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Gamma-ray Spectroscopy Experiments with Rare-Isotope Beams and Highly-Efficient Arrays at TRIUMF-ISAC

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Located at the TRIUMF laboratory in Vancouver, Canada, the Isotope Separator and ACcelerator – ISAC – facility is one of the world's most advanced isotope separator on-line facilities providing high-intensity and high-purity radioactive ion beams for a wide variety of science programmes. ISAC's γ-ray spectroscopy programme for studying nuclear structure, nuclear astrophysics and tests of fundamental symmetries is centred around two major research instruments: (i) the GRIFFIN γ-ray spectrometer for β- and β-delayed γ-ray spectroscopy experiments with the low-energy beams provided by ISAC-I, and (ii) the TIGRESS γ-ray spectrometer for in-beam experiments with the accelerated radioactive-ion beams provided by ISAC-II. Both TIGRESS and GRIFFIN consist of 16 Compton-suppressed HPGe clovers and are augmented with powerful suites of ancillary detectors for coincidence measurements and channel selection leading to comprehensive spectroscopy studies of exotic nuclei. An overview of these facilities and recent results from the nuclear structure studies they enable are presented.
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