

Conception of experiment to generate graphene sheets through cold welding

Deepanker Shukla
Independent Researcher
incdsg@yahoo.com
ORCID 0000-0002-3870-0761

Abstract

This paper documents the concept of an experiment designed to test the possibility of graphene sheet generation through cold welding and/or heat treatment and is based on certain assumptions and creative ignorance.

Keywords

Graphene, Cold welding, Heat treatment, Experiment.

Introduction

The design is based on few assumptions such as cold welding of graphene parts that are scrapped off graphite can induce outer valence electrons into required state and further heat treatment can help with creating one sheet out of two. Figure 1 depicts the arms moving sheet of graphene over another with preferably similar boundary to minimize defects in end product.

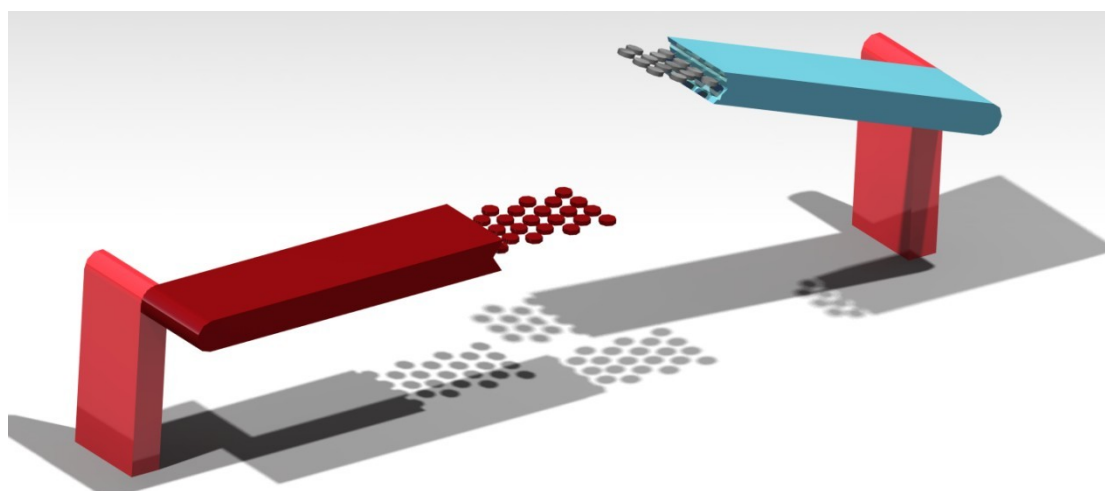
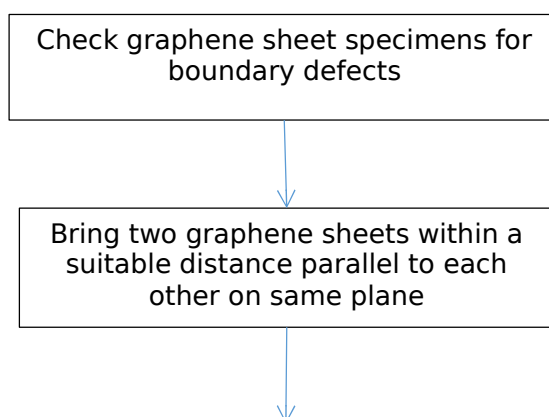
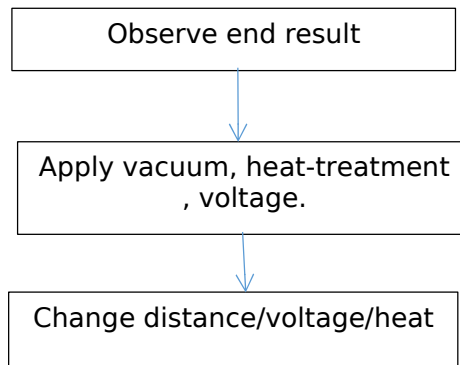


Figure 1

The flow diagram below depicts the experiment concept:





Conclusion

The experiment draws inspiration from simplicité graphene manufacturing process and builds on the literature gap on excitation of individual atoms at the boundry of graphene sheets removed from graphite to ease joining to separate sheet which further can be modularized and repeated over and over again to gain better yield sheets while having a trade with defects at joining of boundaries and boundary tension such as hsown in figure 2 below.

References:

Geim, A K (2012)[Graphene prehistory](#)". Physica Scripta. **146**: 014003.

[Bibcode 2012PhST..146a4003G](#)

[doi 10.1088/0031-8949/2012/T146/014003](#)

Boehm, H.P; Setton, R; Stumpp, E (1986). "Nomenclature and terminology of graphite intercalation compounds". Carbon. **24** (2): 241.

[doi 10.1016/0008-6223\(86\)90126-0](#)