

Pantip Fanbanrai 2015: Effects of Strain on the Schwinger Pair Creation in Graphene.

Master of Science (Physics), Major Field: Physics, Department of Physics. Thesis

Advisor: Assistant Professor Sooty Boonchui, Ph.D. 54 pages.

We investigate the generalized two-dimensional Weyl Hamiltonian, which describes mechanically deformed graphene under pressure. The strain can be suitable engineering of the amplitude associated with the Schwinger pair creation. The influences of the distorted lattices, such as tensile isotropic strain, shear strain, uniaxial armchair strain, and zigzag strain, on the regime of photon emission distribution have been analyzed. We obtain that magnitude of emission distribution decreases or increases, due to characteristic strains. They can be suitable engineering by using the mechanical strains.

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