Bunsen Double Fluid Primary Cell Voltaic Electrolytic Galvanic Chemical

OddMix.com - Power Technical Note - PWRN0804 - by Karl Nagy

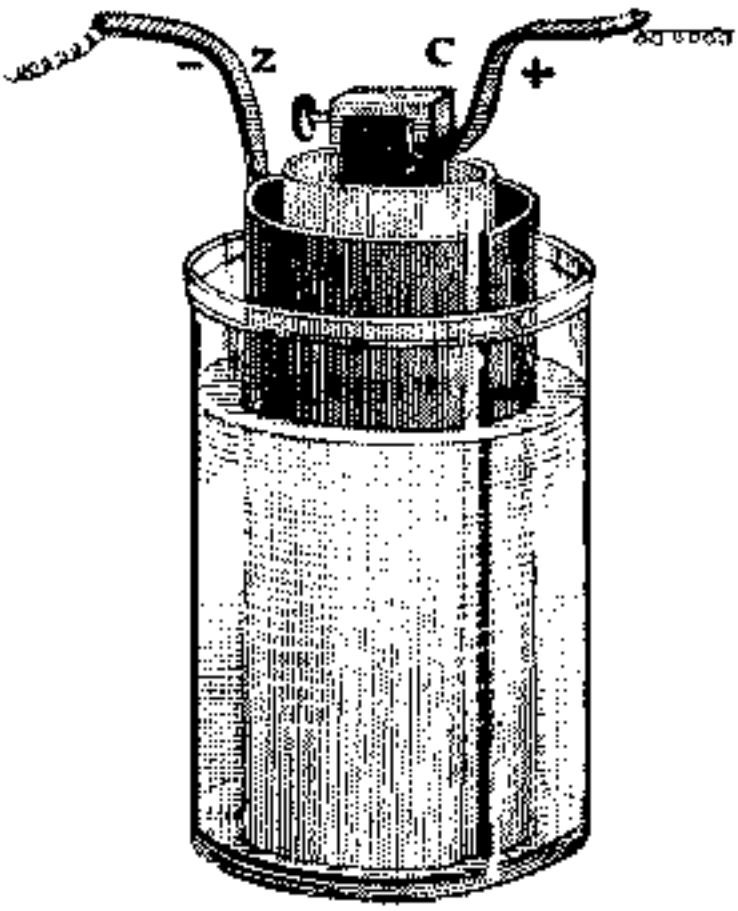

Fig 1. Bunsen Double Fluid Primary Cell

The **Bunsen cell is a double fluid** primary voltaic or galvanic cell - **Fig. 1**. This cell and its variants are made of carbon and zinc electrodes. This cell is remarkably similar of the Grove cell in every respect, except that it uses carbon as a positive electrode instead of platinum. The cylindrical porous clay pot contains the NHO_3 catholyte and the carbon electrode. The zinc electrode is usually made into a cylindrical shape that surrounds the negative terminal assembly and it is immersed into a 10% diluted H_2SO_4 anolyte. All cell components are located inside a strong glass jar.

Like all other primary electrolytic cells, this cell is also **generating electricity by chemical action**. Chemical action results in the change of substances from their original form to a new substance with new properties. Voltaic cells produce electrical energy by direct conversion that is a result of a redox chemical reaction.

The Bunsen cell has an **open circuit voltage of 1.90 Volt**. It is able to supply strong current that was used in the past for powering laboratory instruments, for galvanizing different items and powering small electric motors. The depolarizer in the Bunsen cell is fuming nitric acid.

Many different Bunsen cell variations are known and used. Some of the more popular versions used chromium acid Cr_2O_7 as the depolarizer. The chromium acid Bunsen cells were widely used around the early part of the 1900s for laboratory experiments. Because of the different chemicals used, that cell has an open circuit of 2.0 Volt. Bunsen cell components should be well washed immediately after use, and the acids stored for future use in separate bottles.

The popular Bunsen cells helped to power the rapid development for the newly emerging postal, rail and transportation sectors between the years of the late 1800s to 1920 and beyond.

Previous Page