Electromagnetic waves absorption by graphene - magnetic semiconductor - graphene nano-structure in external magnetic field: Voight geometry

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Nowadays graphene attract researchers' attention with their special properties including electrodynamical ones. Despite the large number of studies, the authors are usually limited by investigation of a non-magnetic dielectric medium, where graphene is placed. It is very interesting to study the electrodynamics of graphene-based structures with more complex materials. A magnetic semiconductor could be an example of such material. Plasma waves can excite in the semiconductor structures. In its turn, the magnetic semiconductors may have a large magnetoresistance, magnetooptical properties, etc. Thus, the electrodynamics of graphene-magnetic semiconductorbased structures can be quite interesting.

This paper is devoted to investigation of the absorption of electromagnetic waves by graphene - magnetic semiconductor - graphene nano-structure placed in an external magnetic field, directed parallel to the structure surface (Voigt geometry). Investigation shows that absorptance of electromagnetic waves by such a structure can be efficiently controlled by both value and direction of an external magnetic field.