MURATA-2: Design of SPECT System for BNCT with GAGG Scintillator in Osaka University

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Real time boron imaging is indispensable in BNCT to monitor the local boron dose during irradiation. Sometimes, it is called PG-SPECT or BNCT-SPECT. There are many ideas proposed and at the moment it is a very serious competitive situation worldwide. Realization of it is however known to be difficult, because radiations of primary neutrons and secondary gamma-rays play a very serious background role in the measurement, and as a result it becomes hard to extract only 478 keV gamma-rays during the BNCT irradiation. And another reason is naturally that BNCT is a treatment, not diagnostics, leading difficulties in the measurement of signals of interest from 360 degrees like CT. In Osaka University, researches of PG-SPECT have been carried out for years, and now we completed the final design. We will describe the brief results of the design and performance in the meeting.