

# Analysis of Graphene why it cannot convert into sheet

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## ABSTRACT

*Graphene is a material which is very strong and good conductor electricity which very use full in this research paper we will try to make a Graphene and test it try to convert it into a sheet as we all know that Graphene cannot convert in the sheet that why we will find that and we also see the molecules structure by using a microscope and see it. Graphene we can get form graphite we can get graphene by many processes but we will use the Electrolysis process that to find the reason why it cannot make in a sheet*

**Keyword:**Analysis, Graphene

## 1. INTRODUCTION

This research paper is basic on material science study on graphene. We will take graphene from graphite by electrolysis. We all know that graphite is a very weak material but according to some scientist if we can convert the graphite into the single-layer it may be strong and open many ways to human society to for more improvement in every field for example space

Graphene is invented by Andre Geim and imagine the concept in place in 1947. Graphene is 2D material which has a honeycomb structure graphene Tensile strength of 13000000000 pascals this material is an allotrope of carbon as we all know that carbon structure is very strong because it uses in many purposes like cutting and hammering, etc in this paper we make some test on it and at the end

## 2 PROCESS OF MAKING

### 2.1 Property of the Graphene

1. Electronic Properties
2. Mechanical,, Strength
3. Optical Properties

Electronic properties: it is a good conductor of electricity because Carbon atoms 6 electrons; 2 in the inner shell and 4 in the outer shell

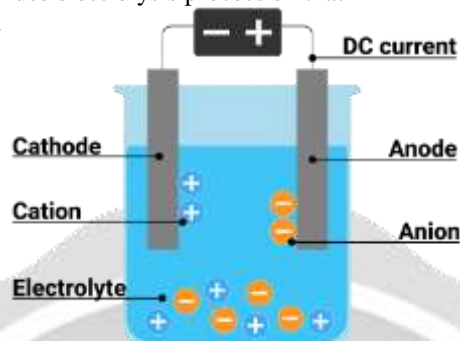
Mechanical strength: it is very strong it tensile strength 13000000000 which very strong in the world

Optical properties:It has the property to absorb a rather large 2.3% of white light **is additionally a singular** and

interesting property, especially considering that **it's just one** atom thick.

## 2.1 PROCESS

To take graphene for graphite we will use electrolysis process on that



The electrolysis process is the decomposition of the rod when DC current passes through the compound of fluid form. In this process we will use graphite rod as cathode and anode and then we pass a DC current to the rod it started decomposition and graphite get convert into powder form and also it created layer which is nearly transparent which is graphene we have to get graphene for this test. The transparent layer is graphene we have to check a conductive by using an ammeter as we all know that we graphene is a good conductor of electricity

When the process is going on we have seen that graphene is working as a capacitor but it is a form of power and transparent layer in this process we increase the DC current step by step to see the process of decomposition

## 2.2 Microscope test

In this microscope test, we have seen the structure of the graphene the structure is like honeycomb and it has a 2d structure that means we have taken the right material or made the right material

While seeing the material on microscope I have seen the black spot but it human skin cell which I have to see and study on it

how we identify the graphene in microscope test we have to see the structure as we all know that graphene has the property to absorb the light this way we have identified the material



Fig microscope test

like this structure, we have seen in the microscope what is the benefit of the structure that takes a 2-day find it we have seen that this structure reduced graphene oxide and make it lightweight and strong which is very good for us in the future but still, I have not to convert it into a sheet.

## 3. WHY IT IS NOT CONVERT INTO SHEET ?

When we make the material graphene it is nonstick with his compound then we apply a pressing block on it but still it not striking then we have found the reason graphite is not very plentiful we all know that graphene is a carbon compound which results to it is nonstick but we have got some idea that if we compound some stick material with it we can find a solution that makes it in sheet if we use a binder which of fevicol and acetone and mix with graphene it mole

### 3.1 Coating :

Graphene coating is possible? yes it possible by using binder because binder used as a mixer to joint the material but if we use the process of coating it physical property get change due to change in physical property lower the strength but can use as electric circuit board it increase the efficiency of current As we all know that graphene is a good conductor due to it, we can make a capacitor, battery by using binder because graphene store current it cannot convert into a sheet due to carbon and it molecule structure if we have formed it we have mixed with it which has the same property as graphene

## 4. EXPERIMENT

In this process, we have applied Electrolysis process to make the material we have to apply 9v current and add the saltwater as a compound in it to happen this process then have observed that it is getting deposited of the rod which is of graphite



**Fig -2**

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as we see in the image it getting deposited and water is starting turn in a yellow color we have an observer that graphite is heavy than graphene there it floating over the water then we again increaser the DC current up to 15 v then the process is starting fast then graphene is floating over the saltwater

After this process e collected the pure form of graphene which is floating over the water and dry it and filter by using filter paper



after filter the graphene we have got a pure form of graphene which is ready to use to study we have a microscope structure to study we have foil paper as we all know it reflects the light and graphene absorb the light because this we have seen the clear honeycomb structure because we are very clear without experiment and about the reading

## 5. END SECTIONS

### 5.1 Appendices

In this experiment, we have used a graphite rod which is used in the electrolysis process and we have also used an ammeter to measure the current and use an AC to DC convert for the electrolysis process in the experiment

To check the structure we have a microscope this test was very imported in to see the structure formate and also to define the metal

### 6 Future scope

If this material develop in sheet format by some process it can take place of all current-conducting material but this material cannot develop in sheet due it physical property to make it happen we have need some binding material it will change the life of humans

## 7. CONCLUSIONS

This material cannot form in the sheet but it can use as lubrication due to it can increase the efficiency of the machine if we have made it in a sheet we need some type of material medium for it to coat it in consulted that due to its structure we cannot form any sheet

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