



Proudly Operated
by **Battelle** Since 1965

Battelle Number(s):

12281-B

Patent(s) Issued

Available for licensing in all fields

Available Technologies

Methods for Detecting Hydrogenous Material Using Neutron Spectroscopy and Time Tagging

SUMMARY

The neutron spectrometer created by Pacific Northwest National Laboratory (PNNL) can be used by arms control and nonproliferation agents to passively characterize neutron sources in sealed containers. The portable system, weighing ~35 kg, is highly efficient requiring less than 5 minutes to collect data from mixed neutron and gamma ray sources (~200,000 neutron detection events are required). It distinguishes between different energy spectra sources with a high degree of statistical confidence. The design is optimized for good energy separation in the 0.1- to 10-MeV range, a common need in arms control applications.

Beyond detecting weapons, the neutron spectrometer could be used commercially to measure fat in hamburger and determine the steam or water content in pipes. The neutron spectrometer is available for testing and demonstration of its potential in field settings.

ADVANTAGES

- * The system is portable (~35kg) allowing for on-site detection
- * technology is highly efficient, collecting data in less than five minutes



Patents & Intellectual Property

- » Patent #: 6,580,079
- » Patent #: 6,707,047

Technology Portfolio(s)

- » Radiation Sensors

Potential Industry Applications

- » Aerospace & Defense
- » Automotive & Transportation
- » Oil & Gas
- » Public Administration & Government
- » Recycling & Waste Management
- » Security

Dave L. Greenslade
Pacific Northwest National Laboratory
(509) 375-6555
david.greenslade@pnnl.gov
<http://availabletechnologies.pnnl.gov>



Proudly Operated by **Battelle** Since 1965