

Stakeholder approach for graphene applications

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Abstract

It has been two decades since the first isolation of graphene. Since then, numerous scientific discoveries have been made regarding its extraordinary properties. The development of synthesis methodologies and related applications has also been remarkable, raising high expectations that graphene will revolutionize many industries [1]. As scientific knowledge is accumulated, engineering issues that apply this knowledge to actual products are garnering more attention. Thus, successful commercialization of graphene-based products would require tight collaboration among academia, industry, and potential customers [2].

MCK Tech was established in 2017 to develop and commercialize graphene product. It became a research-based spin-off company of the Center for Advanced Metamaterials (CAMM) in 2019. CAMM, which was launched in 2014 as a center for Global Frontiers Projects supported by the Ministry of Science and ICT, is geared towards developing core technologies in controlling wave energies by incorporating creative artificial structures of sub-wavelength sizes. We are collaborating to develop graphene metamaterials that can control electromagnetic waves using large area CVD graphene.

At MCK Tech, we work closely with our customers. We believe that listening to their needs is crucial since they are more interested in what the material can deliver rather than what the material is. Therefore, we provide customized graphene considering customer requirements such as form factor (roll/sheet), electrical properties, and chemical properties.

During this talk, I will present some of our applications, including graphene metamaterials, as well as sensors for monitoring sodium/potassium excretion in urine [3], among others.

References

- [1] L.Lin et al., Nat. Mater. 18(6) (2019) 520-524
- [2] S.Park, Nat. Rev. Mater. 1(11) (2016) 1-2
- [3] H. Oh et al., Nanomaterials 11(3) (2021), 787

Figures

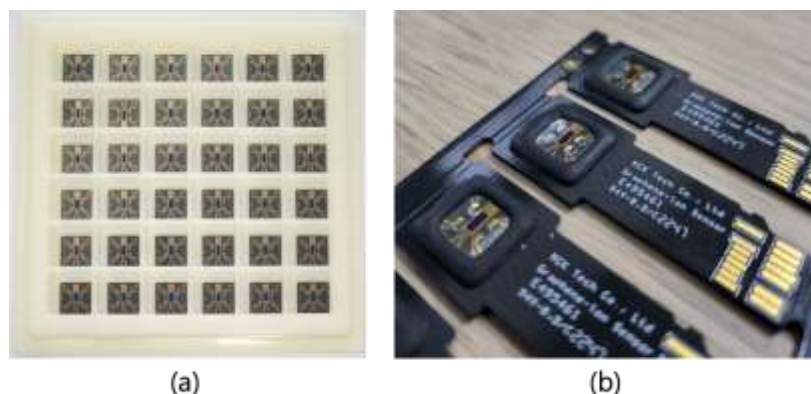


Figure 1: (a) Graphene FET (G-FET) (b) Packaged G-FET