



About us

- Rhombus Power is a silicon valley startup that has developed a proprietary platform for neutron detection and imaging
- Partners include NASA Ames, UC Berkeley, San Jose State University, Ulsan National Institute of Science & Technology (S. Korea) & Pukyong National University (S. Korea)

Opportunity

- Tracking the illicit movement of special nuclear material, e.g., plutonium, uranium etc., that can be used to make nuclear weapons and dirty bombs is a national security priority
- Rapid and sensitive detection of neutrons enables such tracking
- Helium-3 is the most commonly used material in neutron detectors
- The world has run out of Helium-3 and the search for alternatives is ongoing

Gap

- Currently available alternatives do not meet the requirements of defense & homeland security
- Need for a reliable, sensitive, accurate, modular and scalable solid-state neutron detection technology that can help implement a Global Nuclear Detection Architecture

Our solution

- Rhombus has developed a proprietary solid-state neutron (and other sub-atomic particle) detection and imaging platform that is robust, accurate, scalable and cost-effective
- Our first product – Mercury – is a neutron detection module that meets and exceeds the requirements of homeland security

Summary of technology

- Modular and highly scalable COTS solid-state technology for thermal neutron detection and imaging
- Modules comprise solid state neutron detection components
- Does not use Helium-3 for detection
- Highly sensitive – able to detect 2.5 thermal neutrons/second/cm² in 2 seconds or less



Rhombus Power Inc.

- Complete gamma discrimination – uses proprietary computational algorithms, no false positives from Gamma ray background (Cs-137, Co-60 sources) upto 20 mR/hour
- Light weight and robust design
- Meets ANSI 42.34/53 standards
- Nuclear detection network – can work in both standalone as well as part of a nuclear detection network in order to implement Department of Nuclear Defense Office’s vision of a Global Nuclear Detection Architecture

Some potential use cases

- Pager, Handhelds & Backpacks for Customs & Border Patrol, Coast Guard etc.
- Vehicle-mounted systems for cities, highways and other non-points of entry into the continental United States
- Radiation portal monitors for border crossings and ports
- Maritime systems for the Navy and Coast Guard
- Monitoring cargo containers at sea ports – e.g., modules can be embedded permanently into cargo containers

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