Graphene Production for Flexible Optoelectronics Devices

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Abstract

Graphene has attractive optical and electrical properties for flexible electronics and optoelectronics devices applications. The production of monolayer graphene film is of great significant for various flexible optoelectronics devices applications such as touch panels, OLED, E-ink displays and so on. Although the high quality monolayer graphene film can be epitaxially grown by chemical vapor deposition in the lab scale, the production of low cost and high throughput graphene film remains challenge. In this talk, I will give a brief introduction of graphene film manufacturing technology, and show our recent progress on mass production of graphene film for industrial applications. The flexible touch screen and e-ink display is shown and the prototype of the flexible optoelectronics devices will be demonstrated. Finally, the potential and challenge of the graphene film application in future flexible optoelectronics devices will be discussed.

References

[1] H. Jang et. al., Adv. Mater. 28 (2016) 4184.
[2] X. Xiao et. al., Nat. Mater. 15 (2016) 697.

Figures

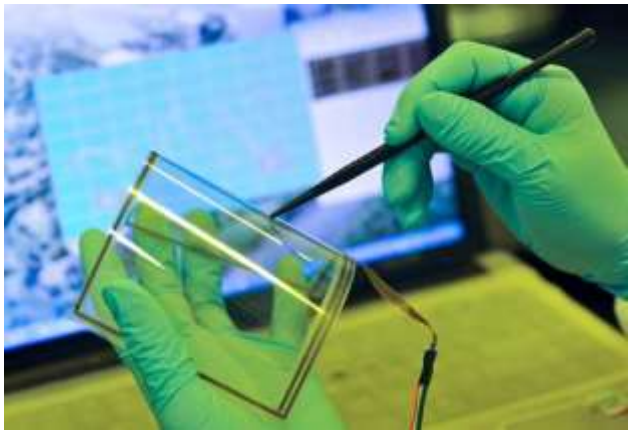

Figure 1: Flexible graphene touch panel.

Figure 2: Flexible graphene-based smartphone produced by Chongqing Graphene Tech. Co., Ltd.