

Abstract Submitted
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Adaptation of a commercial UHV SPM system for use with a quartz tuning fork sensor¹ JACOB TOSADO, WILLIAM G. CULLEN, ELLEN D. WILLIAMS, MRSEC and CNAM — Dynamic force microscopy using a quartz tuning fork sensor offers many advantages over cantilever AFM, particularly for use in a UHV environment. One key advantage is the stability against jump to contact allowed by the high stiffness ($k \sim 1800$ N/m) of the tuning fork. This allows complementary NC-AFM and STM, without a compromise in STM performance due to cantilever deflection. Here, we present the adaptation of a JEOL JSPM-4500A UHV STM/AFM system to accommodate a quartz tuning fork. The modification is done without any alteration of the existing system capability for cantilever AFM using optical detection, and allows the same in-situ tip transfer capability of the original system.

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