

Abstract Submitted
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Low Temperature Scanning Tunneling Microscope for Spin Polarization Measurements¹ SEONG HEON KIM, RYAN JAEHNE, LEUJEN CHEN, ALEX DE LOZANNE, Department of Physics, University of Texas at Austin — We describe a new design for a 4K scanning tunneling microscope (STM) with an 8 tesla superconducting magnet to be used for spin polarized measurements. The novel aspects include a compact design for the chamber and the STM, the use of a secondary STM for in-situ tip characterization, and new ideas for vibration isolation. We developed a new STM head unit with 1 inch diameter and 3.2 inch length. This microscope is small enough to be installed within the small space available in the 2 inch diameter bore of our superconducting magnet. To achieve this small size, we modified the typical Pan-type z-approach walker. We also developed new simple and inexpensive electronics to control any stick-slip walker.

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