

Abstract for an Invited Paper  
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**IUPAP Young Scientist Award Talk: Bilayer graphene: tunable bandgap and electron-phonon Fano resonances**

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Graphene, a single layer of carbon atoms, exhibits novel two-dimensional electronic behavior. With an extra layer, bilayer graphene gives rise to even richer behavior. In this talk, I will describe how we can use electrical gating to control the electronic bandgap in bilayer graphene and probe the induced bandgap using infrared spectroscopy. I will also discuss a new elementary excitation composed of coupled phonon and exciton unique in this tunable bandgap semiconductor. This hybrid phonon-exciton excitation shows striking Fano interference behavior.