particular design, construction and manufacturing of useful devices and systems began with the implementation of Michael Faraday's Law of Induction, which essentially states that the voltage during a circuit is proportional to the speed of change within the magnetic flux through the circuit. This law applies to the essential principles of the electrical generator, the electrical motor and therefore the transformer. The arrival of the fashionable age is marked by the introduction of electricity to homes, businesses and industry, all of which were made possible by electrical engineers.

Some of the foremost prominent pioneers in EE include Edison (electric light bulb), Westinghouse (alternating current), Tesla (induction motor), Marconi (radio) and Philo T. Farnsworth (television). These innovators turned ideas and ideas about electricity into practical devices and systems that ushered within the modern age.

Since its early beginnings, the sector of EE has grown and branched out into variety of specialized categories, including power generation and transmission systems, motors, batteries and control systems. EE also includes electronics, which has itself branched into a good greater number of subcategories, like frequency (RF) systems, telecommunications, remote sensing, signal processing, digital circuits, instrumentation, audio, video and optoelectronics.

The field of electronics was born with the invention of the tube [thermionic tube|electron tube|electronic device"> tube diode vacuum tube in 1904 by John Ambrose Fleming. The tube basically acts as a current amplifier by outputting a multiple of its input current. it had been the inspiration of all electronics, including radios, television and radar, until the mid-20th century. it had been largely supplanted by the transistor, which was developed in 1947 at AT&T's Bell Laboratories by Shockley , Bardeen and Walter Brattain, that they received the 1956 Nobel prize in physics.

"Electrical engineers design, develop, test and supervise the manufacturing of electrical equipment, like electric motors, radar and navigation systems, communications systems and power generation equipment, states the U.S. Bureau of Labor Statistics. "Electronics engineers design and develop equipment, like broadcast and communications systems — from portable music players to global positioning systems (GPS)."

If it is a practical, real-world device that produces, conducts or uses electricity, altogether likelihood, it had been designed by an engineer. Additionally, engineers may conduct or write the specifications for destructive or nondestructive testing of the performance, reliability and long-term durability of devices and components.

Today's electrical engineers design electrical devices and systems using basic components like conductors, coils, magnets, batteries, switches, resistors, capacitors, inductors, diodes and transistors. Nearly all electrical and electronic devices, from the generators at an electrical power station to the microprocessors in your phone, use these few basic components.