Contribution ID: **2** Type: **Poster Presentation**

Defects and Reconstructions in Electron Beam Irradiated Graphene Sheets

Wednesday, 13 July 2011 17:00 (2 hours)

<p>Graphene characterization and device fabrication often require extensive use of the scanning electron microscopy (SEM) and tunneling electron microscopy (TEM). These techniques involve electron beam irradiation that usually causes defects in materials under investigation. The radiation induced defects may lead to significant damage to the material which may alter its properties, normally an undesirable phenomenon. However, recent experiments show that electron radiation can have beneficial effects in materials. Graphenic materials have the ability to reorganize their structures under irradiation like no other materials. This property can find application in radiation hard electronics owing to the technological importance of graphenic materials. Here we report the Raman and scanning tunneling microscopy (STM) results of pristine and heat treated electron -beam irradiated graphene sheets (mono-layer and double layers) to demonstrate graphenic reconstructions. STM creates images of the charge density of electrons at the Fermi level such that all surface atoms can be visible.

Level (Hons, MSc,
   PhD, other)?

PhD

Consider for a student
   award (Yes / No)?

Yes

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

No

Primary author: Mr FABIANE, Mopeli (University of Pretoria PhD Student)

Presenter: Mr FABIANE, Mopeli (University of Pretoria PhD Student)

Session Classification: Poster1

Track Classification: Track A - Condensed Matter Physics and Material Science