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Technology Foresight - Using of List Mode Electronics for a Modern Radionuclide Lab

Recent advances in high-speed electronics and multi-detector configurations have allowed the creation of laboratory detector systems requiring novel spectrum processing algorithms. Adoption of these new system designs led to revolutions in spectroscopy using techniques such as cosmic veto and coincidence counting spectroscopy and other applications. Now, with the advent of large high-density digital storage devices, it is possible to perform advanced processing on individual scintillator pulses. Processing of individual pulses allows multiple high-sensitivity analyses from a single measurement thereby improving laboratory throughput. The Centre for Security Science (CSS) of Defence Research and Development Canada (DRDC) in partnership with Health Canada (HC) hosted a workshop focused on directions for new designs appropriate for CTBT laboratory and other applications.

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