

Moments in Materials Presentation:
Ultrafast electronic readout of non-radiative energy transfer to graphene

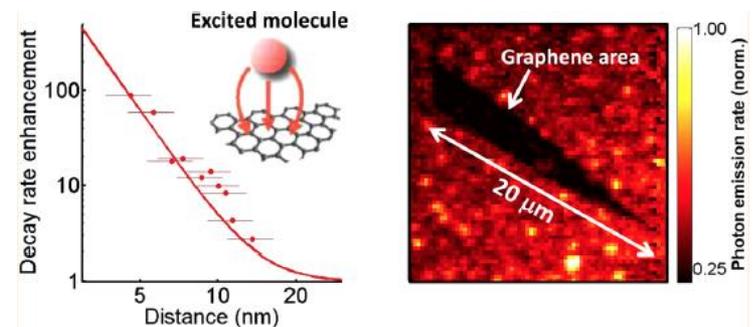
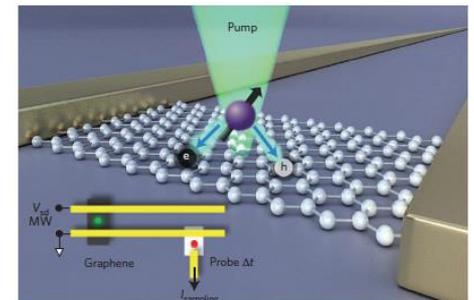


Speaker: Archana Raja (Heinz/Brus lab)

When: Thursday, June 18th 2015, 4:30 p.m.

Where: NWC, 7th floor meeting room, RM 703

Graphene, a two-dimensional material consisting of a single layer of carbon atoms, exhibits exceptional electrical and optical properties, including extraordinarily high electron mobility at room temperature and strong coupling to light over a broad range of wavelengths. Over the past few years, there have been many reports on very efficient non-radiative energy transfer (NRET) from fluorescent emitters, like dye molecules and semiconducting quantum dots, to graphene. However, until recently, there has been no experimental demonstration of harvesting the excited carriers that are transferred to graphene. In this literature review, we will discuss the first report of picosecond-scale electronic readout of carriers that have been transferred to graphene via NRET from diamond nitrogen-vacancy centres. A brief introduction to NRET involving graphene will also be presented.



Gaudreau et al. Nano letters (2013). Brenneis et al. Nature nanotechnology (2014)