

# Strain characterization in suspended CVD graphene films using optical and electron microscopy

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## Abstract

Quantifying strain in CVD graphene films is beneficial to study their intrinsic properties and the influence of various processing conditions during their synthesis, integration, and applications.<sup>1</sup> Raman spectroscopy has been widely used to ascertain strain and doping level in CVD graphene films.<sup>2</sup> In this study, we utilize selected area electron diffraction (SAED) imaging as a detection method to ascertain strain magnitude in suspended CVD graphene films. We demonstrate the quantification of strain in suspended CVD graphene films and compare the findings with the large-area Raman mapping technique.<sup>3,4</sup> Interestingly, using both these methods we are able to ascertain consistent compressive strain patterns in suspended CVD graphene films. In addition, given that the CVD graphene films remain on their growth substrates during the characterization, we are able to significantly minimize the influence of transfer process on the CVD graphene films.<sup>3-5</sup>

## References

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