

# Graphene based nano-coatings for space application 

Tuesday, 10 fuly 2012 17:30 (2 hours)


#### Abstract

Max $\mathbf{3 0 0}$ words) The main objective of this work is to fabricate and characterize graphene, defined as the latest allotrope of carbon. This first truly 2D material has unique and interesting properties, it is substantially stronger than steel and very stretchable. Graphene is a zero-gap semiconductor and has a novel electron structure, with its conduction and valence bands meeting at the Dirac point.

Out of many ways of fabricating graphene, Hummer's method has been chosen in this project because it is a very promising method for mass production of graphene. Graphite will be oxidized to graphene oxide , then graphene oxide will be reduced to graphene by using hydrazine hydrate. The solutions of graphene oxide and reduced graphene oxide will be deposited on silicon subtrates separately. Then the subtrates will be characterized by various characterization techniques.


## Apply to be<br> consider for a student <br> \  award (Yes / No)?

NO

## Main supervisor (name and email)<br>and his / her institution

Prof Malik Maaza, iThemba LABS

Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

YES

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