



SNS COLLEGE OF TECHNOLOGY



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ELECTROCHEMICAL CELL OR GALVANIC CELL:

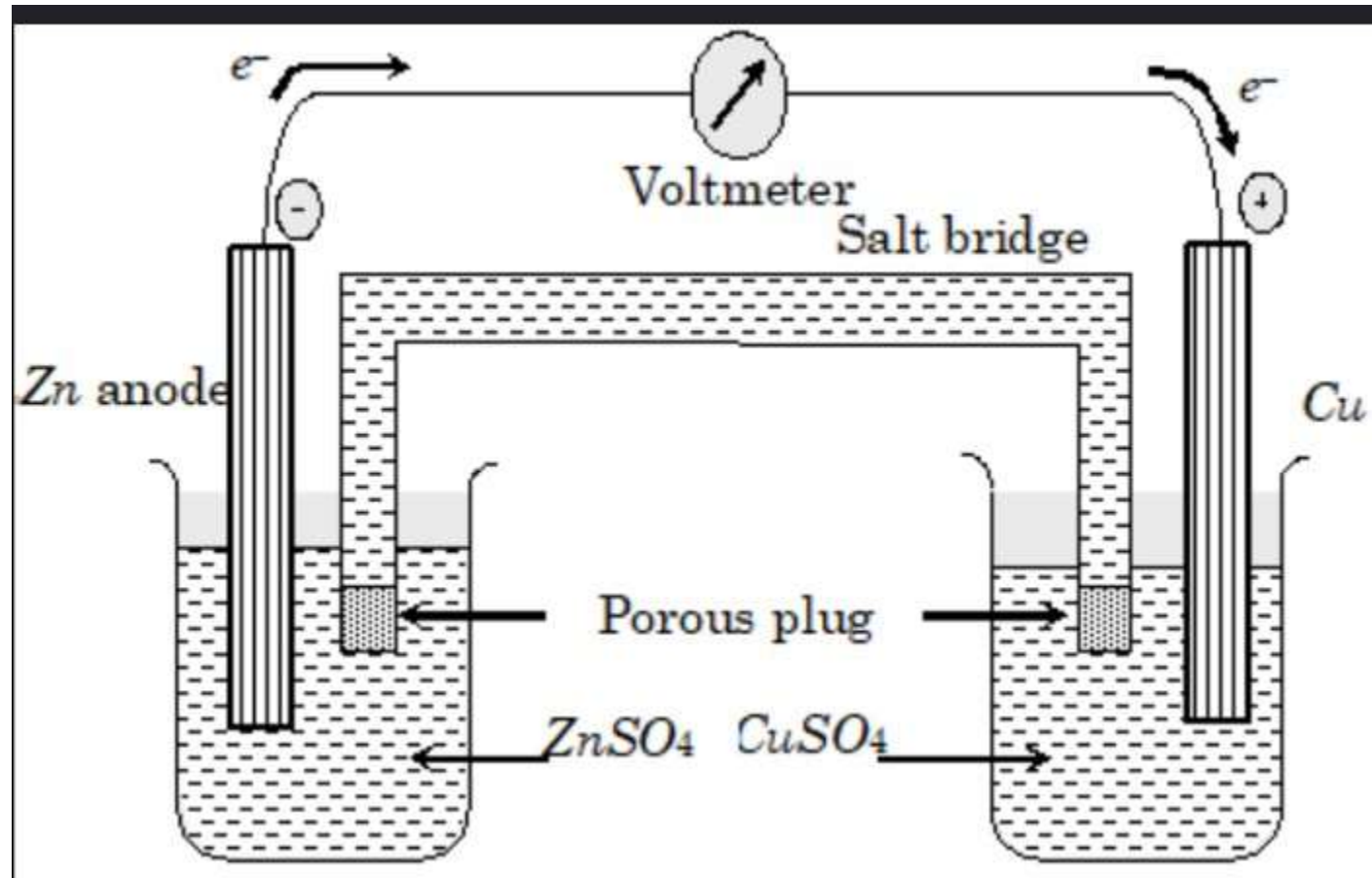


Galvanic cell are electrochemical cell in which the electrons transferred due to redox reaction are connected into electrical energy.

Example: Daniel cell



DANIEL CELL:





CONSTRUCTION:



Galvanic cell consists of a zinc electrode dipped in 1M ZnSO_4 solution and a copper electrode dipped in 1M CuSO_4 solution. Each electrode is known as a half cell. The two solutions are interconnected by a salt bridge and the electrodes are connected by a wire through a voltmeter.



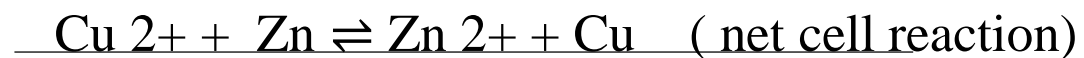
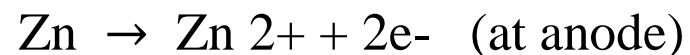
AT ANODE:



- Oxidation takes place in zinc electrode by the liberation of electrons, so this electrode is called negative electrode or Anode.

AT CATHODE:

Reduction takes place in the copper electrode by the acceptance of electrons. so this electrode is called Positive electrode or Cathode.



The electrons liberated by the oxidation reaction flow through the external wire and are consumed by the copper ions at the cathode.



SALT BRIDGE:



It consists of U tube containing saturated solution of KCl or NH_4NO_3 in agar – agar gel. It connects the two half cells of the galvanic cells.

FUNCTIONS OF SALT BRIDGE:

- It eliminates liquid junction potential.
- It provides the electrical continuity between the two half cells.



DIFFERENCE BETWEEN ELECTROLYTIC CELL AND ELECTROCHEMICAL CELL



ELECTROLYTIC CELL

- Electrical energy is converted into chemical energy.
- The anode carries (+) charges
- The cathode carries (-) charges
- The electrons are supplied to the cell from the external battery (i.e) electron move in through cathode and comes out from anode
- Battery is used.

ELECTROCHEMICAL CELL

- Chemical energy is converted into chemical energy.
- The anode carries (-) charges
- The cathode carries (+) charges
- But electrons are drawn from the cell (i.e) electrons move from anode to cathode through external circuit.
- Voltmeter is used.



THANK YOU