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The ISAC and ARIEL Facilities at TRIUMF. ADAM GARNSWORTHY, TRIUMF

The TRIUMF-ISAC rare-isotope beam facility provides intense beams of short-lived isotopes in the energy range from 20 keV to more than 5 MeV/u to a large suite of world-class experimental apparatus. The research programs enabled by these beams are focused on understanding the evolution of nuclear structure towards the limits of existence, the origin of the chemical elements in the universe, searching for physics beyond the standard model of particle physics, and the characterization of magnetic properties of new materials at surfaces and interfaces.TRIUMF is pursuing the ARIEL major expansion to the beam production capabilities with the addition of two new ISOL target stations with associated mass selection and purification that will serve the existing experimental apparatus of ISAC. One of the new target stations will receive a proton beam from the TRIUMF 520MeV cyclotron while the other will utilize intense electron beams provided by a high-power electron linac. Ultimately the ISAC and ARIEL systems will provide three simultaneous beams to enable forefront research programs. An overview of the experimental apparatus and the beam-delivery infrastructure will be given to explore the wide range of future research opportunities.