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Title:	A modular point contact spectroscopy probe for sub-Kelvin applications
Authors:	Das, Shekhar (/jspui/browse?type=author&value=Das%2C+Shekhar) Sheet, G. (/jspui/browse?type=author&value=Sheet%2C+G.)
Keywords:	Spectroscopy Mechanism Spectroscopy
Issue Date:	2019
Publisher:	AIP Publishing
Citation:	Review of Scientific Instruments, 90(10).
Abstract:	We present the construction and performance of a plug-n-play type point contact spectroscopy probe equipped with a piezodriven coarse approach mechanism for sub-Kelvin applications. A modular assembly has been built, which can be placed in or taken out from a sub-Kelvin socket mounted inside a He3 cryostat (with a 7 T magnet) using an external manipulator. A simple transfer process using a removable vertical manipulator combined with a load-lock chamber makes the exchange of the sample/tip rig very easy without breaking the vacuum insulation of the sample chamber. We have successfully performed point-contact spectroscopic studies on certain elemental superconductors with low T <sub>c</sub> . We have also used the probe to perform spectroscopic measurements on another low temperature superconductor PdTe <sub>2</sub> , which is a Dirac semimetal in the normal state. We present such data to demonstrate the functionality of the probe. The probe can also be made adaptable for other transport measurements such as Hall effect, four probe resistivity, scanning tunneling spectroscopy, etc.
URI:	<a href="https://aip.scitation.org/doi/10.1063/1.5119372">https://aip.scitation.org/doi/10.1063/1.5119372</a> ( <a href="https://aip.scitation.org/doi/10.1063/1.5119372">https://aip.scitation.org/doi/10.1063/1.5119372</a> ) <a href="http://hdl.handle.net/123456789/1793">http://hdl.handle.net/123456789/1793</a> ( <a href="http://hdl.handle.net/123456789/1793">http://hdl.handle.net/123456789/1793</a> )
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