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Polatechno Co., Ltd.

President, CEO Katsuhiko Sakitama

Development of In-cell Polarizer for High Performance LCD Display / Organic EL Display

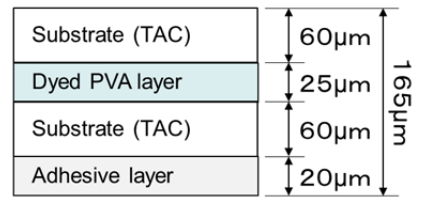
Polatechno Co., Ltd. (Head Office: Joetsu-city, Niigata, Japan; President: Katsuhiko Sakitama) have successfully developed thin-shape in-cell polarizer has outstanding heat resistance.

In-cell is used in referring to the arranging polarizer inside display so that realize high performance display and variety of additional function. Traditional polarizer film has a structure like put dyed PVA film (polyvinyl alcohol) between the substrates as TAC film (Triacetylcellulose) or others and is applied adhesive material. Its thickness around 165 μm is recognized as thick (Diagram 1). Developed polarizer for in-cell has structure with only two layers of dyed PVA and adhesive material so that its thickness as 15 μm (Diagram 2) can be said that it's thin. Furthermore it can endure 150°C high temperatures within 30 minutes so that it realized to create in-cell display of LCD and Organic EL.

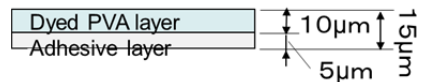
Diagram 3 is a sample of in-cell polarizer applied to LCD display, in-cell polarizer arranged side of LC layers of quantum dot color filter. This structure can realize outstanding outdoor visibility, low energy consumption and excellent color reproducibility [1] [2]. Diagram 4 is a sample of in-cell polarizer applied to organic EL display, its structure as in-cell polarizer are arranged between cover film and organic EL element so that it contribute to thin and flexibility of organic EL displays.

We are planning to ship its samples in June 2019 and implement mass production in September 2019.

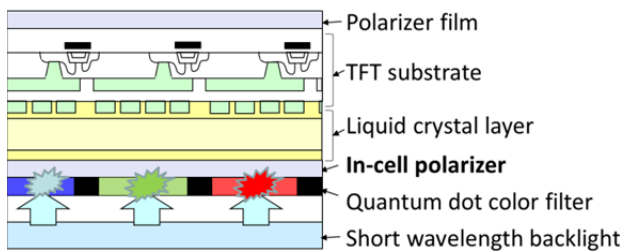
Additionally we announce this product is slated to be exhibited at exhibition adjoining international symposium SID 2019 in San Jose (US) will be held from 14 May to 16 May.



D1 : Traditional polarizer film (our standard products)



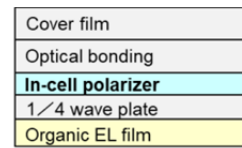
D2 : In-cell polarizer (newly developed)



D3 : In-cell polarizer quantum dot color filter LCD



(b) Image of display in outdoor environment



(a) Structure



(b) Image of products

D4 : In-cell polarizer are applied to organic EL
By arranging in-cell polarizer inside of cover film and optical bonding layers, we realized organic EL available to have excellent bendability.

References

- [1] N. Koma, et al., IDW2017, FMC2-5 (2017)
- [2] N. Koma, et al., SID2018, P120 (2017)

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