Optical Reflectivity of Graphene

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Graphene transistors on membranes

- Want to construct few-layer graphene Field Effect Transistors (FETs) on transparent membranes
Mechanical Exfoliation of Graphene
(scotch tape method)
Transparency vs Reflectance

Transmission

Reflection
Outline

1. Obtain graphene through mechanical exfoliation
2. Then put on different substrates i.e. SiN$_x$
3. Take images with Q Color 3 camera
4. Determine the thickness of graphene layers using AFM
5. Obtain reflectance ratio by analyzing the collected data
A Few Simple Equations

Reflectance $\%_0 = \frac{R_g}{R_s}$

Contrast $= \frac{R_s - R_g}{R_s}$
Results for Reflectance
Graphene Images on SiN$_x$

• (w PMMA)  

• (w/o PMMA)
Results for Contrast(wPMma)
Results for Contrast (w/o PMMA)
Summary

- We can determine SLG and BLG on silicon dioxide substrates
- We can make SLG/BLG visible on most substrates with spin coating

THANK YOU