UNIVERSITY of ROCHESTER

Undergraduate Research in Nuclear Science

Nuclear Science Group Lab

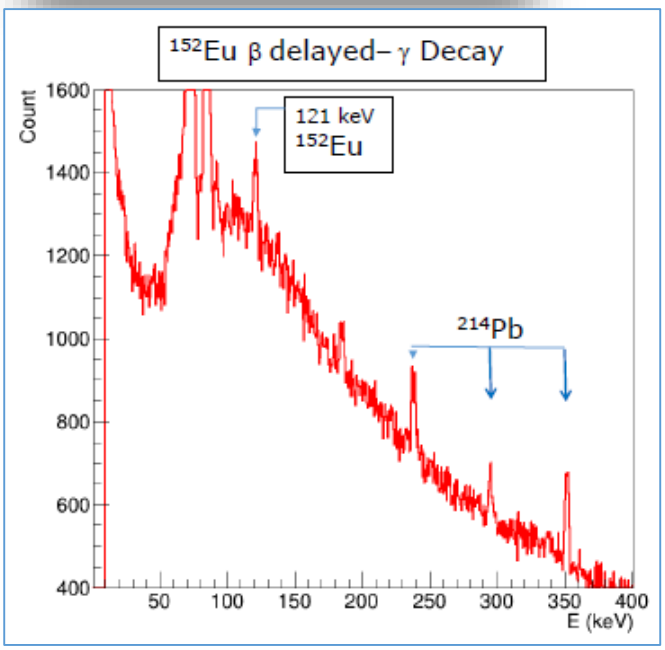
The **Nuclear Science Research Group (NSRG)** at the Departments of Chemistry and Physics employs part-time student researchers to help with ongoing experimental R&D:

1. Tritium transport on metal surfaces & lattices

Tritium is generated in light-water reactors, also used as fuel in fusion reactors, industrial applications. Recover via
→ Thermal desorption from surface/bulk
→ Surface removal by plasma induced ion sputtering

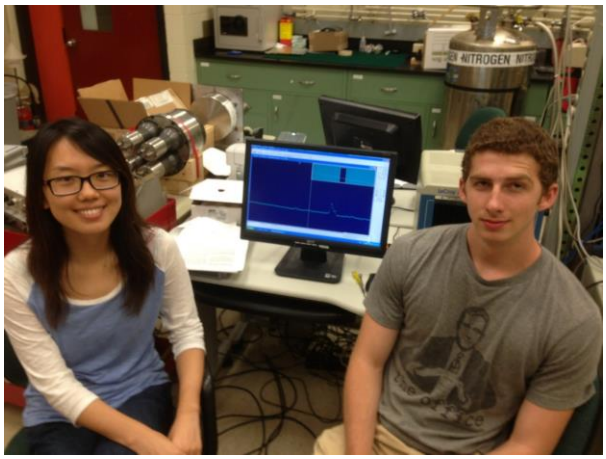
2. Laser-Ion Acceleration for Nuclear Science (LIANS) and Nuclear Activation

LIANS is a new technique to accelerate ions to energies sufficient to induce nuclear reactions in a target sample. Neutrons from such reactions can be captured again and transmute select target materials such as Eu isotopes. These are then identified by their β-delayed γ emission detected with high-resolution HPGe detectors.



3. High-resolution γ-spectroscopy in Nuclear Forensics Applications.

The isotopic composition of materials can be used to trace the origin and prior exposure of materials. The method has been used to identify UR experiments with radioactivity in the 1940s and 50s.



If you are interested in a sustained research affiliation with the NSRG, contact Prof. W. Udo Schröder, 466 Hutchison Hall, schroeder@chem.rochester.edu .