Abstract:
Graphene, a single layer of carbon atoms, exhibits novel two-dimensional electronic behavior characterized by massless Dirac electrons. In particular, its physical properties can be strongly modified by electrical gating and layer-layer interactions. Optical spectroscopy provides a powerful tool in study these phenomena in graphene. In this talk, I will show describe gate dependent optical transitions monolayer graphene and a continuously tunable bandgap in bilayer graphene. I will further show that the gapped bilayer graphene corresponds to a massive Dirac electron system that fea-