A Two-Temperature Photothermal Interaction in a Semiconducting Material

Buy Article:

$105.00 **+ tax**

(Refund Policy)

ADD TO CART

BUY NOW

5

• • •
Abstract　　🔖 References　　❞ Citations　　☰ Supplementary Data　　◔ Article Media　　📈 Metrics

➕
Suggestions

This work is concerned with the study of the carrier density, thermodynamic temperature, conductive temperature, displacement and stress in a semi-infinite semiconducting medium during the photothermal process. The medium is considered to be a semiconductor medium with homogeneous, isotropic. In addition, the thermal and elastic properties have been considered without neglecting the coupling between the thermoelastic and the plasma waves. Laplace transform techniques are used to obtain the exact solution of the problem in the transformed domain by the eigenvalue approach and the inversion of Laplace transforms have been carried numerically. A semiconducting material like as silicon was considered. The results were graphically represented to show the effect of the two-temperature parameter.

Keywords: CONDUCTIVE AND THERMODYNAMIC TEMPERATURES; EIGENVALUE APPROACH; LAPLACE TRANSFORMATION; PHOTOTHERMAL THEORY

Document Type: Research Article

Publication date: September 1, 2017

　More about this publication?