

Abstract Submitted
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Specification, design and commissioning of an ultra-low-vibration facility for Scanning probe microscopy experiments BENJAMIN MACLEOD, YAN PENNEC, VINCENT WONG, GRAEME ADAMSON, The University of British Columbia — Scanning probe microscopes are perhaps best known for being able to image individual atoms in real space. A practical complication of this extreme spatial sensitivity is that these instruments are also extremely sensitive to mechanical vibrations; to approach ultimate levels of performance, these microscopes must therefore be operated in an environment with an extremely low level of mechanical vibrations. In this work, the specification, design and commissioning of a new ultra-low-vibration facility recently completed at the University of British Columbia is presented. Based on the pneumatically-suspended inertial slab concept used at NIST's Gaithersburg facility¹ this system will be used as a highly stable platform for a 50mK Scanning Tunneling Microscope system.

¹Hal Amick, Bea Sennewald, Norman C. Pardue, Clayton Teague, and Brian Scafe, Noise Control Engineering Journal 46, 39-47 (1998).

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