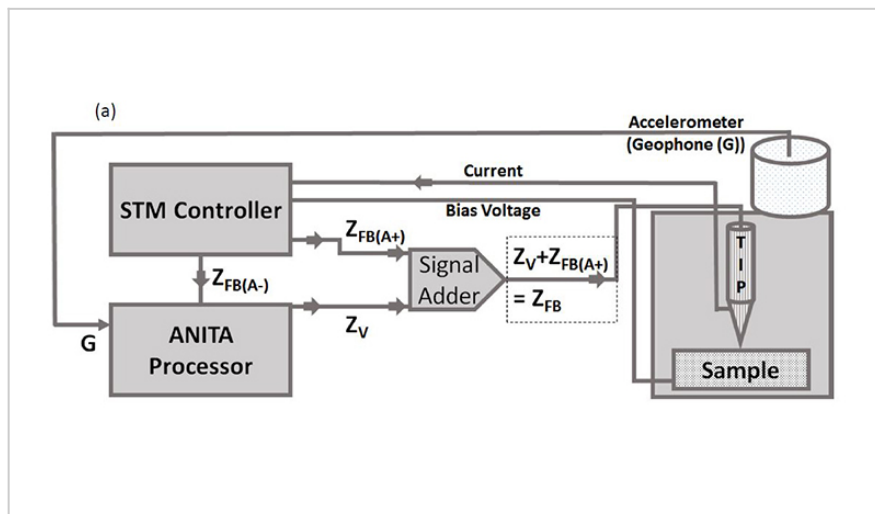


# Active Noise Isolation for Tunneling Applications (ANITA)

ID# 2017-4632



Schematic of ANITA

## Technology Summary

The present invention, ANITA, includes a method of removing vibration driven noise from a signal in scanning probe microscopes (SPMs). ANITA allows for a SPM itself to remove vibration driven noise by using the signal from an accelerometer to measure the vibration driven noise and software to correlate the accelerometer's signal with noise from the SPM. This technology applies to all types of SPMs, requires minimal new technology, and is easily integrated into both new and existing systems. Furthermore, ANITA requires no major instrumental modifications, and is suitable for the SPMs working in a noisier environment, e.g. in the presence of active refrigeration systems.

## Application & Market Utility

The usefulness of SPMs centers on its ability to extract electronic information from materials with sub-angstrom level precision. Although a variety of other vibration cancellation systems have been developed for SPMs, none have been widely adopted due to their complexity, expense, and narrow range of use. The present invention addresses these needs while successfully removing the effect of vibration on the performance of SPMs.

## Next Steps

The research team is seeking licensing and research collaboration opportunities.

TECHNOLOGY READINESS LEVEL

1-3

### Seeking

Licensing | Research

### Keywords

- noise isolation
- active noise cancellation
- vibration cancellation
- scanning tunneling microscopy

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