Title:	Point Contact Andreev Reflection Spectroscopy on Metal Dichalcogenides
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Keywords:	Metal Dichalcogenides Spectroscopy Electronics and Software Superconductivity
Issue Date:	May-2020
Publisher:	IISER Mohali
Abstract:	Point Contact Spectroscopy is technique to measure electronic properties at the Fermi surface of materials by contracting a small, narrow point contact between different kinds of materials. Narrow constrictions are fabricated between metals and superconductors to extract energy, momentum and spin resolved spectroscopic information. IV characteristics of this point contact shows a deviation from linearity in ohm's law. A dual Radio Frequency Scanning Tunnelling Microscope and Point Contact Spectroscopy probe has been developed and used in a Helium-3 cryostat to perform transport measurements at Ultra Low temperatures. Scanning Tunnelling Microscope is a very sophisticated instrument used to obtain sub-atomic length scale images. Using the property of quantum tunnelling and the exponential relation of tunnelling current with the barrier length gives a high resolution image. During the course of this thesis, I have developed a Low Cost STM. The design was modified to minimise the cost of the materials of the hardware parts. Electronic circuit configuration was substituted by cheaper, low noise electronic parts to acquire data to develop images in room temperature.
URI:	http://hdl.handle.net/123456789/1442
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