

# Coherent Control and Nonlinear Optics in Carbon Nanotubes and Graphitic Layers

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I will describe our recent experiments to examine 2nd order and 3rd order nonlinear optical processes in 1-D (Carbon nanotubes) and 2- D (graphene and graphitic films) forms of pure carbon. Results will include the study of how second harmonic response varies for the multilayer carbon systems, as one proceeds from graphene to bulk graphite samples mounted on an oxidized silicon wafer. I will also discuss recent experiments on the use of coherence control techniques to study graphite and both semiconducting and metallic nanotubes