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The RI Beam Factory at RIKEN: Status and Prospects

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A number of new rare isotope facilities are in the planning or under construction worldwide. Often referred to as next-generation RIB facilities, major effort is being made towards bringing into operation RIB drivers with hundreds of kilowatt to megawatt primary beam powers. What could be considered the first such a facility, the RI Beam Factory (RIBF) at RIKEN was completed and brought into operation a few years ago. Its initial phase of operation and research represents a test bed for the opportunities, but also the challenges of a high-power facility.

The talk will attempt to summarize the experiences made. Design values for beam intensities have been fully achieved for light heavy-ion beams and used in experiments approaching new frontiers. Efforts are now directed towards the design goals that have been set for the heavier beams, where stripping and beam dynamic challenges are more formidable. Examples will be given of some major research achievements during the initial phase of operation. The present status of the accelerators, the experimental facilities, RI beam properties, and of the next steps in terms of research programs and accelerator improvements will be summarized

Primary author: HENNING, W. F. (RIKEN Nishina Center; TU Munich and Argonne National Laboratories, USA)

Presenter: HENNING, W. F. (RIKEN Nishina Center; TU Munich and Argonne National Laboratories, USA)

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