

Abstract Submitted
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From rectangle-shaped to square-shaped antennas based on graphene: T-shaped, Cross-shaped and Rectangle-shaped Structure Transitions VICTOR A. RODRIGUEZ-TORO, LUCAS H. GABRIELLI, HUGO FRAGNITO, HUGO E. HERNANDEZ-FIGUEROA, Universidade Estadual de Campinas (UNICAMP) — The absorbing cross section (ACS) for graphene-based terahertz antennas is calculated for different shapes. All structures are wide enough so that edge effects can be neglected. A general Kubo form considering only intraband transitions approximates the material conductivity for graphene, while its relative permittivity and permeability are kept at 1. Being valid in a frequency range between 0.5THz and 4THz, we use this model to find the frequency at which the maximum ACS is reached for each of the analyzed antenna shapes. In this exploration, we numerically study the performance of arbitrary rectangular, T- and cross-shaped antennas. These results can also be useful for the design of complex graphene-based metamaterials operating in the terahertz range.

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