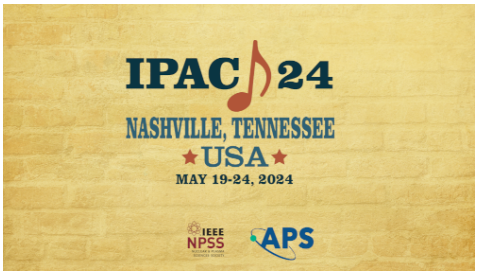

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Real-time 100 MeV proton beam monitoring system for radioisotope production at KOMAC

Wednesday, 22 May 2024 16:00 (2 hours)

In Korea Multi-purpose Accelerator Complex (KOMAC) of Korea Atomic Energy Research Institute (KAERI), a 100 MeV proton LINAC is in operation and provides the proton beam for various applications since 2013. A radioisotope (RI) production beam line has developed in 2015 and the commissioning started in 2016. Recently, a beam diagnostics system for high proton beam currents of 100 μA was designed to produce the Cu-67 radioisotope, which is considered the next generation of radiopharmaceuticals.
The beam diagnostic system includes a multi-wire scanner and Faraday cup to measure the position and current of the proton beam. It also utilizes an AC current transformer and 4-sector collimators for real-time position and current monitoring, respectively. Considering the long beam irradiation time for RI production, the system was designed to be moved up and down using cylinders so that it can only be used for beam QA. The control system was designed to be integrated with the EPICS IOC operating in other target rooms. In this paper, we would like to present the details of the beam diagnostic system and preliminary experimental results of real-time monitoring for 100 MeV RI production.

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