

## Synthesis and Characterization of Graphene

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Researchers envision many different applications for graphene. Depending on the application the required graphene format can vary from powder/flake to homogeneous film form. The powder form can be obtained starting from graphite while the large area graphene films can be obtained using silicon carbide sublimation and chemical vapor deposition (CVD) methods. In the CVD method, graphene is synthesized via the deposition of a carbon source on a metallic catalyst substrate at high temperatures. Copper and nickel metals have been widely used as graphene catalysts during CVD growth. Copper has been reported to control better the monolayer graphene growth [1].

However, the growth is not the only process that needs to be optimized in order to have high quality graphene on insulating substrates. The graphene transfer process is as important as the growth since the synthesized graphene can easily be damaged during the transfer. After a careful characterization of our monolayer graphene by means of Raman and optical microscopy, the limiting factors for a successful graphene transfer were determined. Moreover, we have also obtained suspended graphene samples which were characterized via High Resolution TEM and Scanning mode TEM [2].

### References

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