

What is going on inside your body ?

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Nuclear diagnostic imaging

Is an area of radiology that allows physicians to see from the outside how the body is functioning inside, after injecting the patient by a radioactive material called radiopharmaceutical.

Radiation detectors

Gamma radiation can be detected by gamma cameras. The sensing elements in these cameras are called radiation detectors. Scintillation detectors and semiconductor detectors are the most commonly used.

Research Aim

The main purpose of this work was to compare the efficacy for medical imaging of the scintillator based camera Hybrid Compact Gamma Camera (HCGC) Figure 1, developed in the Space Research Centre, University of Leicester and the XRI-UNO Figure 2, CdTe semiconductor based detector provided by X-Ray Imatek Company.



Figure 1: Hybrid Compact Gamma Camera (HCGC)



Figure 2: XRI-UNO CdTe detector

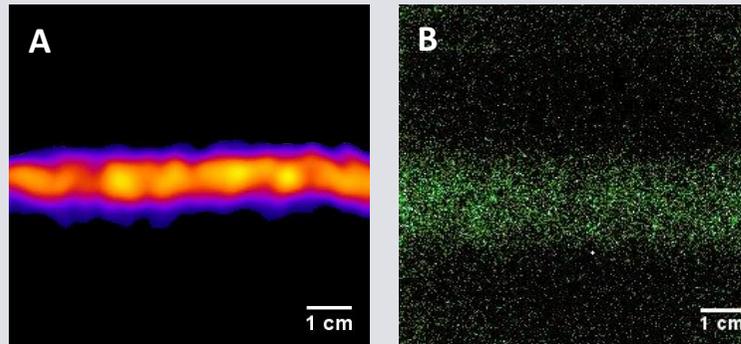


Figure 3: A 0.45mm diameter cannula tube, 18mm length filled with 0.63MBq ^{99m}Tc A) gamma image from HCGC B) gamma image from XRI-UNO

Result

In Figure 3, a 0.45mm diameter cannula tube was filled with 0.63 MBq ^{99m}Tc. Two imaging sets represented the gamma image from HCGC and XRI-UNO (Figure 3 A and B). The gamma image from HCGC has higher system spatial resolution.

Conclusion

The performance of the HCGC and XRI-UNO were evaluated and compared. The studies of the initial images encourage us to carry out further evaluation in preparation for HCGC uses in surgical theatre setting rather than XRI-UNO.

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