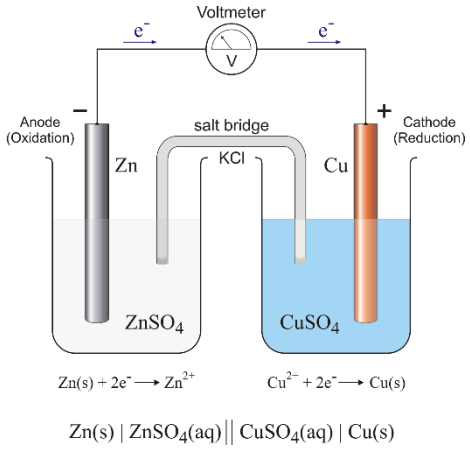
REDOX II:

- Loss of electrons – **oxidation** – ON increases
- Gain of electrons – **reduction** – ON decreases.
- They happen simultaneously since **REDOX.**

Electrochemical cells:



- Made from 2 different metals dipped in salt solutions of their own ions and connected by a wire. Always 2 reactions within the electrochemical cells.
- 2 half-cells make a complete cell.
- Oxidation at anode, reduction cathode.
- Electrons flow from anode to cathode. (more reactive to less reactive)
- Reactive metals are oxidised, less reactive become a cathode.
- A voltmeter in the external circuit shoes the **voltage** between the two half-cells. This is **cell potential (EMF)**. They also measure the flow of electrons.
- **The electromotive force (emf)** – *The standard electrode potential of a half-cell (measured under standard conditions) connected to a standard hydrogen electrode.*
- Half cells can have solutions of two aqueous ions of the same element. The conversion happens on surface of electrode. For that electrode must be made from inert conducting material i.e. platinum/graphite.
- **Oxidation** shown on left, **Reduction** on right.
- The reactions happening on the electrodes are reversible and are written as such.

Method of setting up electrochemical cell:

- Clear each strip of metal using sandpaper.
- Clean grease/oil using propanone.
- Place each electrode into beaker containing the solution of ions of that metal.
- Create a salt bridge to link the two solutions together. Can be done by soaking a piece of filter paper in salt solution and draping it between the two beakers. Ends should be immersed in solutions. The salt bridge usually contains **conc. solution of potassium nitrate in form of liquid or gel.** It allows the movement of ions.
- Connect the voltmeter using crocodile clips and wires.