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Technologies

# Mode-synthesizing atomic force microscopy (MSAFM) and mode-synthesizing sensing (MSS)

## Applications:

- A new configuration for atomic force microscopy
- A new configuration for MEMS-based sensors

## Advantages:

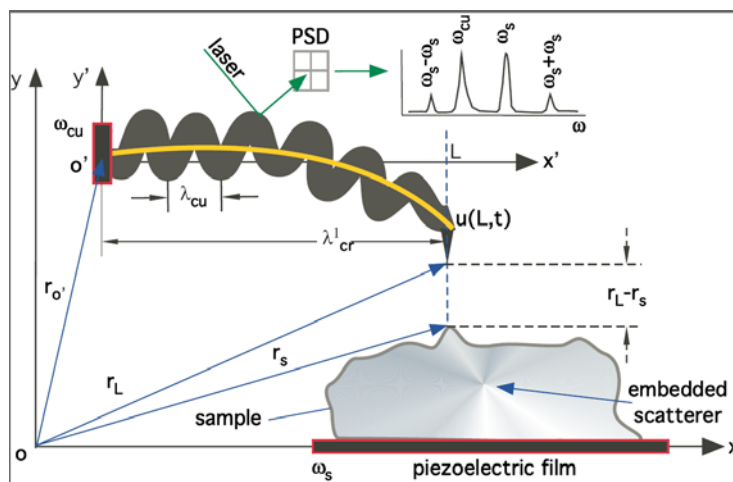
- Simultaneous acquisition of various information
- Subsurface imaging can be performed at multiple levels of information
- System allows for new modalities of sensing

## Contact:

Russ Miller  
Oak Ridge National Laboratory  
P.O. Box 2008, Mail Stop 6196  
Oak Ridge, TN 37831  
(865) 574-8746  
[millerrr@ornl.gov](mailto:millerrr@ornl.gov)  
[www.ornl.gov/partnerships](http://www.ornl.gov/partnerships)



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## Summary:

### Technology Description

The invention allows for the physical/mechanical, and chemical, nanoscale features of various material samples to be measured. The invention provides nanoscale surface as well as subsurface information. With high resolution, the subsurface material such as embedded nanoparticles or other material inhomogeneities can be resolved with a resolution comparable to other existing atomic force microscopy-based approaches.

### Technology Application

Material nanoscale properties such as porosity, granularity, elasticity, density, and morphology may all be acquired from a single run. When implemented in a sensor, the invention allows for the detection of extremely small quantities of an adsorbed material, or the measurement of extremely small variations in the sensor response.

The potential product could be a new design for atomic force microscope and/or a new design of a MEMS-based sensor.

**Stage of Development:** Proof of Principle

**Patent Status:** Patent application in progress

**Licensing Status:** Available for licensing in specific fields of use

**Inventor(s):** Ali Passian, Thomas George Thundat, Laurene Tetard



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