
Unleashing the Quadratic Non-Linear Optical Responses of Graphene by Confining White Graphene Sections in Its Framework

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Résumé

A proof-of-concept about a novel way of designing two dimensional based systems of exceptionally large first order non-linear optical (NLO) activity is presented. The proposed route has been inspired by the recent advances in synthesis of a novel type of graphene hybrid in which finite sections of "white graphene" (c.c hexagonal boron nitride, h-BN) are confined in larger sections of pure graphene. The so called graphene/h-BN hybrids have been grown already as a part of numerous attempts in opening the zero band gap of graphene at the Fermi level by creating asymmetric electron and hole conduction with simultaneous negative-type (with Nitrogen) and positive-type (with Boron) chemical doping.

Mots-Clés: graphene, NLO, Hyperpolarizability, BN/graphene

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