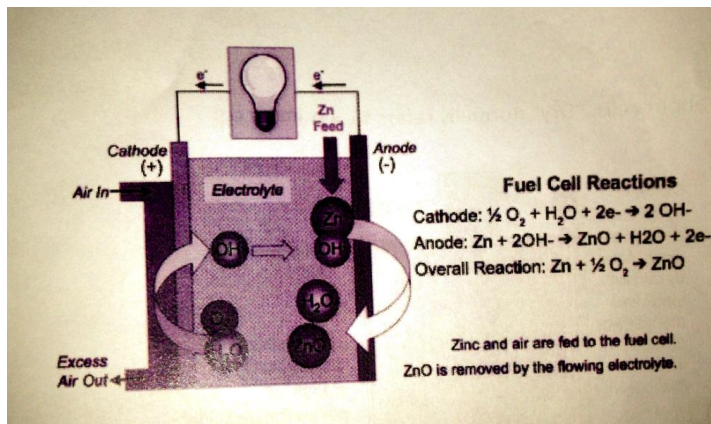
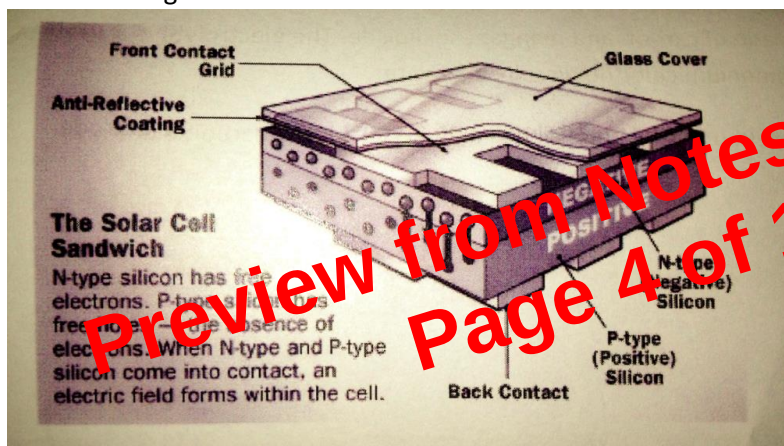




Solar cells

Solar cells are not useful for storing energy, it is not a primary or secondary. But they are used to generate electricity. When light is incident on electrons near the boundary between the N-type and P-type silicon, it gives the electrons energy through the photoelectric effect. The electrons are able to flow through an electrical circuit.

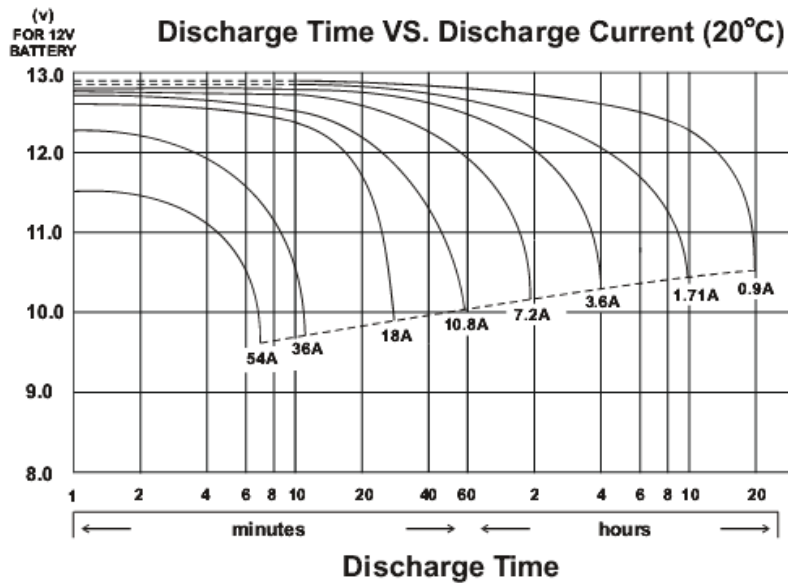


Unit 14- Assignment 4- M4

Primary cells

386/301 Energizer watch battery - Zinc-air fuel cell

Chemical System:	Silver Oxide ($\text{Zn}/\text{Ag}_2\text{O}$)
Designation ANSI/NEDA	1133SO/1132SO



This graph shows that as you increase the time you use the battery for, the voltage decreases. After it discharges, the voltage begins to fall rapidly, from ~12V to 8V. As you increase the current, the discharge falls at a faster rate. During discharge, the lead dioxide (positive plate) and lead (negative plate) react with the electrolyte of sulphuric acid to create lead sulphate, water and energy.

During discharge, the lead dioxide (positive plate) and lead (negative plate) react with the electrolyte of sulfuric acid to create lead sulfate, water and energy.

During charging, the cycle is reversed: the lead sulfate and water are electro-chemically converted to lead, lead oxide and sulfuric acid by an external electrical charging source.

Advantages:

- These batteries can be quite cost effective. As they last long, not much money would have to be spent to power the device.
- It is reliable, due to over 140 years of development. It is robust and tolerant to abuse and overcharging, so you would rarely need to purchase a new one. The shelf life is also very long if stored without electrolyte
- It can deliver very high currents, very useful for high current drain applications, such as submarines.
- It can be left on charge for long periods of time and it would not damage the battery.
- There are wide ranges of sizes and capacities available on the market. They are also distributed around the world, which makes them available to anyone.
- This battery can be recycled a lot, so it will not overuse the world's resources.