

The Completion of Construction and Future role of the Radioisotope Research Center

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1. Introduction

Under the 4th Nuclear Promotion Comprehensive Plan ('12~'16), four major areas were announced to expand the radiation infrastructure at the international level, and Busan Metropolitan City and Gijang-gun have recognized the importance of radioisotopes and radiation-related industries and have made investments in the creation of a science industrial complex for radiation. The Science Industrial Complex of Radiology, organized by the local government, has set the goal of fostering high-tech industries with the vision of creating a hub for the world's leading radiology and science convergence industries and has been pushing for six strategic tasks.

Starting with the establishment of the Dongnam Institute of Radiation & Medical Science center in 2010, the construction project is underway with the Heavy Particle Accelerator Center, the Power Semiconductor Commercialization Center, and the Gijang Research Reactor.

In line with the strengthening of research infrastructure and the strengthening radiation fusion to create new industries, we confirmed the importance of research bases that can commercialize the development and utilization of radioisotopes and started planning radiation research based expansion projects. The project to build an Radioisotope Research Center started in December of the same year after obtaining the construction permit for Gijang Research Reactor in May 2019.

This project aims to develop technology for medical and academic industries, commercialize production isotope raw materials through commercialization, and has been carrying out the project to establish a research center and establish an operating system.

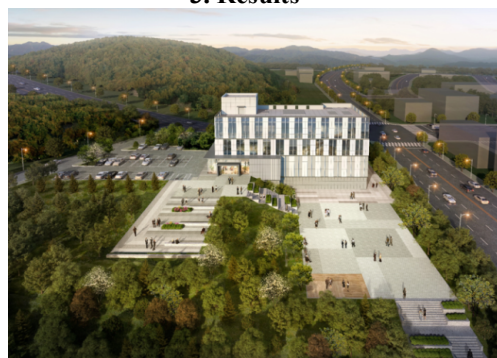
2. The Status of construction of Gijang Radioisotope Research center

The center was located at 286 Imrang-Ri, Gijang-Gun, Busan, and was constructed with one basement level and three floors above the ground with a land area of 19,369 m², a building area of 1,6361 m², and a total floor area of 4,708 m².

The first basement floor consists of an RI filter room, a machine room, and an electric room, and a separate staircase is installed for the efficient connection between the management area on the first floor and the

management area on the first basement floor. The first floor above the ground is a management area for handling radioisotopes, and an open hot-laboratory that can conduct simple experiments and education at the same time and a laboratory for about 10 other purposes are arranged. In addition, there are HP rooms and automatic control rooms, so that the exhaust of each laboratory can be automatically controlled. On the second floor above the ground, offices for 40 to 50 people are arranged southward, and about 10 laboratories and analysis rooms are arranged. There is an Open-Lab room in the center with about 10 fume hoods, so free experimentation is possible and educational practice is possible. In addition, there is a seminar room and a lounge to conduct simple seminars. On the third floor above the ground, there are corporate occupancy spaces and rooftop gardens that can be used by ventures (small and medium-sized enterprises) and academia. There is an advantage of being able to arrange a space where business activities are possible according to the purpose without dividing the space in the corporate occupancy space. Currently, the completion of the center-related building has been completed, and RI licensing and decorating the internal laboratory are in progress.

3. Results



< Bird's eye view of Center >



<Radioisotope Research Center >

The functions of the Radioisotope Research Center are as follows

First, it plays a main role as Radiation & Radioisotope related R&D at Busan region in Korea. In addition to Fission Mo, which is mainly intended to be produced in Gijang Research Reactor, the development of therapeutic radioisotopes is to be carried out. In addition, high value-added research such as radiopharmaceuticals manufacturing technology, radiolabeled compound and isotope based devices will be conducted.

Secondly, we would like to strengthen the support function of radioisotope industrial technology. In using radioisotopes and radiation facilities, we intended to provide public research facilities to overcome the difficulty of not being able to related research due to lack of radioisotope handling facilities.

Third, we want to cultivate specialists in radiochemistry and radiopharmaceutical fields. In the near future, the community was formed to provide systematic radioisotope handling technology and provide a foundation for tutoring excellent human resources at local universities.

In conclusion, through this research center we intend to contribute to the early settlement of companies and academia at Radiation Science Complex in Gijang

A thank-you NOTE

This project was carried out as one of the radiation research-based expansion projects organized by Ministry of Science and ICT.