

1) Give a brief account of the applications of conducting polymers.

Conducting polymers are utilized in a wide range of applications for flexibility and processability, including:

-> Electronics and Energy Storage:

Organic Light Emitting Diodes (OLEDs):

Used as emissive materials in displays due to their ability to emit light when an electric current passes through them.

Supercapacitors:

High surface area conducting polymers can store significant amounts of electrical charge quickly.

Batteries:

Used as electrode materials in rechargeable batteries, offering potential for improved energy density and cycle life.

-> Sensors and Detection:

Gas Sensors:

Due to their sensitivity to changes in gas concentration, conducting polymers can be used to detect various gases.

Chemical Sensors:

Can detect specific chemical analytes by changing their electrical properties when exposed to the target molecule.

2) Write the classification of polymers.

Polymers can be classified based on:

- *Source: Natural, Synthetic, Semi-Synthetic

- *Structure: Linear, Branched, Cross-linked

- *Polymerization method: Addition,
Condensation

- *Physical Properties: Thermoplastic,
Thermosetting, Elastomer