Practical-3

OLED(ORGANIC LIGHT EMITTING DIODE)

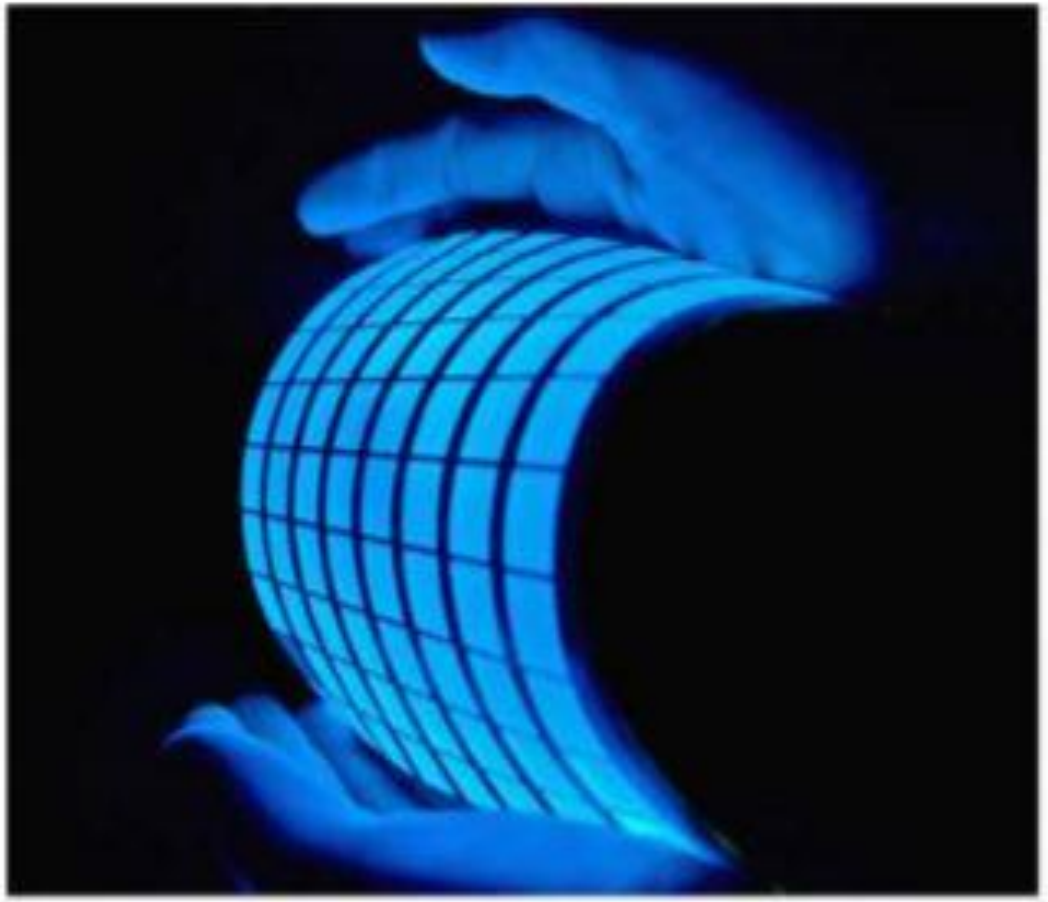
U.V Patel College of Engineering

Ganpat University
॥ विद्यया समाजोत्कर्षः ॥

What is an OLED?

•These all devices may be possible in the near future with the help of a technology called Organic Light-Emitting Diodes.

• An OLED is any light emitting diode in which organic layers are responsible for light emission.



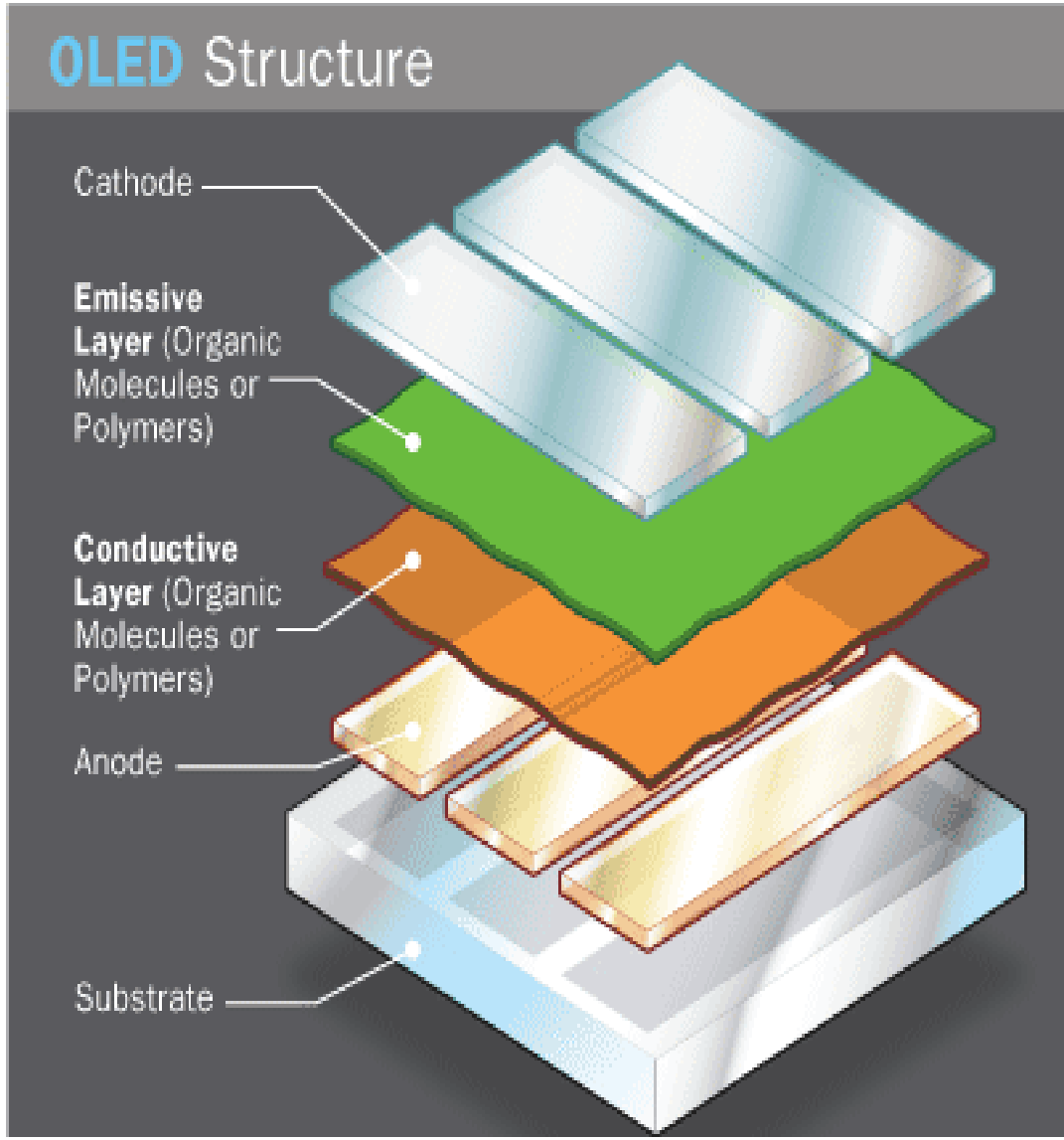
OLED Structure

Cathode - The cathode injects electrons into emissive layer.

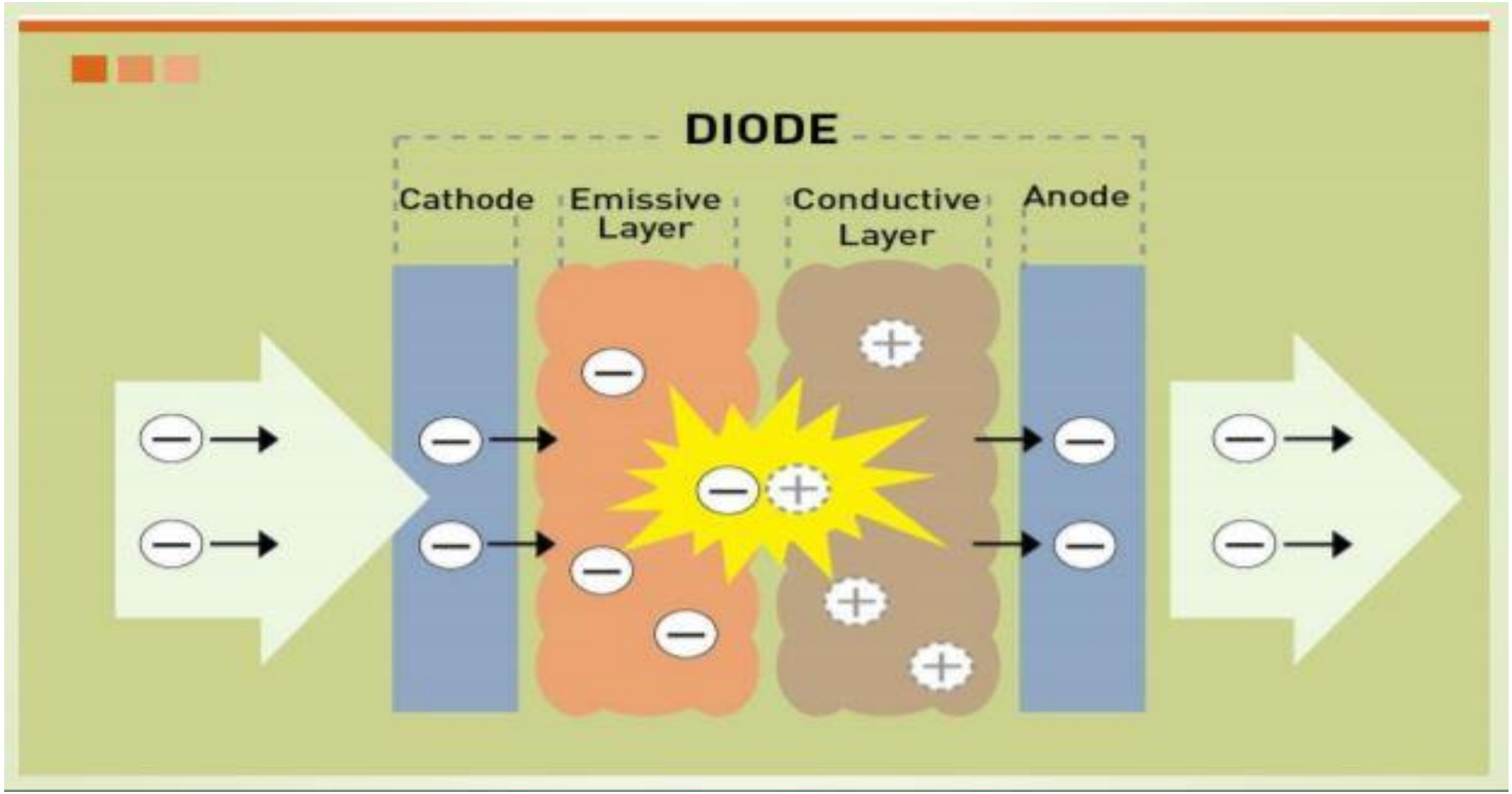
Emissive layer - This layer is made of polyfluorene that transport electrons from the cathode. This is where light is made.

Conducting layer - This layer is made of polyaniline that transport "holes" from the anode.

Anode – It is kept transparent. Usually made up of Indium tin oxide (ITO) that removes electrons. Substrate - The substrate supports the OLED.



How it works?



ADVANTAGES

- Less power consumption
- Lower cost in the future
- Flexible Display
- Thin display
- Safer for environment

Wider Viewing Angle

Better contrast ratio

Drawbacks

Lifespan

Easily damageable

Outdoor performance

Complex fabrication methods

Application

PARAMETER	LED	OLED
Expands to	Light emitting diode	Organic light emitting diode
Power consumption	More	Less
Viewing angle	54°	84°
Cost	Less	More
Picture quality	Good	Comparatively better
Brightness	More	Less
Flexibility	less flexible	More flexible
Size	Large	Comparatively small
Lifespan	More	Less
Screen Thickness	Thin	Comparatively thinner
Weight	Heavy	Lighter in comparison to LED
Response time	Slow	Fast