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Angle-resolved photoemission spectroscopy study of n-type Bi_2Te_3 HAN-JIN NOH, Center for Strongly Correlated Materials Research, Seoul National University, H. KOH, CSCMR, SNU, S.-J. OH, School of Physics and CSCMR, SNU, J.-H. PARK, Department of Physics, Pohang University of Science and Technology, T. VALLA, P. JOHNSON, Physics Department, Brookhaven National Laboratory — We have performed angle-resolved photoemission spectroscopy (ARPES) studies of n-type Bi_2Te_3, which is a classical thermoelectric compound that shows high figure of merit (ZT) at room temperature. Band dispersions for major high symmetry directions were obtained and all the conduction bands were determined from the ARPES data. An ellipsoidal electron pocket was identified and the result is compared with that of de Haas-van Alphen effect. We also estimate the ZT value from ARPES data and discuss the origin of the high ZT value in connection with electronic structure.

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