

Mesleki Yabancı Dil 1 Dersi

Ankara Üniversitesi Elmadağ Meslek Yüksekokulu

Öğretim Görevlisi : Murat Duman

Mail: mduman@ankara.edu.tr

(Bu çalışma Marija Krznaric tarafından yazılmış ELECTRICITY AND ELECTRONICS isimli kitaptan alınan özet bilgilerle hazırlanmıştır.)

Hafta 5

BATTERIES and CAPACITORS

- In order to produce electric current, electrons are needed and the device which does that is a battery.
- Batteries are cans full of chemicals that produce electrons.
- Batteries are used everywhere. Beside in electronic toys, you can find them in our cars, our PCs, laptops, portable MP3 players and cell phones.
- A battery has two terminals. One terminal is marked (+), or positive, while the other is marked (-), or negative.
- Normally, some type of load is connected to the battery using the wire. The load might be something like a light bulb, a motor or an electronic circuit like a radio.
- In 1800, the first battery was created by Alessandro Volta and the arrangement of that first battery was called after him - a voltaic pile. He made a stack by alternating layers of zinc, blotting paper soaked in salt water, and silver.
- In a way, a capacitor is a little like a battery. Although they work in completely different ways, capacitors and batteries both store electrical energy.

- A capacitor is a much simpler device, and as distinguished from the battery, it cannot produce new electrons, it can only store them. This property of the capacitor is called capacitance.
- Just like a battery, a capacitor has two terminals. The terminals are connected to two metal plates separated by a dielectric.
- A dielectric is a material that can serve as an insulator because it has poor electric conductivity, e.g. it can be air, paper, plastic or anything else that does not conduct electricity and keeps the plates from touching each other.
- When the capacitor is charged, it has the same voltage as the battery.
- The unit of capacitance is a farad.
- The difference between a capacitor and a battery is that a capacitor can dump its entire charge in a tiny fraction of a second, whereas a battery would take minutes to completely discharge itself.
- Capacitors are used to store charge for high-speed use, e.g. a flash, or big lasers to get very bright, instantaneous flashes. They eliminate ripples.