

Research Facility Development Division

Accelerator Group

RILAC Team

1. Abstract

The operation and maintenance of the RIKEN Heavy-ion Linac (RILAC) have been carried out. There are two operation modes: one is the stand-alone mode operation and the other is the injection mode operation. The RILAC has been used especially as an injector for the RIKEN RI-Beam Factory accelerator complex. The RILAC is composed of the 28 GHz SC ECR ion source, the frequency-variable RFQ linac, the frequency-variable main linac, and the SC booster linac (SRILAC).

2. Major Research Subjects

- (1) The long-term high stability of the RILAC operation.
- (2) Improvement of high efficiency of the RILAC operation.

3. Summary of Research Activity

The RILAC was started to supply ion beams for experiments in 1981. Thousands hours are spent in a year for delivering many kinds of heavy-ion beams to various experiments.

The RILAC has two operation modes: one is the stand-alone mode operation delivering low-energy beams directly to experiments and the other is the injection mode operation injecting beams into the RRC. In the first mode, the RILAC supplies a very important beam to the nuclear physics experiment of “the research of super heavy elements.” In the second mode, the RILAC plays a very important role as upstream end of the RIBF accelerator complex.

The maintenance of these devices is extremely important in order to keep the long-term high stability and high efficiency of the RILAC beams. Therefore, improvements are always carried out for the purpose of more stable and more efficient operation.

Members

Team Leader

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List of Publications & Presentations

Publications

[Proceedings]

K. Oyamada, E. Ikezawa, T. Ohki, H. Yamauchi, M. Tamura, A. Yusa, K. Kaneko, H. Imao, A. Uchiyama, K. Ozeki, T. Nishi, N. Sakamoto, K. Suda, T. Nagatomo, M. Fujimaki, K. Yamada, T. Watanabe, Y. Watanabe, and O. Kamigaito, “Present status of RILAC,” Proceedings of the 17th Annual Meeting of Particle Accelerator Society of Japan, PASJ2020 FRSP06.

Presentations

[Domestic Conferences/Workshops]

小山田和幸, 池沢英二, 大木智則, 山内啓資, 田村匡史, 遊佐陽, 金子健太, 今尾浩士, 内山暁仁, 大関和貴, 西隆博, 坂本成彦, 須田健嗣, 長友傑, 藤巻正樹, 山田一成, 渡邊環, 渡邊裕, 上垣外修一 「理研重イオンリニアックの現状報告」, 第 17 回日本加速器学会年会, PASJ2020 FRSP06.