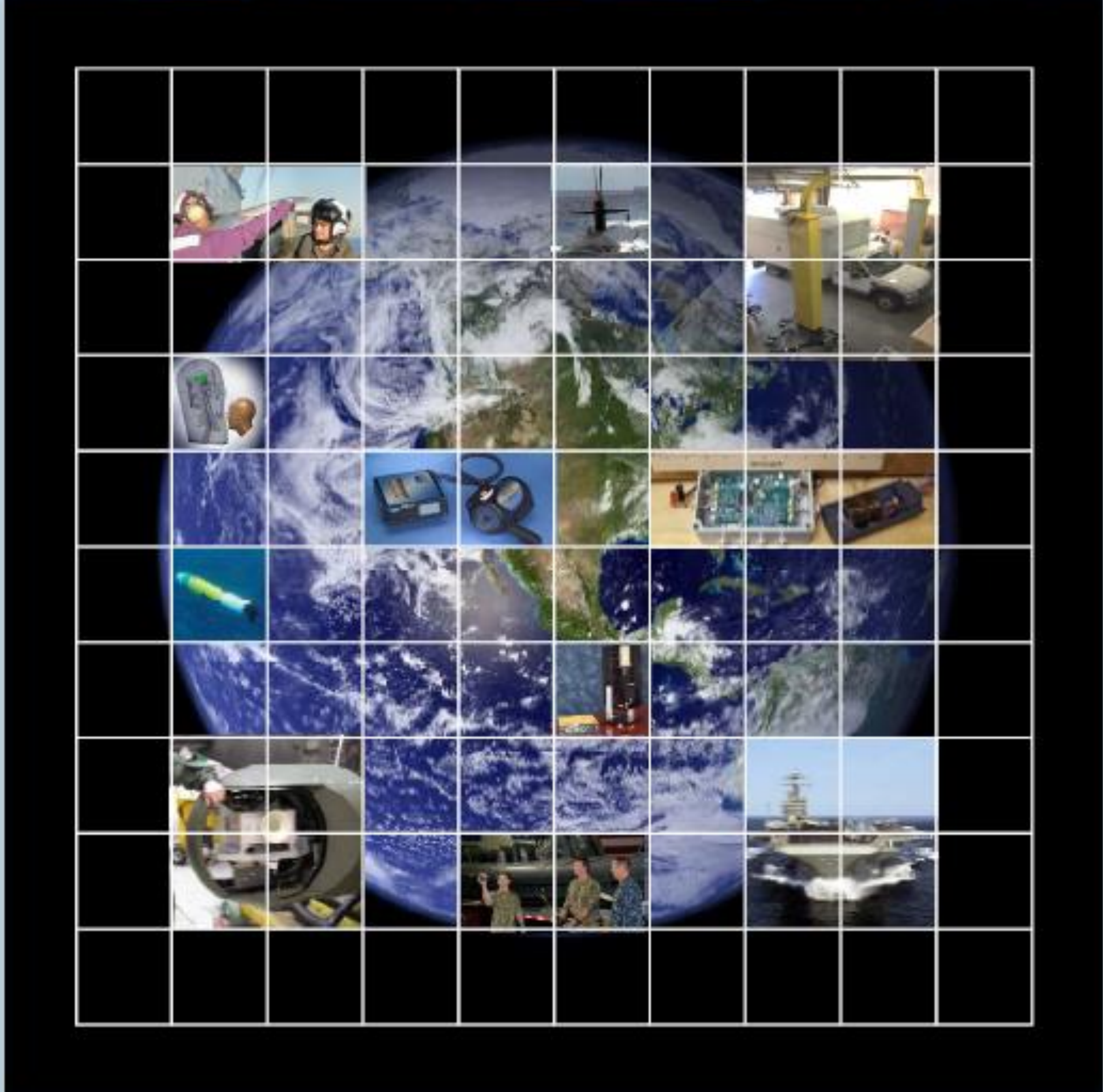




SI Physical Sciences Inc.



WE MAKE SCIENCE WORK FOR YOU

Physical Sciences, Inc.

For over 40 years, PSI has provided integrated research and development services to deliver products and solutions to commercial and government customers. Areas of expertise include optics and imaging, sensors and instrumentation, advanced materials, batteries, chemistry, electronics, lasers, and the interdisciplinary fields of combustion systems, electrochemistry, electro-mechanics, optoelectronics, and photonics. PSI is a 100% employee-owned company with approximately 200 employees that uses its extensive laboratory and prototyping facilities as well as low rate production capabilities to enable rapidly transferring from concept to advanced prototype to manufacturing.

Goal

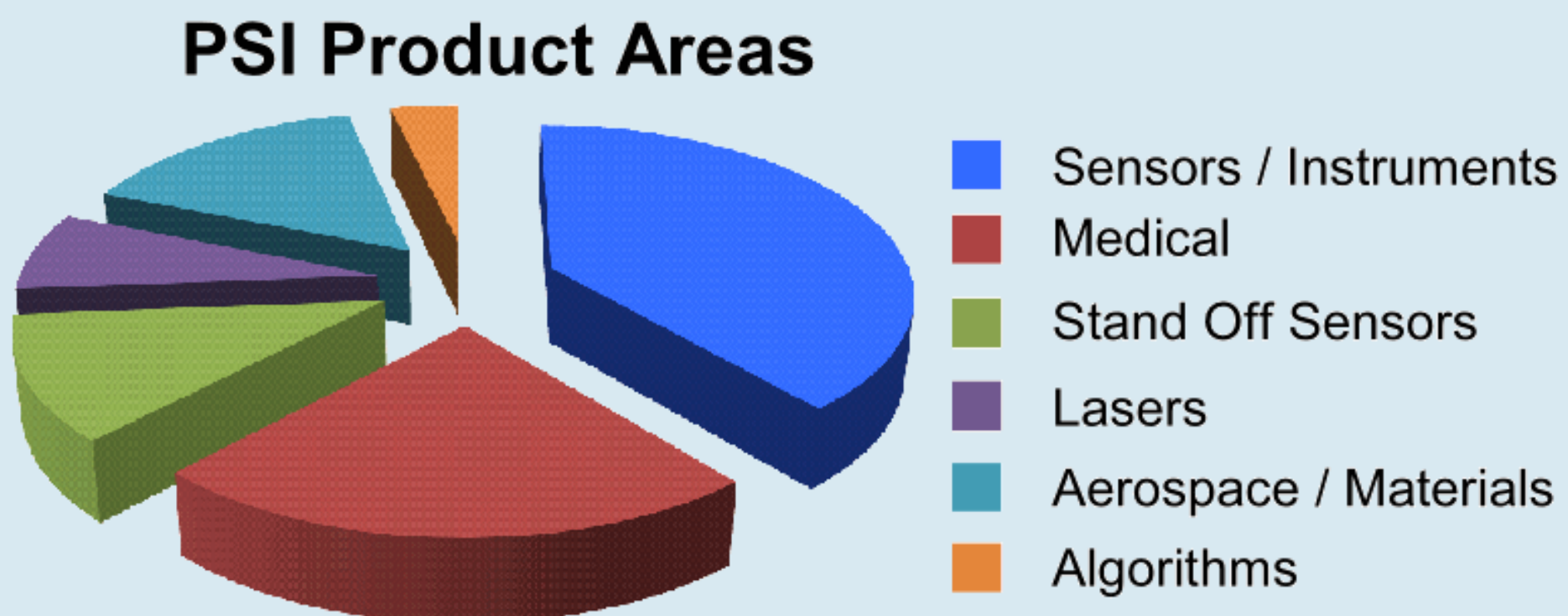
PSI bridges the gap between applied research and systems integration in the development and deployment of technology for our government and commercial customers.

Leadership Statement

PSI has an international reputation for technical excellence and innovation. We have successfully developed and transitioned advanced technologies to support the missions of the Department of Defense, NASA, and many commercial partners. We are dedicated to the application of scientific and engineering innovation to solve technological problems. We perform product development to manufacturing prototype and ultimately transition it to the military and commercial market sectors through manufacturing or licensing.

Core Competencies

PSI has a highly interdisciplinary staff with advanced degrees in chemistry, biology, physics, applied physics, electrical engineering, aeronautical engineering, mechanical engineering, and materials science. We are structured to enable cross-disciplinary collaboration between our scientists and engineers and to manufacture solutions to our customers' technical problems. Specific core competencies include: passive remote sensing, active laser-based sensing, ISR systems, radiation sensors, and optical components.



Energetics Mixing and Characterization

Two remotely-controlled energetics mixing bays offer mixing with a resonant acoustic mixer for small-scale formulation development in batches up to 0.5 lb (~0.25 kg) and a 1-gallon Baker Perkins shear mixer for propellant mixing in batches up to 15 lb (~7 kg). Solid rocket motor propellant grains are vacuum cast in a 18 ft³ (0.5 m³) vacuum chamber.



Insensitive Munitions (IM) and Hazard Classification Testing

On-site IM testing of propulsion and energetic systems, including full-scale Slow Cook Off (SCO) for thermal threat mitigation and 0.50 caliber Bullet Impact (BI) testing according to AOP 4241 standards. Impact, friction, and electrostatic discharge (ESD) sensitivity testing is performed at PSI according to UN standards.

Energetics Storage

Storage of HD 1.1 explosives up to 50 lb (22.7 kg) and HD 1.3/1.4 explosives up to 1050 lb (476 kg).



Propulsion Testing and Evaluation

Energetics T&E facilities include six (6) propulsion test cells, one (1) propellant surveillance laboratory, two (2) propellant mixing bays, and two (2) explosives test ranges. Propulsion test cells are arranged for solid rocket motors, monopropellant thrusters, liquid rocket engines, air-breathing ramjets, and solid propellant gas generators.

All propellant, munitions, and explosives storage and testing activities are done according to the DoD Contractor's Safety Manual for A&E (DoD 4145). PSI's propulsion and energetics facility maintains compliancy with local, state, and federal requirements.



InstantEye®

InstantEye® produces tactical UASs that are used by military, law enforcement, first responders, and commercial users around the world, boasting affordability, ruggedness, ease of use, and a multitude of tactical and imaging payloads.

Mobile Urban Radiation Search (MURS)

MURS is an advanced mobile radiation detection, identification, and source localization system with an exceptionally low false alarm rate and stability in complex and variable radiological backgrounds.

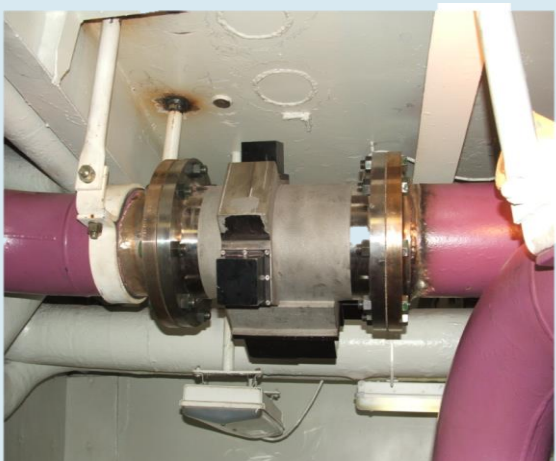


Compact Adaptive Optics Retinal Imager (COARI)

COARI is a compact, multi-modal, high-resolution, adaptive-optics retinal scanner designed for fast cone-photoreceptor density mapping and precise imaging of retinal structures and blood flow equipped with an optical coherence tomography (OCT) channel for complimentary cross-sectional imaging.

Tunable Diode Laser (TDL) Gas Sensors

PSI has developed a range of in situ TDL sensors, including oxygen, CO₂, H₂S, combustion products, and mass flux, that take advantage of robust and mature telecom components to offer high precision, high accuracy, and highly selective detection of trace gases with application to a variety of commercial, industrial, defense and environmental problems.



In-Line Fuel Monitor

PSI has supplied approximately 100 In-Line Fuel Monitor to Navy aircraft carriers and littoral combat ships to provide real-time measurement of water and particulate contamination levels in fuel distributions using laser-based sensing.

CONTACT

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