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标题: Interferometer measurements of terahertz waves from Bi2Sr2CaCu2O8+d mesas
作者: Turkoglu, F (Turkoglu, F.); Koseoglu, H (Koseoglu, H.); Demirhan, Y (Demirhan, Y.); Ozyuzer, L (Ozyuzer, L.); Preu, S (Preu, S.); Malzer, S (Malzer, S.); Simsek, Y (Simsek, Y.); Muller, P (Mueller, P.); Yamamoto, T (Yamamoto, T.); Kadowaki, K (Kadowaki, K.)
来源出版物: SUPERCONDUCTOR SCIENCE & TECHNOLOGY 卷: 25 期: 12 文献号: 125004 DOI: 10.1088/0953-2048/25/12/125004 出版年: DEC 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: 31
摘要: We fabricated rectangular mesa structures of superconducting Bi2Sr2CaCu2O8+d (Bi2212) using e-beam lithography and Ar ion beam etching techniques for terahertz (THz) emission. c-axis resistance versus temperature (R-T), current-voltage (I-V) characteristics and bolometric THz power measurements were performed to characterize Bi2212 mesas. The emission frequency of mesas was determined using a Michelson interferometer setup which also demonstrates polarized emission. Interference patterns of THz radiation from Bi2212 mesas were detected by various detectors such as a liquid helium cooled silicon composite bolometer, a Golay cell and a pyroelectric detector. An emitted power as high as 0.06 mW was detected from Bi2212 mesas. For the first time, most of the pumped power was extracted as THz emission from a Bi2212 mesa. The radiation at 0.54 THz was detected using the Michelson interferometric setup.
入藏号: WOS:000311418100014
语种: English
文献类型: Article
KeyWords Plus: JOSEPHSON-JUNCTIONS; THZ RADIATION; SPECTROSCOPY; EMISSION
地址: [Turkoglu, F.; Koseoglu, H.; Demirhan, Y.; Ozyuzer, L.] Izmir Inst Technol, Dept Phys, TR-35430 Urla Izmir, Turkey
[Preu, S.; Malzer, S.] Univ Erlangen Nurnberg, Dept Phys, D-91058 Erlangen, Germany
[Yamamoto, T.; Kadowaki, K.] Univ Tsukuba, Inst Mat Sci, Tsukuba, Ibaraki, Japan
通讯作者地址: Turkoglu, F (通讯作者),Izmir Inst Technol, Dept Phys, TR-35430 Urla Izmir, Turkey.
电子邮件地址: ozyuzer@iyte.edu.tr
出版商: IOP PUBLISHING LTD
出版商地址: TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND
Web of Science 类别: Physics, Applied; Physics, Condensed Matter
研究方向: Physics
IDS 号: 041RE
ISSN: 0953-2048
29 字符的来源出版物名称缩写: SUPERCOND SCI TECH
ISO 来源出版物缩写: Supercond. Sci. Technol.
来源出版物页码计数: 5