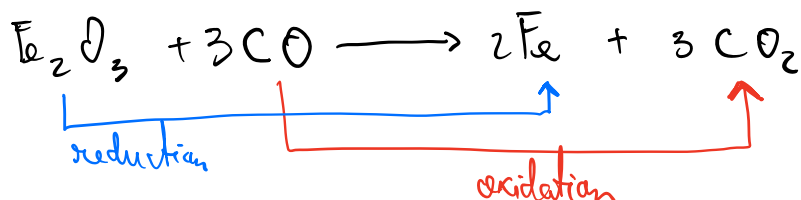


- **redox** reactions in terms of the transfer of
 - oxygen
 - hydrogen
 - electrons

REDOX → OXYGEN TRANSFER

- **oxidation** and **reduction** can be defined in terms of the **adding or removing oxygen** to a compound
- **oxidation** is the gain of **oxygen**
- **reduction** is the loss of **oxygen**



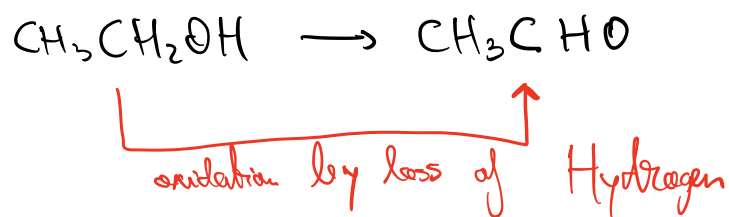
Redox reaction [oxidation reduction] → occur simultaneously

- oxidizing agent → substance which oxidizes something else
 ↓
give oxygen to another substance
- reducing agent → substance which reduces something else
 ↓
removes oxygen from another substance

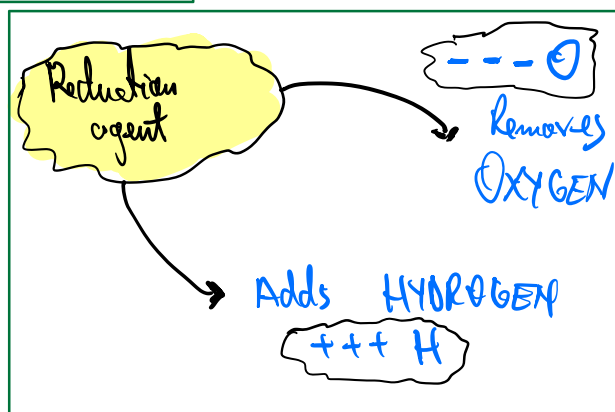
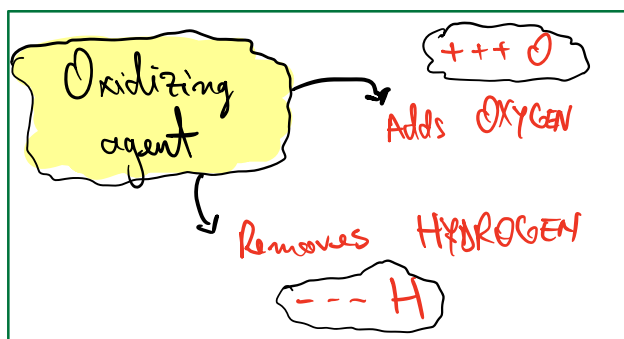
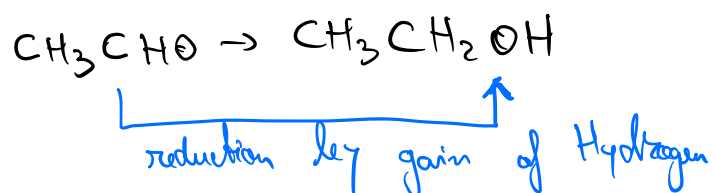
REDOX → HYDROGEN TRANSFER

- **oxidation** is the loss of **Hydrogen**
- **reduction** is the gain of **Hydrogen**

Example : a) Ethanol $\xrightarrow{\text{oxidation}}$ ethanal

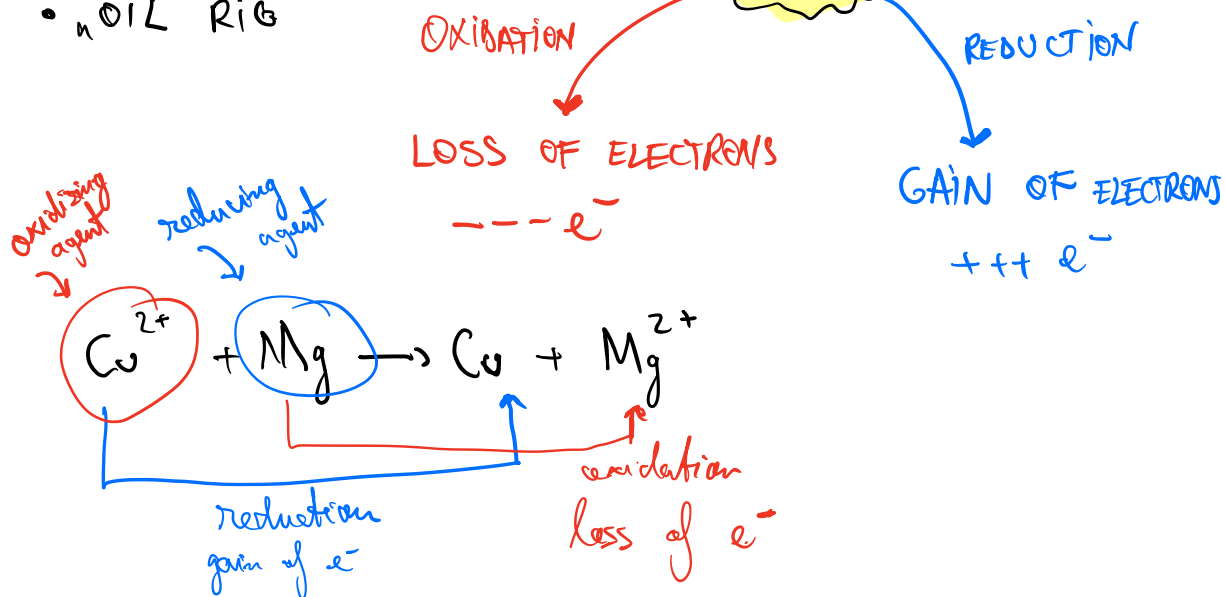


b) Ethanal $\xrightarrow{\text{reduction}}$ Ethanol

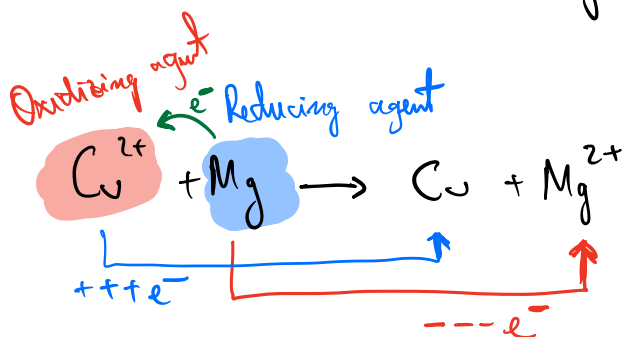


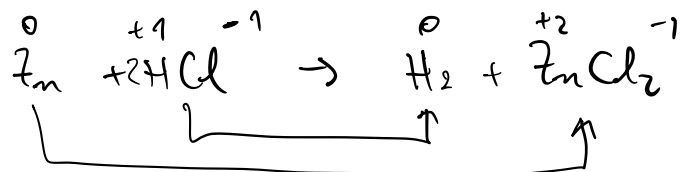
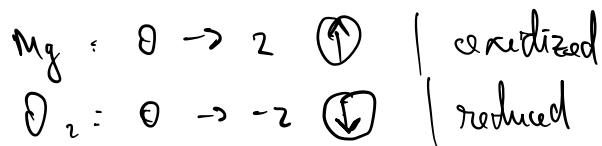
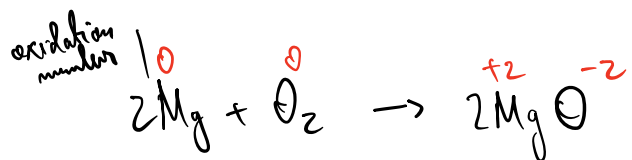
REDOX \rightarrow ELECTRON (e^-) TRANSFER

- ↓
- in terms of **electron transfer** **REDOX** is
 - "OIL RIG"



- oxidizing agent: → it oxidizes something else
 - loss of electrons
 - takes electrons from the other substance
 - gains electrons
- oxidizing agent: → it is being reduced
 - reduction is gain of e^-
 - it gains electrons





+1e⁻ → gained an electron
 → HCl has been reduced
 → the reducing agent is Zn



-2e⁻ → lost 2 electrons
 → Zn has been oxidized
 → 2HCl is the oxidizing agent

