

Summer Research Program 2011/2012

Project Title: Modelling of graphite flake movement

Supervisor: Associate Professor Tuck Wah Ng

Email: engngtw@gmail.com

Phone: 9905-4647

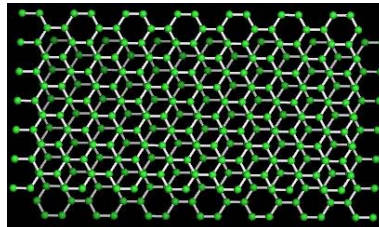
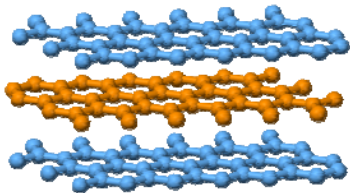
Department: Mechanical & Aerospace Engineering

Objective

To model the movement behaviour of graphite flakes using Matlab.

Description

Carbon has very intriguing properties. It is a highly researched element and the discovery of graphene, a single layer of carbon, resulted in the 2010 Nobel Prize in Physics. Graphite layers are held together by van der Waals forces that are insignificant in the macro-scale but highly significant at the micron and nano scale. An understanding of how these layers move shed light on their mechanical stability.



Graphite layers that move between each other affect their interesting properties

Exposure and expertise developed in the use of a software that allows visualization of atomic configurations. Step-by-step scientific method developed to build on an existing model developed in Matlab to model the movement of graphite flakes.

Some background or interest in mechanical and materials engineering or physics will be beneficial. High proficiency in Matlab will be a strong advantage.