

Abstract Submitted  
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**Transport in single InAs Nanowire and Bi<sub>2</sub>Se<sub>3</sub> Flake Photosensitive Devices**<sup>1</sup> SEYYEDESADAF POURNIA, GABRIELLE KOKNAT, GIRIRAJ JNAWALI, HOWARD JACKSON, LEIGH SMITH, Department of Physics, University of Cincinnati, Cincinnati, OH, HOE TAN, CHENNUPATI JAGADISH, Department of Electronic and Materials Engineering, Australian National University, Canberra, Australia, STEPHEN WILSON, Materials Department, University of California, Santa Barbara, CA — We report on preliminary measurements of devices fabricated from single InAs nanowires and exfoliated Bi<sub>2</sub>Se<sub>3</sub> flakes. The Wurtzite InAs nanowires were mechanically harvested from the MOCVD-grown substrates and dispersed onto a Si/SiO<sub>2</sub> substrate. The Bi<sub>2</sub>Se<sub>3</sub> flakes were exfoliated from Bi<sub>2</sub>Se<sub>3</sub> single crystals which were grown in a Bridgeman furnace. The 60 to 100 nm thick flakes were dispersed onto a Si/SiO<sub>2</sub> substrate. Using photolithography two electrical contacts were defined on either end of the nanowires or flakes by deposition of 20 nm Titanium followed by 300 nm Aluminum. Using a probe station and current amplifier, current-voltage measurements were obtained both in the dark and under white light illumination. Most devices showed I-V behavior consistent with back-to-back Schottky contacts, with some evident photosensitivity under illumination.

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