

**CMP Seminar**  
**Michigan State University**

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**Massachusetts Institute of Technology**

*Shedding light on two-dimensional electrons in graphene and  
beyond*

Graphene, a single layer of carbon atoms, has stimulated intense scientific interest due to its distinctive electronic and mechanical properties. Graphene also exhibits strong interactions with light over a broad spectral range. This enables us to examine its electronic and vibrational properties through optical spectroscopy. In addition to gaining understanding of the properties of single-layer graphene, we can also probe the behavior of electrons in few-layer graphene. This reveals the unique electronic and vibrational properties for graphene of each layer thickness and stacking order, as well as their distinct capability to induce an electrically tunable band gap. I will also highlight recent development of 2D materials beyond graphene.

C. H. Lui received his PhD in physics at Columbia University in 2011. He is now a postdoctoral fellow in Prof. Nuh Gedik's group at MIT. His research focuses on the investigation of electronic, optical, and vibrational properties of novel 2D materials, such as graphene and transition metal dichalcogenides, using advanced frequency-resolved and time-resolved optical spectroscopy

**Monday, February 9, 2015**

**4:10 p.m.**

**BPS 1400**

**Prof. Norman Birge - Host**