

Abstract Submitted
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Lateral photovoltaic effect in Bi_2Te_3 JAMES P. HINTON, JAKE D. KORALEK, JOSEPH ORENSTEIN, SHANE A. CYBART, UC Berkeley, LBNL, JAMES ANALYTIS, IAN FISHER, Geballe Laboratory for Advanced Materials and Department of Applied Physics, Stanford University — We report the observation of a lateral photovoltaic effect (LPVE) in strongly metallic single crystals of Bi_2Te_3 . In our measurements a focused pulsed laser at 800nm wavelength generates a photovoltage in the absence of applied bias. The sign of the LPVE is independent of the polarization state of the light, as well as the position of the beam spot. The photovoltage is essentially zero at room temperature and has a sharp onset at 190 K. This onset T is closely correlated with a sharp peak in resistivity, of the type that has been associated in the literature with impurity band conduction.

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