

Graphene manufacturing and integration at wafer scale

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Over the past years, extensive efforts have been placed in the research and development of graphene-based applications, as a consequence, certain applications have experienced an increase in the technology readiness level. However, in order to get closer to the market, reliable and reproducible processes at wafer scale are needed. At present, the most mature catalyst technology relies on copper foils, where graphene at 200mm wafer scales can be obtained. Graphene transfer has also evolved from the so-called wet transfer to the more scalable semi-dry transfer where standard semiconductor industry equipment such as wafer bonders can be employed. Finally, device fabrication at relevant wafer scales is critical for a successful market uptake.

Depending on the application, the substrate might require planarization for reliable graphene transfer as in the case of waveguide containing substrates. During this talk, I will cover the transfer of graphene on waveguide containing wafers relevant for optical gas sensor applications as well as the latest progress on graphene transfer [1]. In addition, graphene integration in sensors will also be covered [2-4].

References

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