

Graphene application towards flexible OLED display

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Graphene has been a promising material for flexible optoelectronic devices due to its outstanding material properties.

Many research groups have shown great potentials of graphene for various flexible devices such as touch-screen sensors, organic light-emitting diodes and organic photovoltaic devices¹.

However, Graphene has still hindrances and challenges to overcome towards the success of a commercialization.

In this talk, from a commercial perspective, we'd like to share our opinion on probable application fields of graphene towards the application of flexible and foldable OLED display.

For your information, we will introduce the product outline of LG Display which has a global No. 1 display market share.

Specifically, we will highlight the possibility of graphene as a transparent electrode for flexible OLED display due to its extraordinary optical, mechanical and electrical material properties.

In addition, we will also emphasize superior gas and moisture barrier properties^{2,3} of graphene which have big potentials for the application of flexible OLED encapsulation.

For flexible OLED encapsulation, Graphene has enormous potential for overcoming the limitation of inorganic materials which have been predominantly employed in OLED encapsulation field.

Graphene's extraordinary mechanical flexibility combined with excellent barrier property will be able to replace inorganic materials which have been widely used in flexible OLED encapsulation.

We will also briefly mention other possible application fields of graphene for flexible OLED displays.

Finally, we will point to some challenges to obstruct the commercialization of graphene.

In my view, this talk will be a good chance to discuss the practical use of Graphene for flexible and foldable OLED displays.

References

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