

Abstract Submitted
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Construction of a ^3He Magnetic Force Microscope with a Vector Magnet JINHO YANG, YUNWON KIM, ILKYU YANG, JUYOUNG JEONG, DONGWOO SHIN, DIRK WULFERDING, YOONHEE JEONG, HANWOONG YEOM, JEEHOON KIM, CALDES, IBS, POSTECH, Pohang, Korea — We have built a ^3He magnetic force microscope (MFM) with a base temperature of 300 mK, operating in a vector magnet with the field of Z=9 T, X=2 T, Y=2 T for each axis. We employed a fiber interferometer system for detection of a cantilever motion that includes two auttocube types of walkers for alignment between the fiber end and a cantilever tip. We apply our novel microscope to investigate unconventional magnetic materials and superconductors such as centrosymmetric skyrmion crystals and Heavy Fermion Superconductors. We will show some preliminary MFM images in these systems

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