

Levitation of Graphene – Evidence of Liquid Marble Formation

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Acoustic levitation is a straightforward technique that has readily been used in the study of fluid dynamics, liquid evaporation and crystal nucleation as it provides a substrate-free environment in which to study materials of interest [1-3]. In this study, graphene dispersions are levitated under controlled environmental conditions and their evaporation behaviours are analysed. Our results [4] show that at a particular solvent ratio composition and graphene concentration, the graphene droplets stop evaporating. This is attributed to a sharp phase change from liquid to a soft solid, associated to the formation of a liquid marble [5], generated by the hydrophobic nature of graphene. As liquid marbles show unique properties, such as frictionless motion and high compressibility, this work highlights the possibility of using such systems for several applications, such as in sensing and biology.

References

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