

Abstract Submitted  
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**Photoluminescence in highly doped graphene** BAISONG GENG, CHI-FAN CHEN, LIANG ZHENG TAN, Department of Physics, University of California at Berkeley, Berkeley, CA 94720, USA, BRYAN W. BOUDOURIS, Department of Chemistry, University of California at Berkeley, Berkeley, CA 94720, USA, JASON HORNG, CAGLAR GIRIT, ALEX ZETTL, MICHAEL F. CROMMIE, Department of Physics, University of California at Berkeley, Berkeley, CA 94720, USA, RACHEL SEGALMAN, Department of Chemistry, University of California at Berkeley, Berkeley, CA 94720, USA, STEVE G. LOUIE, FENG WANG, Department of Physics, University of California at Berkeley, Berkeley, CA 94720, USA — Pristine graphene is a zero-bandgap semiconductor. Usually no photoluminescence can be observed from such zero-bandgap material upon laser excitation. In highly doped graphene, however, we observed a strong broadband photoluminescence. We will discuss the mechanism of this photoluminescence in graphene, which arises from new recombination pathways enabled by strong electrical doping. We will also describe the polarization dependence of this newly observed photoluminescence.

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