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Energy storage devices - Batteries

Class content:

- ***Classification of Batteries***

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Energy Storage devices- Batteries

Based on working, two types of batteries:

Primary battery

- Electroactive material cannot be regenerated
- Discarded after electroactive species is consumed
- Galvanic cell
- Dry cell, Li-MnO_2

Secondary battery

- Electroactive material can be regenerated
- Can be used several times
- Galvanic as well as electrolytic cell
- Storage battery
- Li-ion, Pb-acid, Ni-Cd

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Energy Storage devices- Batteries

Reserve batteries

- One of the **key component is kept separated** from the rest of the battery

allowed to come in contact with other components when required

- Usually the electrolyte is the component that is isolated
- When one of the key components of the cell is separated from the rest of the cell,

chemical reaction between the cell components (self discharge) is prevented

- Has **unlimited shelf life**
- Usually designed for **emergency use** e.g mid-air crisis

•**Examples: Mg-AgCl(water activated) , Zn-Ag_2O(KOH activated)**

•Applications: Sonobuoys, Weather balloons, Emergency lights etc.,

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Energy Storage devices- Batteries

Salient features:

Quick activation

- Deliver high power for a short time - many kW for several minutes
- No self-discharge
- Unlimited shelf life
- High reliability
- Examples : Mg-AgCl(water activated) , Zn-Ag_2O(KOH activated)

THANK YOU

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