



Contribution ID: 27

Type: invited talk

Direct three gamma positronium imaging and cascade gamma chemical imaging

Nuclear medical imaging devices, PET and SPECT, are powerful and highly sensitive to the accumulation of molecules with a small amount of radio-nuclides. Extracting physico-chemical micro-environmental information in addition to accumulation could contribute to more accurate diagnosis and therapy in radio-theranostics. A novel direct imaging technique of three gamma decays from ortho-positronium together with two gamma decays for quantifying the $3g/2g$ ratio indicating oxygen concentration and void size in PET device, as well as the cascade gamma-ray sensing of pH with In-111 nuclides in SPECT device will be discussed in the presentation.

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Yes

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Session Classification: Positronium research