World Academy of Science, Engineering and Technology
International Journal of Physical and Mathematical Sciences
Vol:10, No:06, 2016

Absorption of Ultrashort Electromagnetic Pulses on Gold Nanospheres in Various Dielectric Media

Authors : Sergey Svita, Valeriy Astapenko

Abstract : The study is devoted to theoretical analysis of ultrashort electromagnetic pulses (USP) absorption on gold nanospheres. Dependencies of USP energy absorption on nanospheres placed in various matrix are compared. The results of calculation of absorbed energy on gold nanospheres as a function of ultrashort electromagnetic pulse carrier frequency and number of pulse cycles of carrier frequency show strong non-linear dependence of absorbed energy on number of cycles of carrier frequency, but for relatively large number of cycles on USP carrier frequency it goes to linear dependence.

Keywords : ultrashort electromagnetic pulses, absorption, nanospheres, theoretical research
Conference Title : ICMTP 2016 : International Conference on Mathematical and Theoretical Physics
Conference Location : New York, United States
Conference Dates : June 06-07, 2016