

Photoalignment of Liquid Crystalline Materials

HKUST

1. Photo-alignment Technology (Applied in LCD industry)

- Clean alignment method without mechanical rubbing
- Work in VA and IPS modes

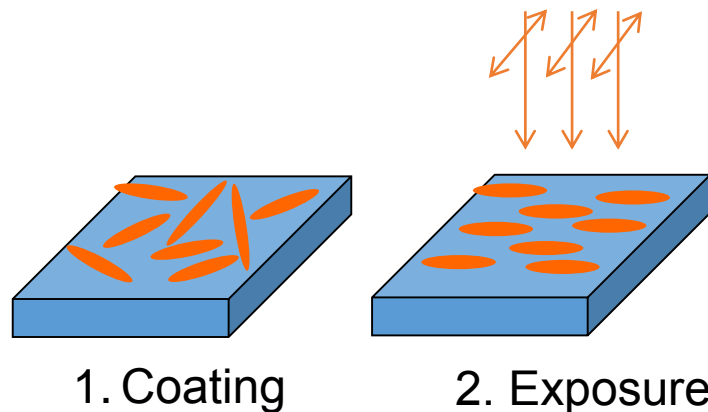
Advantages:

- Enhance Production Yield
- Low Equipment Cost (LED enable)
- High Resolution Possible

Simple process compatible to current LCD manufacturing process:

1. Alignment material coating by APR PI coating machine
2. Soft-baking
3. Light exposure
4. Hard-baking

Principle: Photo-induced molecular re-orientation



2. Reversed Mode Smart Window

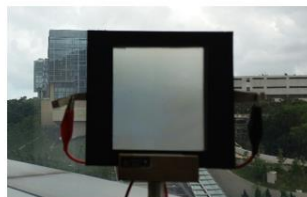
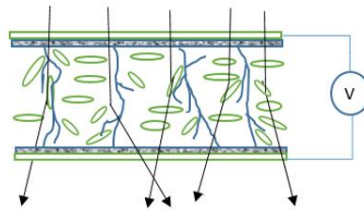
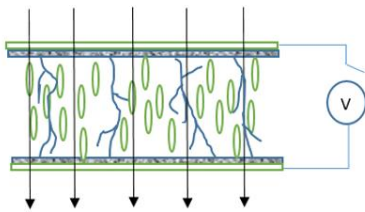
Applications:

- Privacy Window in Conference Room, Hotel, Residential Use

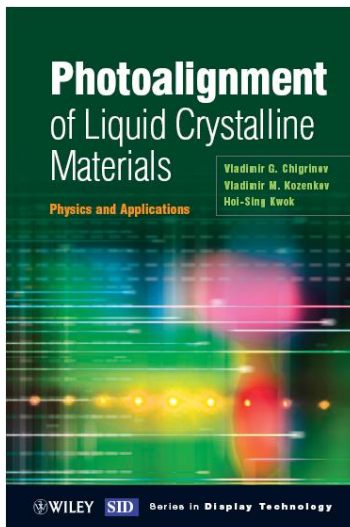
Advantages:

- Normally Clear (Energy Saving)
- Wider Viewing Angle
- Lower Operating Voltage

Principle: Vertically Aligned Polymer Network Liquid Crystal



Figures



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