32
标题: Tunable photogalvanic effect on topological insulator surfaces via proximity interactions
作者: Semenov, YG (Semenov, Yuriy G.); Li, XD (Li, Xiaodong); Kim, KW (Kim, Ki Wook)
来源出版物: PHYSICAL REVIEW B 卷: 86 期: 20 文献号: 201401 DOI: 10.1103/PhysRevB.86.201401 出版年: NOV 1 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: 26
摘要: An unusual photogalvanic effect is predicted on the topological insulator surface when its semimetallic electronic spectrum is modified by an adjacent ferromagnet. The effect is correlated with light absorption in a wide frequency range (from a few to hundreds of meV) and produces a pronounced response that is not only resonant to the photon energy but also tunable by an external electrical bias. The exceptionally strong peak photocurrent of the order of mu A/cm may be achieved at elevated temperatures with the illumination power of 1 W/cm(2) in the THz range on Bi2Se3. These advantages could enable room-temperature detection of far-infrared radiation.
入藏号: WOS:000310500100001
语种: English
文献类型: Article
KeyWords Plus: SEMICONDUCTORS
地址: [Semenov, Yuriy G.; Li, Xiaodong; Kim, Ki Wook] N Carolina State Univ, Dept Elect & Comp Engn, Raleigh, NC 27695 USA
通讯作者地址: Semenov, YG (通讯作者),N Carolina State Univ, Dept Elect & Comp Engn, Raleigh, NC 27695 USA.
电子邮件地址: kwk@ncsu.edu
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, Condensed Matter
研究方向: Physics
IDS 号: 029MO
ISSN: 1098-0121
29 字符的来源出版物名称缩写: PHYS REV B
ISO 来源出版物缩写: Phys. Rev. B
来源出版物页码计数: 5