TRANSPARENT ELECTRONICS

Kmd Ravi Teja

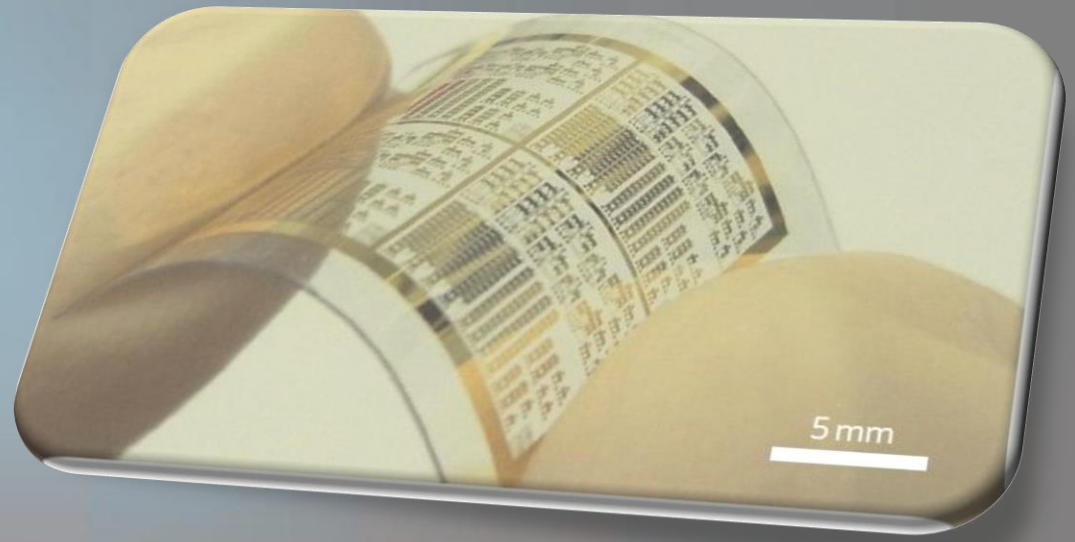
DEFNITION:

- The field of electronics which transforms the electronic devices into Transparent devices.
- Replacing opaque materials with transparent ones.
- Optical principle :absorbing all colours of light and not letting them reflected.

Why Transparency…?

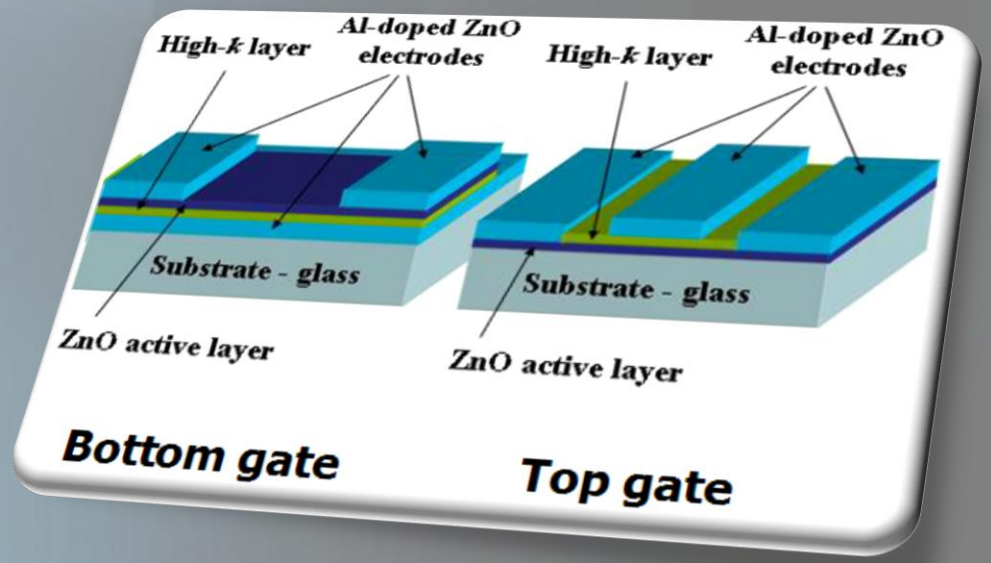
Way to achieve this Transparency

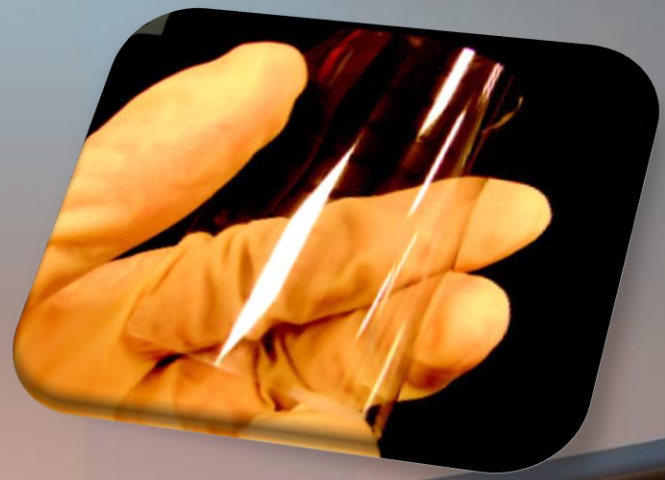
- Good conductive transparent materials
- Well built transparent components and circuits
- Implementing the design based on application



How does this work…?

- Transparent thin film transistors(TTFT)
- Transparent conducting oxides(TCO)





Properties about TCOs and TTFTs

- Wide band gap
- Transparency
- High carrier mobility
- Mechanical flexibility
- Low temperature processing

Applications

- Transparent electronic paper
- Transparent devices
- Transparent screen display on front shield of vehicles

ADVANTAGES

- These devices have more conductivity.
- New transistors work extremely well.
- New inorganic oxides have higher mobility, better chemical stability, ease of manufacture, physically more robust.

Difficulties that incur

- Lack of both highly conductive and transparency materials
- High resistance offered by TCOs
- Low frequency operation by the TTFC.
- Search of new materials that constitute properties similar to TCO

Conclusion

- Thus the TCOs paved a way to the establishment of new technology which replaces the present opaque electronic bodies with the emerging transparency.

Future scope

- Solar windows
- Flat panel displays
- Vehicle dashboard display in front

Thank you