

Development and Application of C-band LINACs at DIRAMS Research Center

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In 2015 and 2018, the Dongnam Institute of Radiological & Medical Sciences (DIRAMS) in Busan, Korea, developed 6-MeV and 9-MeV C-band electron linear accelerators (LINACs) for radiation therapy research. The DIRAMS is working on developing the domestic radiation therapy devices through the development of core parts of LINAC by establishing an precision processing system and a vacuum brazing system. Recently, in cooperation with PAL and KERI, it has succeeded in developing an electron gun for small accelerators and the alternative device of vacuum switch. For innovative FLASH-RT treatment in the radiotherapy field, the DIRAMS LINACs provide both conventional (<0.1 Gy/s) and ultra-high dose rate beams (>40 Gy/s) with monitoring the real-time dose using a transmission-type ionization chamber. This presentation will discuss the current status of DIRAMS LINACs, their medical applications, and new irradiation bunkers and support facilities established in 2024 for the optimization and industrialization of radiotherapy machine. (This work was supported by the Dongnam Institute of Radiological & Medical Sciences (DIRAMS) grant funded by the Korea government (MSIT). (No. 50493-2024))

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Best Presentation

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Contribution track

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