

# Nuclear and ionising radiation detection and dosimetry

ANSTO offers services including techniques to support the development of innovative radiation detector technology, such as performing alpha spectroscopy to characterise charge collection capability, radiation transport simulation as well as measuring the electrical characteristics of novel detectors and semiconductor devices.

## Capability selections

- High precision gamma-ray spectrometry
- GEANT 4 radiation transport modelling
- Nuclear detection and microdosimetry.

## High precision gamma-ray spectrometry

High precision gamma-ray spectrometry is a technique for the identification of gamma-ray emitting radioisotopes within a sample of material. The Nuclear and ionising radiation detection and dosimetry service uses gamma-ray spectrometry for identification of specific isotopes and to obtain relative isotopic abundance information within sealed sources.

The instrumentation in this group has limited availability and is primarily for ANSTO researchers and/or collaborators with whom we have an ongoing collaboration.

## GEANT 4 radiation transport modelling

GEANT 4 (for Geometry And Tracking) is a toolkit for the simulation of the passage of particles through matter using Monte Carlo methods. Staff within Nuclear and ionising radiation detection and dosimetry have extensive experience with this technique and can offer expert advice and training on its use.

## Nuclear detection and microdosimetry

This capability provides access to a range of electrical characterisation equipment for radiation detector development. This suite of techniques includes access to current-voltage measurement, capacitance-voltage measurement, probe station, vacuum chambers, alpha particle and gamma ray spectroscopy and transient current pulse technique measurements.

Please discuss your proposal with the appropriate ANSTO **contact scientist** before making your capability selections and submitting your proposal.

For further information please contact:

David Boardman  
+61 2 9717 3522  
[dbn@ansto.gov.au](mailto:dbn@ansto.gov.au)

Dale Prokopovich  
+61 2 9717 9781  
[dpr@ansto.gov.au](mailto:dpr@ansto.gov.au)