

## The Radioactive Ion Beam Factory: recent results, present status and perspectives

*Friday, 10 December 2010 10:10 (30 minutes)*

The current status of the Radioactive Ion Beam Factory at the RIKEN Nishina Center will be presented. The facility is based on a new heavy-ion accelerator complex which can deliver very intense beams of nearly all elements, including Uranium, to the new two-stage in-flight fragment separator BigRIPS, to produce high-energy radioactive ion beams, which can be used at several experimental target stations.

The facility is operational since 2007 and the high performance and the potential of this new facility has been demonstrated by a series of recent experiments, including the discovery of over 40 new isotopes using in-flight fission of a 345 MeV/u Uranium beam (0.2 pA), and experiments shedding new light the island of inversion near the neutron-rich Ne, Na isotopes. The later experiments utilized a very high-intensity  $^{48}\text{Ca}$  beam of nearly 100 pA at 354 MeV/u.

In addition to an overview of the upcoming physics program (mainly in-beam gamma-ray spectroscopy), I will shortly introduce the major experimental devices that are now in operation (ZeroDegree spectrometer, high-resolution spectrometer SHARAQ, DALI2 gamma-ray spectrometer), that are under construction (electron-RI scattering system SCRIT, large acceptance spectrometer SAMURAI), as well as future devices (Rare RI storage ring, RF ion-guide gas-catcher system SLOWRI, next generation high-resolution gamma-ray spectrometer SHOGUN).

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