

Abstract Submitted
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Improvement of the Millimeter to Nanometer Scale Motion of a Scanning Tunneling Microscope SHAO JIE ZANG, CRAIG HOWALD, Marietta College — This poster examines the effect of design alterations on the quality of coarse approach in a scanning tunneling microscope (STM) which uses an external nanopositioner to push (and pull) a tip holder inside a sleeve. To facilitate this a modified Fabry-Perot interferometer has been designed that enables observation of nanometer resolved motion of a scanning tunneling microscope tip with simple setup and alignment. Using this interferometer, an investigation of the effect of several feasible design changes to the tip shape and sleeve material on the coarse approach in this STM was performed. These results have allowed the construction of an STM that performs high quality repeatable coarse approach using a low mass stainless steel tip holder and a glass sleeve.

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