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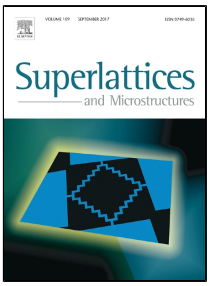

One dimensional graphene based photonic crystals: Graphene stacks with sequentially- Modulated doping for photonic band gap tailoring

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ONE DIMENSIONAL GRAPHENE BASED PHOTONIC CRYSTALS: GRAPHENE STACKS WITH SEQUENTIALLY- MODULATED DOPING FOR PHOTONIC BAND GAP TAILORING, by Fuentecilla-Carcamo et al.

Highlights:

- The photonic crystal tuning is desirable to expand applications in optoelectronic technology. With graphene as constituent, a photonic crystal is tunable by gating; no changes of the spatial distribution of the graphene layers are needed.

- The sequentially modulated doping enriches the photonic response of a graphene stack. This modulation can be periodic, quasi-periodic or patterned by a particular envelope function.

- There exists a structural (Bragg) photonic gap. The graphene doping gives rise to additional band gaps. In fact, the formation of photonic mini-bands is reported in the paper.

- Although a carbon atom thickness of graphene is used to estimate the stack plasma frequency, the photonic band calculations were made considering negligible (zero) graphene thickness.