



Contribution ID: 299

Type: Oral Presentation

## Optimization of Scintillation Properties of Plastic Scintillator for PET/CT Using GEANT4 Simulations

Thursday, 7 July 2022 15:45 (15 minutes)

Geant4 simulation of plastic scintillator was performed to study some properties of the scintillator for possible use as a detector in SPECT/CT and PET/CT scans. The study was concentrated on the stopping power and light output of the scintillator. Different geometries such as squares, triangles, polygons, and circles were studied. The length of the different geometries varied from 5 cm to 15 cm. The reflectivity of the wrapping material of the scintillator for optimization of the optical photons was also studied in a range of 0.900 to 0.975. An annihilation gamma, 511 keV, was used in the simulation and the Compton interactions were tracked in the plastic scintillator.

### Apply to be considered for a student ; award (Yes / No)?

Yes

### Level for award;(Hons, MSc, PhD, N/A)?

PhD

**Primary author:** AKAKPO, Elijah Hornam (University of the Western Cape)

**Presenter:** AKAKPO, Elijah Hornam (University of the Western Cape)

**Session Classification:** Nuclear, Particle and Radiation Physics

**Track Classification:** Track B - Nuclear, Particle and Radiation Physics