

# PSi's Sub-nano Metrology System - PSi1™



## Description

**PSi1™** is a U.S. Patented disruptive metrology system that offers a comprehensive solution for assembly and characterization of a wide variety of atomic scale materials and devices in a range of environmental conditions. The unique approach and configuration of this ultra precise research tool provides excellent stability and extremely high resolution. This technology offers the potential for investigation and development of the next generation of sub-nano materials and devices as small as a single atom ( $10^{-10}$ m).

## Features

**PSi1™** Conductance Module (commercial version available for demonstrations):

- Apply displacement with picometer ( $10^{-12}$ m) resolution to control sample size.
- Measure the sample conductance to determine electrical properties of atomic scale sample.

**PSi2™** Force Module (commercial version with targeted completion (2Q, 2016).

In addition to **PSi1™** features, **PSi2™** will:

- Measure the force to extract mechanical properties.

## Future Modules

- **PSi3™** Cryogenic
- **PSi4™** Ultra High Vacuum (UHV)
- **PSi5™** Biological (operation in liquid)

## PSi1™ Components

- Patented Probe Assembly (1)
- Patented Tip Alignment Assembly (2)
- Isolation Chamber (3)
- Advanced Data Acquisition Hardware (4)
- Custom Control Software (5)

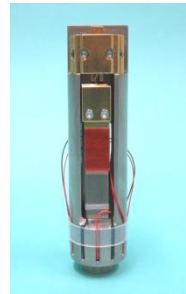
## Applications

- Atomic Point Contacts
- Conductance quantization
- Conductance fluctuations, quantum noise, flicker noise
- Molecular transport
- Bonding and bond strength
- Molecular conformation
- Protein mechanics (folding/unfolding)
- Spintronics (single-atom & molecular)

## Contact

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