Finely dispersed Gd$_2$O$_3$ nanoparticles demonstrate first-rate X-Ray shielding properties

Eliminate toxic lead issues in manufacturing, installation, use and disposal

Measured X-Ray absorption data from a number of prototype Gd$_2$O$_3$ epoxy panels ($\phi_s =$ volume fraction) shown against pure Pb standard (NCRP #147)

The Technology
Researchers at the University of Western Australia (UWA) have been refining the preparation and dispersion of Gd$_2$O$_3$ nanoparticles in a polymer matrix, thereby improving the X-Ray attenuation properties of this material and hence providing a novel environmentally friendly alternative to lead based materials.
State of Development
The prototype panels have been manufactured using conventional processes (e.g. using a ball mill, centrifuges and sonication).

Commercial Opportunity
UWA is seeking expressions of interest from industry that may want to adopt the technology for their products.

Intellectual Property protection
The technology is eligible for patent protection with a (grace period) patent application prior to 25 April 2017 in the US, Canada and Australia.

The University of Western Australia
UWA is a research-intensive university ranked 96th in the world (Shanghai Jiao Tong University’s internationally recognized Academic Ranking of World Universities – August 2016), and one of the internationally recognized Australian Group of Eight Universities.

References


(Please feel free to contact Tom Schnepple or Prof Leong for copies)

Further Information
Commercial correspondence to:
Tom Schnepple
Project Manager Commercialization
The University of Western Australia
E: tom.schnepple@uwa.edu.au
T: +61 8 6488 1520

Technical correspondence to:
Professor Yee-Kwong Leong
School of Mechanical & Chemical Engineering
The University of Western Australia
E: yeekwong.leong@uwa.edu.au
W: www.uwa.edu.au/people/yeekwong.leong