

## **Simulation of intrinsic resolution of scintillation camera in Monte Carlo environment**

### **ABSTRACT**

In a typical scintillation camera system, intrinsic resolution is dependent upon the accuracy of the identification of an interaction position. This paper intends to set up a evaluation tool based on Monte Carlo simulation for the purpose of estimating the intrinsic resolution of scintillation cameras. Monte Carlo N-Particles (MCNP) Code was applied to simulate the components of the model platform referred to Toshiba GCA-7100A with a monolithic Sodium Iodide (NaI) scintillator ( $40 \times 40 \times 0.9525$  cm<sup>3</sup>). The simulation result was 3.7 mm full width at half maximum (FWHM) for intrinsic resolution which came out to be in a good agreement with the experimental result. This suggests that our proposed evaluation tool may help to optimize the parameters of the detector without physical experiments.

**Keyword:** Scintillation camera; MCNP; NaI; Intrinsic resolution