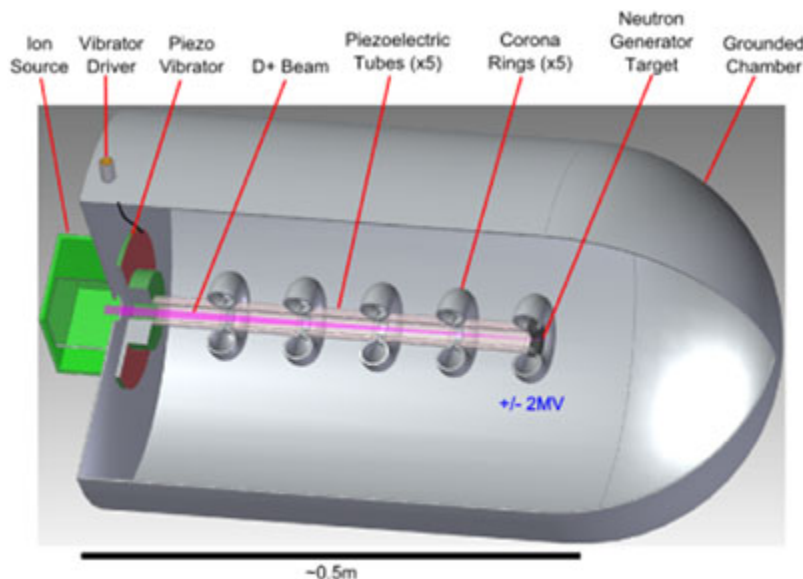


Docket #: S15-084

Piezoelectric Neutron Generator (SPAN)

Stanford researchers have developed a portable particle accelerator – the SLAC Piezoelectric Accelerator Neutron Source (SPAN). When combined with an ion source and a deuterated target, this piezoelectric, high-voltage generator makes a compact neutron generator system. The piezoelectric material provides the structural support, insulation, and high-voltage generation for the electrostatic accelerator. SPAN demonstrates dramatic size, weight, and power improvement over the present state-of-the-art.



Piezoelectric Accelerator Neutron Source (SPAN)

Applications

- **Accelerator-driven neutron sources for thermal neutron radiography:**
 - Manufacturing Quality Assurance (aerospace, automotive, etc.)
 - Imaging corrosion in aircraft structures
 - Locating faulty connections in electronics
 - Detecting explosive charges

- **Medical therapy and imaging**
- **Fast neutron radiography** for homeland security and counter-terrorism
 - Portable cargo scanning
 - Defense-forensics applications
- **Neutron activation analysis**
 - Nuclear fuel assembly assays
 - Gold detection in bore-hole cores
- Active interrogation
 - **Cargo and package scanning for explosives, fissile, or fertile nuclear materials**

Advantages

- Compact, light and appropriate power

Patents

- Issued: [9,750,124 \(USA\)](#)

Innovators

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