

## عنوان مقاله:

Tunable Terahertz Absorber Based on Hexagonal Graphene Disk Array

## محل انتشار:

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## خلاصه مقاله:

**Abstract:** In this paper, a tunable absorber structure based on a graphene hexagonal array in the terahertz range is investigated. The graphene hexagonal absorber is simulated by the finite element method. The effects of the geometry, graphene Fermi energy level and incident light angle, and light polarization on the absorptance of the structure are investigated. The results show that the absorptance spectrum of the proposed absorber is tuned from ۶.۱ THz to ۹.۱ THz when the Fermi energy increases from ۰.۴eV to ۰.۹eV. The absorptance peak shifts to lower and higher frequencies with increasing hexagonal side length and Fermi energy level, respectively. The absorption of the structure is over ۹۰% in the incident light angle range from ۰ to  $۸۰^{\circ}$  for the TE polarization and in the range of ۰- $۴۰^{\circ}$  for the TM polarization. Also, results indicate that the absorption peaks shift to the lower energies with increasing the dielectric constant of the dielectric layer.

## کلمات کلیدی:

Graphene, Absorptance, Terahertz, Metamaterial, Absorber

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1909015>

