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### **Scientific opportunities and plans for RIBF**

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In the RIKEN RIBF facility, a large variety of heavy-ion beams are delivered at the energies  $E/A \leq 135$  MeV and 230–345 MeV to the low- and high-energy beam ports, respectively, under the scheme of the cascade acceleration utilizing the four ring cyclotrons, at most, and one of the three injectors. At the high-energy ports, high current radioactive-isotope (RI) beams are produced and isotope-separated with the superconducting in-flight RI separator BigRIPS. They can be then transported to three spectrometers, ZD, SAMURAI, and SHARAO, having different functions. Furthermore, a new isochronous storage ring (Rare RI Ring) and a gas-catcher RF ion guide system for slow RI beams (SLOWRI) are under construction downstream BigRIPS. The first beam commissioning tests of them will be conducted soon after the construction. Making use of these experimental key devices, BigRIPS-based experiments have so far been performed for  $\sim 270$  days since 2007. Among them, for instance, a series of  $\beta$ - $\gamma$  spectroscopy, the EURICA (Euroball RIKEN Cluster Array) project, has been unfolded since 2011 and invariant mass spectroscopy of extremely far unstable nuclei utilizing SAMURAI has started since 2012. In spring 2014, in-beam  $\gamma$ -ray spectroscopy was conducted in combination with the active liquid hydrogen target system MINOS that enables vertex position reconstruction. At the low-energy beam ports, SCRIT for e-RI scattering studies and GARIS-II for SHE researches have been installed. Their R&D studies for regular measurements are in progress. The previous RI separator RIPS is also available. In the talk, recent results and future plans of the RIBF facility will be presented.