

### **Characterizing the Position Sensitivity in Plastic Scintillators**

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A linear energy transfer (LET) spectrometer or a space dosimeter based on LET measurement can be developed using plastic scintillators. Then, energy deposition and path length due to incident radiation are necessary to be measured to calculate the LET in plastic scintillators. In this study, the position sensitivity characteristic of plastic scintillators is examined. For this purpose, multi-segmented photomultiplier tubes (PMT) are attached to the both ends of four square-aligned plastic scintillator rods (NE102A) irradiated by radioactive sources which are placed at several positions along the scintillator rod. The obtained signals from the measurement system can establish a dependence of signals on the distance between the radioactive source and PMT. Thus, the position of radiation incidence in the respective scintillator rod is evaluated. Based on the incident position, the path length of radiation in the plastic scintillator rod can be determined. The experiments and results will be presented in detail in our presentation.