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## Optical Interactions in Graphene

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Two dimensional materials refer to a class of crystals that are atomically thin. Since the isolation of the first 2D material, graphene, the study of such low dimensional systems has attracted widespread attention with the goals of advancing fundamental knowledge and of facilitating the development of next-generation optoelectronic technologies. Crucial to realizing translations to industrial applications is understanding light-matter interactions in 2D materials. In this work, we report on experimental progress in investigating optical properties and interactions in the 2D material graphene. In particular, we use terahertz time domain spectroscopy to study the carrier dynamics in graphene. We discuss light-matter interactions in graphene samples that are supported by substrates with distinct optical properties.

**Primary author:** SCARFE, Samantha (University of Ottawa)

**Co-authors:** HALPIN, Alexei; BODDISON-CHOUINARD, Justin (University of Ottawa)

**Presenter:** SCARFE, Samantha (University of Ottawa)

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