



InnoSense LLC is a technology firm serving the aerospace, defense, energy, and healthcare markets. We develop cutting edge innovations in chemical and biological sensing, and nanomaterial technologies. Learn more about our latest innovations at www.innosense.us



InnoSense LLC is about 15 miles from Los Angeles International Airport. We have teaming arrangements with large and small companies to transition our technologies to commercially viable products.

Located in Southern California



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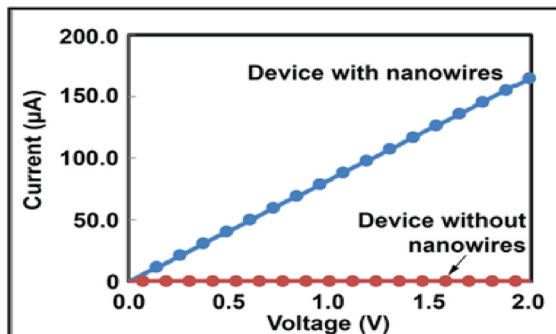
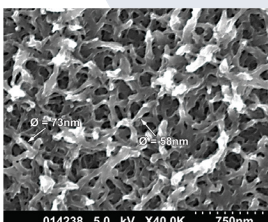
HYPERGOLEAK™

**POLYMER NANOWIRE
MICROELECTRONIC
SENSOR FOR
HYPERGOLIC
PROPELLANTS**

POLYMER NANOWIRE MICROELECTRONIC SENSOR - US PATENT PENDING

InnoSense LLC is developing a novel sensor for hypergolic propellant leaks, **HypergoLeak™**. This patent-pending sensor is selective, reliable, compact and ruggedized—perfect for constricted propellant storage locations.

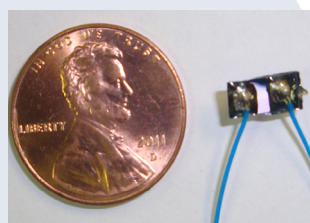
Scanning electron microscope image of polymer nanowires (top left) and the I-V curves (bottom left) of the prototype HypergoLeak device.



Hypergolic propellants are highly toxic and corrosive making any leak a potential disaster. HypergoLeak™, based on an innovative polymer nanowire technology, offers early, accurate detection of common components of hypergolic propellants. This microelectronic sensor will sound an alarm in less than 5 minutes of detecting one of these components.

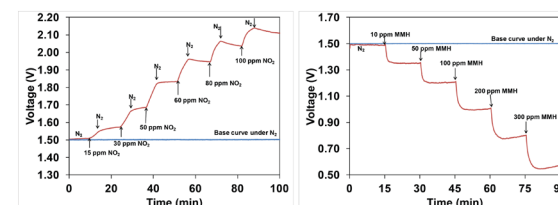
TECHNOLOGICAL BENEFITS

- Selectively and reliably detects hypergolic propellant components.
- High signal-to-noise ratio (sensor response is over 750 times greater than noise level).
- Targets hypergolic propellant components with little to no interference from acetone, ammonia, carbon dioxide, methane and oxygen.
- Operates in temperature extremes ranging from -46 °C to +71 °C.
- Resists mechanical perturbations such as vibration and shock.
- Needs little power—operates on an average of <0.3 mW of power.
- Targeted for a mean time between failures (MTBF) greater than 12,500 hours.
- Excellent long-term operational stability and long shelf-life.



The size of a HypergoLeak microelectrode sensor component is smaller than a penny (left).

The microelectrode sensors fit inside compact housing canisters (bottom). Thus, able to seamlessly integrate into any monitoring system.



Device responses to various concentrations of hypergolic propellants.

POTENTIAL MARKETS

The reliability and specificity of InnoSense's HypergoLeak™ sensor is indispensable wherever hypergolic propellants are used:

- Ballistic missiles such as Terminal High Altitude Area Defense (THAAD) missiles and Intercontinental Ballistic Missiles (ICBM),
- Rockets and space systems.

Additionally, the nanowire chemistry of the sensor can also be customized to address a broad range of applications. Spin-off markets could include environmental gas sensing, counterterrorism and, industrial and medical diagnostic applications.



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