

Abstract Submitted
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Superconducting wires of amorphous indium oxide ANDREAS JOHANSSON, G. SAMBANDAMURTHY¹, NETA-LEE JACOBSON, IDO DOLEV, DAN SHAHAR, Department of Condensed Matter Physics, The Weizmann Institute of Science, Rehovot 76100, Israel, RESHEF TENNE, Department of Materials and Interfaces, The Weizmann Institute of Science, Rehovot 76100, Israel — We present results of electronic transport measurements on disordered superconducting wires in the 1D limit. The wires are made of amorphous indium oxide (a:InO). They are templated on WS₂ nanotubes with a diameter between 20 and 120 nm, and stretching across an approximately 1 μ m wide gap etched on the surface of a semiconductor. In earlier studies, a:InO was used extensively for studying the influence of disorder on superconductivity in 2D, including the interplay between disorder, superconductivity, and magnetic field. We have extended that work towards the 1D limit and see signatures of a 2D to 1D crossover in our measurements. The crossover is seen in resistance versus temperature data, as well as in magnetoresistance data.

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