

Recent Research Trends on Accelerator-Based BNCT in KIRAMS

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Boron Neutron Capture Therapy (BNCT), which uses only the nuclear energy of boron and neutrons to destroy cancer cells, is a radiation therapy that can selectively remove only cancer cells. It has already attracted attention in and out of the medical world as various studies related to BNCT have been made in USA, Japan, Germany, Finland, Sweden, Netherlands, Czech Republic, Taiwan, Argentina, and China. In particular, Japan has been steadily advancing treatment of BNCT patients using nuclear reactors, and has also secured technological prowess by developing BNCT technology based on accelerators.

KIRAMS started research on BNCT for the first time in Korea, but had to stop using the reactor as a medical facility and the medical license of the boron compound. However, in recent years, the construction of a BNCT facility based on an accelerator has been started on behalf of a nuclear reactor, opening the way for realizing BNCT once again.

KIRAMS has excellent research capabilities in medical device engineering such as radiation oncology, nuclear medicine, medical physics, and neutron physics that can support research on BNCT. Based on these research capacities, there is a need to develop specialized and activating research on the synthesis of boron compounds for neutron capture therapy, and the government's bold policy support. We expect to be able to secure world-class BNCT technology competitiveness within a long time.

Acknowledgments

This study was also supported by a grant of the Korea Institute of Radiological and Medical Sciences (KIRAMS), funded by the Ministry of Science and ICT (MSIT), Republic of Korea. (No. 50532-2019) This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIP) (No. NRF-2017R1C1B2004760).

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