**Terahertz Spectroscopy of 2D Materials**

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Two-dimensional, or 2D, materials are attracting considerable attention as a testbed for new physics and as candidates for applications in flexible nanoscale high-speed optoelectronics, solar energy conversion, and chemical sensing. Most unique properties of 2D materials stem from their highly anisotropic optical and electronic properties. Terahertz (THz) spectroscopy provides access to those properties with ultra-high time resolution and without the complications of electrical contacts. I will describe how we apply time-resolved THz spectroscopy to probe ultrafast dynamics of charge carriers in two 2D layered materials with vastly different properties: semiconducting GeS and GeSe and metallic MXene Ti3C2Tx. In group-IV monochalcogenides GeS and GeSe, THz emission spectroscopy provides an experimental demonstration of the surface shift current and puts this layered group-IV monochalcogenides forward as a candidate for next generation shift current photovoltaics, nonlinear photonic devices and THz sources. In the metallic 2D MXene Ti3C2Tx Mxenes, ee demonstrate that Ti3C2Tx conductivity and THz transmission can be manipulated by photoexcitation, which causes transient suppression of the conductivity that lasts hundreds of picoseconds. This observation suggests that MXenes may have potential applications in THz modulation devices and variable electromagnetic shielding.