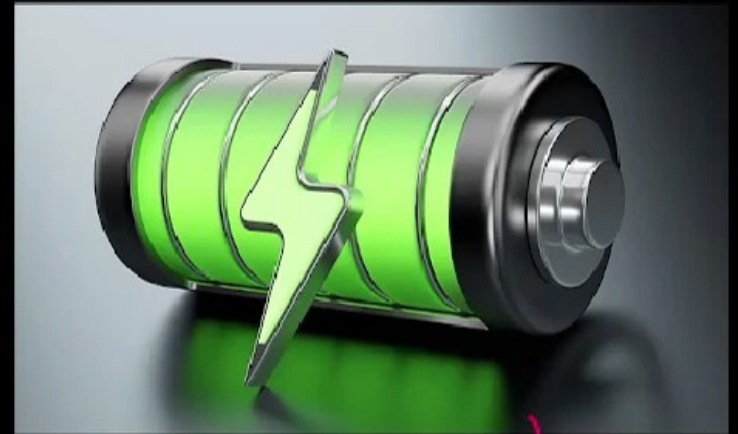




Capacitor

Electric energy store



Battery

Electric energy store



Capacitor v/s Battery

A hand-drawn title "Capacitor v/s Battery" in yellow text inside a light blue thought bubble. The bubble has a wavy, cloud-like border. Below the bubble, there are two small circles and a portion of a person's head, suggesting the drawing was made on a screen or board during a presentation.



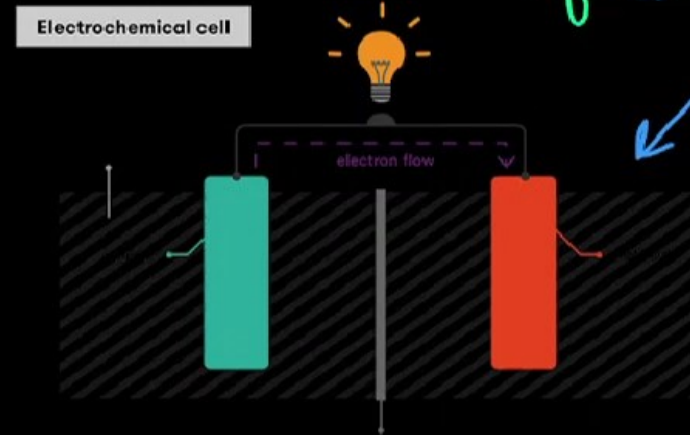
Form of energy storage



store energy  
in the form of  
electric field



store energy in form  
of chemicals





Active passive  
component

↓  
passive component

↓  
Can't power  
an electrical  
circuit

↓  
Never be considered  
as source



↓  
active  
component

↓  
Can power an  
electrical circuit

↓  
Consider as  
source



Low energy density

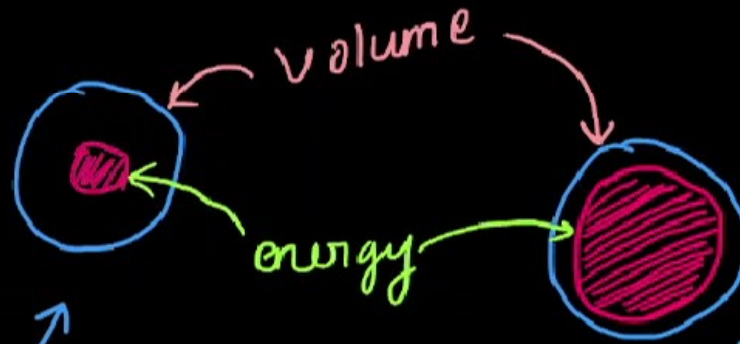
Low electric energy stored in large volume

## Energy Density



High energy density

Large electric energy stored in small volume



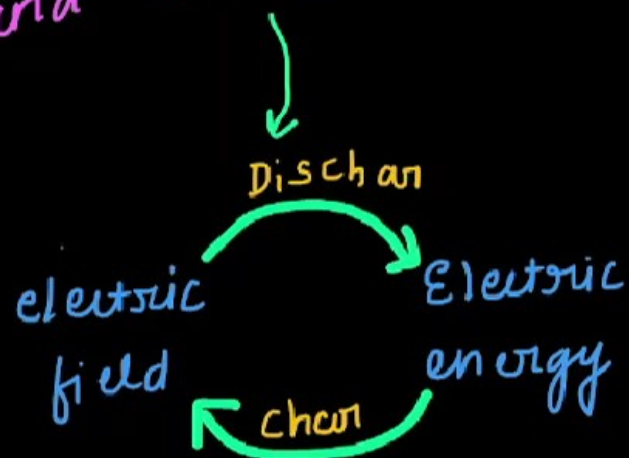




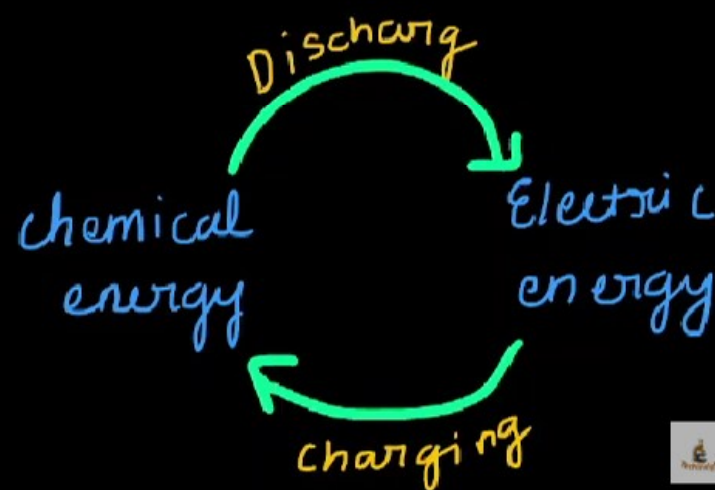
# Charging / Discharging Rate



fast charging  
and discharging



slow charging  
and discharging





Used for AC  
application

Blocks DC

A.C and D.C  
Application



Used for DC  
applications

Don't works  
on AC

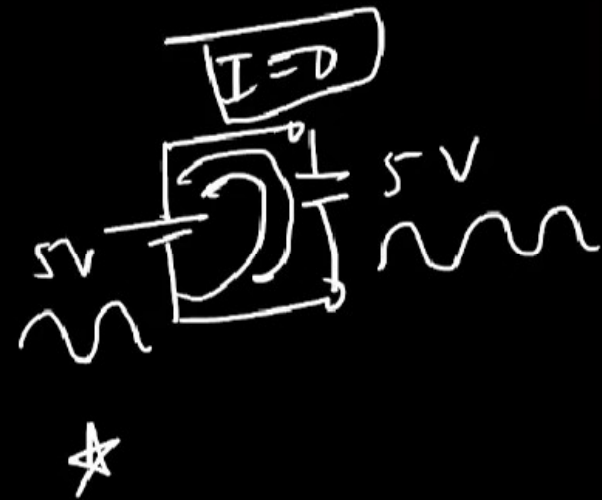


# A.C and D.C Application



Used for **AC** application

Blocks **DC**



con  
fix  
polarity

Used for **DC** applications

Don't works on **AC**

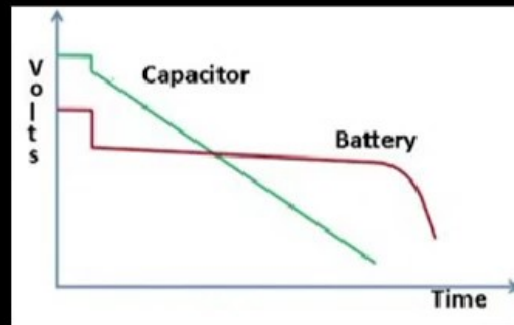




# Voltage drop Rate

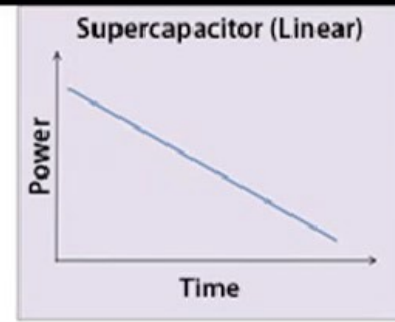
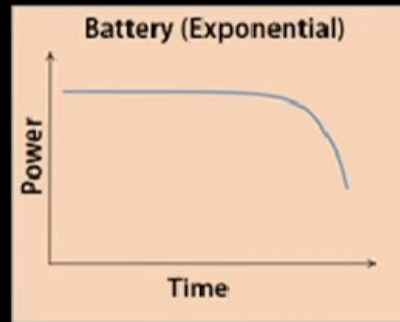


Voltage drop very fast during discharging



Maintain constant voltage across its terminal for large duration during discharging

due to small energy density



due to large energy density



Efficiency



Electrical  $\longleftrightarrow$  Electrical

↓  
Low energy  
conversion losses

↓  
High  $\eta$

chemical  $\longleftrightarrow$  Electrical

↓  
High energy  
conversion losses

↓  
Low  $\eta$