

Abstract Submitted
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Electrical transport properties of topological insulator Bi₂Te₃ nanowires contacted with superconducting electrodes¹ MINGLIANG TIAN, JIAN WANG, MEENAKSHI SINGH, MOSES CHAN, PENN STATE UNIVERSITY TEAM — Single-crystal Bi₂Te₃ nanowires were fabricated by template-assisted electrochemical deposition. The electrical transport properties of the nanowires in the temperature range 1.8-300 K were investigated by connecting non-superconducting or superconducting electrodes. When the wire was connected to focused-ions beam deposited W-electrodes, a series of exotic quasi-periodic oscillations were found and the amplitude of the oscillations was unusually enhanced near 3.5 K below the T_c, 4.5 K, of W-electrodes. When the wire was connected to nonsuperconducting Pt electrodes, the wire showed positive magnetoresistance accompanied with random fluctuations.

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