

Accelerator Applications Research Division
RI Application Research Group
Industrial Application Research Team

1. Abstract

Industrial application research team handles non-academic activities at RIBF corresponding mainly to industries.

2. Major Research Subjects

- (1) Support of industrial utilization of the RIBF accelerator beam.
- (2) Fee-based distribution of radioisotopes produced at RIKEN AVF Cyclotron.

3. Summary of Research Activity

(1) Support of Industrial Utilization of RIBF

RNC promote facility-sharing program “Promotion of applications of high-energy heavy ions and RI beams.” In this program, RNC opens a part of the RIBF facility, which includes the AVF cyclotron, RILAC, RIKEN Ring Cyclotron and experimental instruments, to non-academic proposals from users including private companies. The proposals are reviewed by a program advisory committee, industrial PAC (In-PAC). The proposals which have been approved by the In-PAC are allocated with beam times and the users pay RIKEN the beam time fee. The intellectual properties obtained by the use of RIBF belong to the users. In order to encourage the use of RIBF by those who are not familiar with utilization of ion beams, the first two beam times of each proposal can be assigned to trial uses which are free of beam time fee.

In July 2020, the In-PAC met and approved fee-based proposals from private companies; two proposals from new companies and three proposals from continuously using companies. In January 2021, the In-PAC held a mail review and approved three fee-based proposals from continuous users. In 2020, six companies executed eleven fee-based beamtimes, seven of which utilized a Kr beam with a total beam time of 153 h and four utilized, an Ar beam with a total beam time of 73 h.

(2) Fee-based distribution of radioisotopes produced at RIKEN AVF Cyclotron

We have been handling fee-based distribution of radioisotopes since 2007. The radionuclides are ^{65}Zn ($T_{1/2} = 244$ days), ^{109}Cd (463 days), ^{88}Y (107 days), ^{85}Sr (65 days) and ^{67}Cu (2.58 days) which are produced at the AVF cyclotron by the Nuclear Chemistry Research Team. According to a material transfer agreement (MTA) drawn between Japan Radioisotope Association (JRIA) and RIKEN, JRIA mediates the transaction of the RIs and distributes them to users. Details can be found on the online ordering system J-RAM home page of JRIA.

In 2020, we delivered one shipment of ^{109}Cd with an activity of 10 MBq, three of ^{65}Zn with a total activity of 12 MBq, two of ^{88}Y with a total activity of 2 MBq, and two of ^{85}Sr with a total activity of 3 MBq. The final recipients of the RIs were four universities, one private company, and one medical research center.

Members

Team Leader

Atsushi YOSHIDA

Contract Researcher

Tadashi KAMBARA

Technical Staff I

Akihiro NAMBU

List of Publications & Presentations

Others

Fee-based beamtimes for private companies: Kr beam 153 h, Ar beam 73 h.