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Photo doping effect in graphene/BN heterostructure LONG JU, JAIRO VELASCO JR., EDWIN HWANG, JONGHWAN KIM, FENG WANG, UC Berkeley — Boron nitride has been demonstrated as an ideal substrate to achieve high mobility in graphene. At the same time We observed strong change of graphene transport properties by shining light on graphene/BN heterostructure. This is attributed to photo doping effect induced by impurity excitation in BN. Optical spectroscopy based on this photo-doping effects enables us to probe impurities in crystalline BN. Such information will be important for potential applications based on graphene/BN heterostructures. The potential of applying similar technique to probe defects in other insulators and semiconductors will also be discussed.

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