23
标题: Ultrafast Carrier Dynamics in Graphene under a High Electric Field
作者: Tani, S (Tani, Shuntaro); Blanchard, F (Blanchard, Francois); Tanaka, K (Tanaka, Koichiro)
来源出版物: PHYSICAL REVIEW LETTERS 卷: 109 期: 16 文献号: 166603 DOI: 10.1103/PhysRevLett.109.166603 出版年: OCT 17 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 33
摘要: We investigated ultrafast carrier dynamics in graphene with near-infrared transient absorption measurement after intense half-cycle terahertz pulse excitation. The terahertz electric field efficiently drives the carriers, inducing large transparency in the near-infrared region. Theoretical calculations using the Boltzmann transport equation quantitatively reproduce the experimental findings. This good agreement suggests that the intense terahertz field should promote a remarkable impact ionization process and increase the carrier density.
入藏号: WOS:000309905400012
语种: English
文献类型: Article
KeyWords Plus: MULTIPLICATION; RECOMBINATION; SIO2
地址: [Tani, Shuntaro; Tanaka, Koichiro] Kyoto Univ, Dept Phys, Sakyo Ku, Kyoto 6068502, Japan
[Tani, Shuntaro; Blanchard, Francois; Tanaka, Koichiro] Japan Sci & Technol Agcy, CREST, Kawaguchi, Saitama 3320012, Japan
[Blanchard, Francois; Tanaka, Koichiro] Kyoto Univ, Inst Integrated Cell Mat Sci WPI iCeMS, Sakyo Ku, Kyoto 6068501, Japan
通讯作者地址: Tani, S (通讯作者),Kyoto Univ, Dept Phys, Sakyo Ku, Kyoto 6068502, Japan.
电子邮件地址: tani@scphys.kyoto-u.ac.jp; kochan@scphys.kyoto-u.ac.jp
出版商: AMER PHYSICAL SOC
出版商地址: ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA
Web of Science 类别: Physics, Multidisciplinary
研究方向: Physics
IDS 号: 021SJ
ISSN: 0031-9007
29 字符的来源出版物名称缩写: PHYS REV LETT
ISO 来源出版物缩写: Phys. Rev. Lett.
来源出版物页码计数: 5