SCIENCE

CHEMICAL EFFECTS OF ELECTRIC CURRENT

INTRODUCTION

Energy is available in various forms. We need different kinds of energy for doing different kinds of work. Quite often, a pariticular type of work can be done by using different forms of energy.

So, quite often we need to convert one form of energy into another. The change of one form of energy into antoher is known as transformation of energy.

Electrical energy is a very useful form of energy. It can be converted into chemical energy of certain types of substances. This is what we call as the chemical effects of current. In this chapter, you will learn about the processes in which electrical energy is converted into chemical

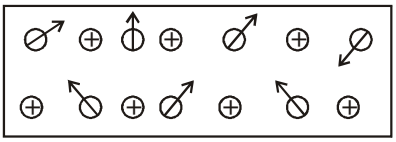
energy.

- Defination: The phenomenon of causing chemical changes by passing electricity is called chemical effects of current.
- Electrodes: In a circuit an electrode is a conductor that is in contact with a nonmetallic thing like a liquid or gas.
- Cathode: The electrode connected to the negative terminal of a batlery is called the cathode.

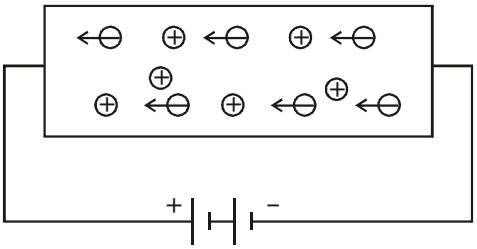
Distilled water does not conduct electricty

- Anode: The electrode connected to the positive terminal of a battery is called the anode.
- Conduction in solids: All substances are made up of atoms, which have charged particles called electrons and protons. Electric current is produced due to movement of electron or charged particles.

  Among solids metal are good conductor of electricity because electrons move randomly in different direction within the metal. When voltage is applied across a piece of a metal these electron move in one direction ot produce current.



R and only moving electron in a metal bar



Electron move in one direction when voltage applied

❖ Conduction in Liquids: The current through them is constituted by the flow of electrons or ions.

Ions: An atom or a radical that becomes charged by losing or ganing one or more electrons is called an ion.

Cation: The positively charged ion formed by the loss of electon is called cation.

$$Na - e^{-} \text{¾®} Na^{+}$$

Anion: The negatively charged ion formed by the gain of electron is called anion.

$$Cl + e^{-} \text{¾®} Cl^{-}$$

anion