

Abstract Submitted
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Compact probe design for Scanning Hall Probe Microscopy¹ NELIZA LEON-BRITO, SEONGSOO KWEON², ALEX DE LOZANNE, Texas Materials Institute, The University of Texas at Austin — In the search for new materials with desirable magnetic properties for applications such as spintronics the study of magnetic properties at the micro and nanoscale is necessary. Magnetic Force Microscopy (MFM) has been the technique of choice for these types of studies, but its invasive nature makes it unsuitable for low coercivity materials like diluted magnetic semiconductors. Scanning Hall Probe Microscopy (SHPM) is an alternative technique which provides a magnetically non-invasive, calibrated measurement of the stray fields above the sample with good resolution ($\sim 1\mu\text{m}$). We have built a compact cryogenic variable-temperature (4 - 300K) SHPM with unique features such as an inverted tapered seal that also performs as a heat sink for the microscope body and a new coarse approach mechanism. Details of this design will be presented in this talk.

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