

Abstract Submitted
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Measurement of THz radiation from DC heated graphene JIAYUE TONG, Department of Physics, University of Massachusetts Amherst, MARTIN MUTHEE, Department of Electrical and Computer Engineering, University of Massachusetts Amherst, JUN YAN, Department of Physics, University of Massachusetts Amherst, K. SIGFRID YNGVESSON, Department of Electrical and Computer Engineering, University of Massachusetts Amherst — High mobility, tunable broadband optical response, and robust room temperature plasmon excitations have made graphene a promising candidate for THz applications. In this talk, I will discuss our studies of an antenna-coupled graphene THz source on a SiO₂/Si substrate, coupled through a silicon lens. Our experiments show that graphene samples coupled to a resonant double patch antenna emit strong radiation at about 2 - 2.5 THz. We then characterize the gate dependent THz radiation from heated graphene by simulating the antenna performance and comparing simulation results with experimental measurements. Our work paves the way for making practically useful graphene-based THz sources.

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